

Econ 911: Economic Prehistory

Midterm Exam

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February 21, 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. What are the most important facts an economist should know about the history of the Earth's climate during the last 200,000 years? Discuss the sources of evidence for these facts and why they are significant for the study of economic prehistory.
2. What are the most important facts an economist should know about the history of technology during the last 200,000 years? Discuss the sources of evidence for these facts and why they are significant for the study of economic prehistory.

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

3. Kelly (2013) surveys the anthropological literature on recent hunter-gatherer societies.
 - (a) What do we know about typical group sizes in HG societies? Can economic reasoning help in understanding these observations? Explain.
 - (b) What do we know about fertility and mortality in HG societies? Are these demographic variables related to any economic variables? Explain.
4. Ashraf and Galor (2011) argue that the Malthusian model provides a good description of population dynamics in pre-industrial societies. Describe the theoretical structure of this model, its main predictions, and the econometric research these authors carried out. How convincing are their results? Explain.

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

5. Fitzhugh (2001) has a theory about the conditions under which technological innovation is likely to occur in HG societies. What are the main economic ideas behind his theory? What empirical evidence does he provide to support it? How convincing is his story? Explain.
6. Dow and Reed (2015) have a theory about the transition from mobile to sedentary foraging. What are the main economic ideas behind their theory? What empirical evidence do they provide to support it? How convincing is their story? Explain.

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

7. Weisdorf (2005) uses marginal product curves for foraging and agriculture to think about possible causes of the transition to agriculture. His graph suggests that there are three general ways in which such a transition could occur. Explain how each causal mechanism might work, and discuss the theoretical or empirical issues that arise in each case.
8. Bowles and Choi (2013) believe that agriculture and property rights coevolved. Describe their theoretical argument, the nature of the simulations they carry out, and the main conclusions they reach. How convincing is their story? Explain.

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

9. Bellwood (2005) describes pristine transitions to agriculture in various different regions of the world. Choose two cases of this kind. In each case, describe the archaeological evidence about the timing of the transition, the main plants and animals that were domesticated, and the main social effects of the transition.
10. Various writers have identified important facts about pristine agriculture.
 - (a) Diamond (1997, chs. 8 and 9) argues that the biological endowment of a region was a key factor in determining whether that region had a pristine agricultural transition. What are the main ways in which biological endowments differed across regions? Why did this affect the probability of a transition? Explain.
 - (b) Manon et al. (2006) and Hillman et al. (2001) provide archaeological evidence about the use of plant foods in southwest Asia before and during the Younger Dryas. What are the most important facts they provide? What implications do these facts have for the construction of economic theories about the origins of agriculture in southwest Asia? Explain.

Econ 911 Midterm Exam

Greg Dow

February 27, 2013

Please answer all questions (they have equal weight).

1. Consider the Upper Paleolithic economy and the modern Canadian economy.
 - (a) What are the main ways in which they are similar? What are the main ways in which they are different? What do the differences imply (if anything) about the formal models we should use to understand each kind of economy? Why?
 - (b) Consider the following statement: "In small scale foraging or farming societies, the preferences of agents are largely determined by culture. Since cultures differ widely, economic theory is unlikely to be useful in explaining behavior in these societies. Anyway, we can't observe preferences that existed in the distant past." Defend the usefulness of economic theory in response to this criticism.

2. Kelly (1995) and Baker (JPE, 2003, "An equilibrium conflict model of land tenure in hunter-gatherer societies") are both concerned with institutions.
 - (a) Describe the theoretical framework Kelly uses to explain food sharing in foraging societies. What are the main exogenous variables? Why do they affect sharing? Why is food sharing similar to a prisoner's dilemma game? How might foraging societies overcome the prisoner's dilemma problem? Explain.
 - (b) Describe Baker's model. Who is making decisions? What decisions are they making? In what sequence are the decisions made? What do people want to maximize? How is equilibrium defined? