

Econ 911: Economic Prehistory

Final Exam

Greg Dow

April 12, 2017

Use math or graphs when this helps to make your answers clearer or more precise.

Please answer either question 1 or 2. Do not answer both.

1. Dow, Mitchell, and Reed (2016) have a theory about warfare over land in early foraging and farming societies. Describe the main assumptions and conclusions in their paper, and the nature of the empirical evidence they use. Then comment on the strengths and weaknesses of their approach.
2. Choose one of the following three readings: Kelly (2013), Ferguson (2013), or Ames (1995). Recall that Kelly and Ferguson are about warfare, while Ames is about inequality. What are the most important facts an economist should learn from the reading you chose? Why are these facts important? Explain.

Please answer either question 3 or 4. Do not answer both.

3. Borgerhoff Mulder et al. (2009) have a theory about the reasons for differences in levels of inequality across various types of economic systems. Describe the main theoretical ideas in their paper, and the nature of the empirical evidence they use. Then comment on the strengths and weaknesses of their approach.
4. Dow and Reed (2013) have a theory about the origins of inequality in prehistory. Describe the main assumptions and conclusions in their paper, and the nature of the empirical evidence they use. Then comment on the strengths and weaknesses of their approach.

Please answer either question 5 or 6. Do not answer both.

5. Allen (1997) is an economic historian who wants to explain the origins of the state in Egypt. According to Allen, what were the most important factors in the development of the ancient Egyptian state? How convincing is his argument? Explain.
6. Algaze (2001) is an archaeologist who wants to explain why states developed in southern Mesopotamia before they developed in other regions of southwest Asia. According to Algaze, what were the most important factors in the development of city-states in southern Mesopotamia? How convincing is his argument? Explain.

Please answer either question 7 or 8. Do not answer both.

7. Baker, Bulte, and Weisdorf (2010) have a theory about the origins of the state (or more generally, hierarchy). Describe the main assumptions and conclusions from their theory. Then describe their main empirical results. Finally, comment on the strengths and weaknesses of their approach.
8. Mayshar, Moav, and Neeman (2014) have a theory about why the organization of early states differed in Egypt and Mesopotamia. Describe the main assumptions and conclusions from their theory. Then discuss what facts they claim to explain and how. Finally, comment on the strengths and weaknesses of their approach.

Please answer either question 9 or 10. Do not answer both.

9. Dow, Reed, and Olewiler (2009) have a theory about the origins of agriculture. Describe the main assumptions and conclusions in their paper, and the nature of the empirical evidence they use. Then comment on the strengths and weaknesses of their approach.
10. Bockstette, Chanda, and Putterman (2002) claim that nations with a longer history of state institutions had faster economic growth during 1960-1995. Give a general description of their data set, econometric methods, and main results. Also discuss some possible explanations for their results.

Econ 911 Final Exam

Greg Dow

April 15, 2013

Please answer all questions (they have equal weight).

1. Let's define prehistory as the period of time beginning with the appearance of anatomically modern humans and ending with the invention of writing.
 - (a) For the first 187,000 years of prehistory, people were mobile hunter-gatherers. What were the most important economic developments during this time? Why did these developments occur? Justify your answers.
 - (b) During the next 8000 years of prehistory, people in certain regions began to live in small sedentary farming communities. Many economists believe that farming led to higher productivity. However, many archaeologists believe that the early farmers were worse off than their forager ancestors. Separately discuss the basis for each of these ideas. Then discuss whether both of these ideas could be true.

2. I recently had an email exchange with an archaeologist who did not believe the Malthusian population assumptions used in several Dow and Reed articles. He appeared to believe that population had a large exogenous component that was independent of natural resources or technology, both for foragers and farmers.
 - (a) What theoretical arguments should I use to persuade him to change his mind? What empirical arguments should I use? Explain.
 - (b) Describe Jared Diamond's view of the role of population in human history. Does he think that it influenced other important variables? Does he have a Malthusian view of population growth? Explain.

3. Groups of a few hundred people often have a 'big man' who is freely chosen by the other members of the community. Groups of a few thousand people usually have a 'chief' who inherits his position and has a monopoly on the use of force.
 - (a) If you were designing a model to explain this pattern, what would the model look like? Describe the main variables and causal mechanisms. Be sure to distinguish between exogenous and endogenous variables, ultimate and proximate causes, etc.
 - (b) According to Allen (1997), what led to the emergence of a state in Egypt? Why? Hint: focus on the roles of technology and geography.

4. Choose either the Dow, Reed, and Olewiler article (JEG, 2009) on the origins of agriculture or the Dow and Reed article (JPE, 2013) on the origins of inequality. Do not write about both.
- (a) What is the main exogenous variable? What are the main endogenous variables? What choices are made by individuals or groups? What are these individuals or groups maximizing? What are the equilibrium conditions? How does the model explain the phenomenon it was designed to explain?
- (b) Any model inevitably omits a large number of potentially relevant variables. For the model in (a), what are the two most important omitted variables? How would including these variables improve the predictions of the model or its explanatory power? Explain.
5. For each of the following statements: (i) identify a society that is an exception to the statement, or probably an exception; (ii) justify your claim that the society is an exception; (iii) propose a new statement on the same subject that would be a more accurate generalization; and (iv) justify your new statement. You should discuss different societies in parts (a) and (b).
- (a) "Agriculture is a necessary condition for the emergence of inequality."
- (b) "The emergence of a state makes most of the population worse off."
6. Your friend makes the following statements.
- (a) "Warfare is economically irrational because it involves large costs without any offsetting benefit." Use the cases of the Yanomamo, the Maring, and the Enga to explain why rational economic behavior by individuals or groups can lead to bad aggregate outcomes at the level of the region as a whole.
- (b) "Societies tend to develop efficient institutions that solve their most important economic problems." Use the case of Easter Island to explain why your friend might want to rethink this idea.

BONUS QUESTION (5% of total exam; a few sentences are enough):

What was the most surprising thing you learned in this course? Why?

Econ 911 Final Exam

Greg Dow

April 20, 2010

Please answer all questions (they all have equal weight).

1. Early in the course we discussed hunter-gatherer economies.
 - (a) Kelly (1995) points out that property rights in such economies are highly variable. In some societies people share food within groups, while in others they do not. In some societies there are clear territorial boundaries with respect to land, while in others there are not. According to Kelly, what are the major factors that account for this institutional variation? Explain.
 - (b) Many researchers have used observations on modern or recent hunter-gatherer societies to gain insight into the institutions that may have existed in the Upper Paleolithic (about 45-15 KYA). Based on such evidence, what can we say (or guess) about Upper Paleolithic social and economic institutions? What are the limitations of this approach?

2. Here is a question about equations.

- (a) Consider a differential equation of the following type:

$$dN/dt = rN[1 - (N/K)]$$

- Explain the meaning of N , r , and K . Then give two examples of papers discussed in class where an equation of this kind was used. For each paper, explain why the equation was important or significant.
- (b) Give two examples of papers discussed in class that used Malthusian population dynamics (do not use any paper by Dow). For each paper, explain why this type of population assumption was important or significant. In one of the two cases, write out the equation describing population dynamics and explain the notation.

3. You are discussing economic prehistory with a friend at a bus stop.

- (a) Your friend says, "Agriculture was an amazing technological innovation. Early farmers sure were lucky to enjoy that kind of progress." What do you say?
- (b) Your friend says, "The state was an amazing institutional innovation. People sure were lucky that managers were able to organize society in such an efficient way." What do you say?

4. Choose either the Dow, Reed, and Olewiler article (JEG, 2009) on the origins of agriculture, or the Dow and Reed paper (2010) on the origins of inequality. Do not write about both.
 - (a) For the paper you chose, sketch the main elements of the theoretical model. What are the key assumptions? What are the key predictions or results?
 - (b) What evidence do the authors use to support or justify the theoretical argument? Is the evidence not very convincing, somewhat convincing, or very convincing? Explain your answer.

5. Suppose we define warfare to mean "organized lethal violence that reallocates control over land or other natural resources".
 - (a) Describe two societies that had warfare in this sense. Give as much empirical information as possible about the natural environment, the economy, and the social institutions of each society.
 - (b) Sketch a theory of warfare. You don't need to do any math, but you should say what the objective functions are, what the constraints are, what the equilibrium looks like, what the exogenous and endogenous variables are, etc. Discuss the empirical predictions you would expect your model to generate.

6. You are having another conversation with your friend at a bus stop.
 - (a) Your friend is surprised to learn that anatomically modern humans have been around for 200,000 years, but agriculture began only about 13,000 years ago and the industrial revolution began only about 250 years ago. She begins to wonder how people whose ancestors lived in small foraging bands can organize modern societies with millions of people. Assuming pre-agricultural foragers had roughly the same intelligence and preferences as people today, what do you tell her about how large-scale societies arose?
 - (b) She has also heard about Easter Island, and she is worried that modern societies may collapse due to resource depletion problems. What can you say to reassure her (if anything)?

BONUS QUESTION (5% of total exam; a few sentences are enough):

What is the most important thing you learned in this course? Why?

Econ 911 Final Exam

Greg Dow

April 9, 2008

Please answer all questions (they all have equal weight).

1. You are talking to a friend who knows nothing about economic prehistory. He or she is waiting for a bus so the conversation has to be short.
 - (a) You mention that 15,000 years ago, all humans lived in nomadic foraging bands. By about 2000 years ago, some societies had millions of people and covered very large geographic areas. Your friend wants to know why. What do you say?
 - (b) You mention that you have been reading Jared Diamond's book "Guns, Germs, and Steel". Your friend has heard that it is an important book and wants to know your opinion of it. What do you say?

2. You are talking to another friend who is also waiting for a bus.
 - (a) Your friend has heard somewhere that 'primitive' foragers did not have any property rights and shared all resources equally. Comment on this view.
 - (b) Your friend has heard somewhere that 'primitive' foragers had too many children and were constantly in danger of starvation. Comment on this view.

3. In his 2005 article "From foraging to farming: Explaining the Neolithic revolution," Jacob Weisdorf reviews the major theories about the origins of agriculture from the disciplines of archaeology and economics.
 - (a) What are the major theories from archaeology? What are the major theories from economics? You don't need to give an exhaustive list, just group the theories into a few broad categories and sketch the main causal relationships among variables.
 - (b) Can any of these theories (from either discipline) be rejected immediately based on known facts? What theories deserve continued scrutiny in future research?

4. Consider the 2001 article by Richerson, Boyd, and Bettinger ("Was agriculture impossible during the Pleistocene but mandatory during the Holocene? A climate change hypothesis").
 - (a) RBB claim that climate made agriculture impossible during the Pleistocene period (before 11,600 years ago). Why do they say this? Evaluate this claim using logic and evidence.
 - (b) RBB claim that agriculture was mandatory during the Holocene (after 11,600 years ago). Why do they say this? Evaluate this claim using logic and evidence.

5. Choose either the 2006 Marceau and Myers article in EJ ("On the early Holocene: Foraging to early agriculture") or the 2008 paper by Dow, Reed, and Olewiler ("The transition to agriculture: Climate reversals, population density, and technical change"). Do not discuss both.
 - (a) For the paper you chose, sketch the main elements of the theoretical model. What are the key assumptions? How do the pieces of the model fit together? What are the main predictions or implications that emerge from the analysis?
 - (b) Is the available empirical evidence (either from within the paper itself or from other sources) consistent with the theory? Explain.

6. Choose either the origins of warfare or the origins of inequality (not both).
 - (a) Sketch one theory of how the phenomenon arose. This could either be your own personal theory or a theory we discussed in the course. Within the framework of this theory, identify the exogenous and endogenous variables; the proximate and ultimate causes of the phenomenon; and the necessary and sufficient conditions for the phenomenon to occur.
 - (b) What empirical evidence tends to support the theory in part (a)? What evidence (if any) seems inconsistent with it? Are there alternative theories? If so, what empirical information would be useful in choosing between the rival theories?

7. There are two general types of theory about the origins of the state: (a) the elite are primarily managers who solve social and economic problems (and that is why the state arose), or (b) the elite are primarily thugs who use violence and coercion to enrich themselves (and that is why the state arose).
- (a) Explain the 'manager' view of the state. What arguments do people tend to make in favor of it? Assess this perspective using logic and evidence.
- (b) Repeat part (a) for the 'thug' view of the state.
8. Optimists think progress is inevitable and will go on forever. Pessimists think progress only occurs under unusual conditions and can easily be reversed.
- (a) Does your knowledge about foraging societies, the transition to agriculture, and the consequences of agriculture make one of these views seem more reasonable than the other? Explain.
- (b) Easter Island is the classic case of economic and social collapse. Describe the main factors that were responsible for the collapse. Then discuss the following quote: "Easter Island is a special case and does not tell us very much about the probability of continued progress for the modern world as a whole."

BONUS QUESTION (5% of total exam; a few sentences are enough):

What is the most important thing you learned in this course? Why?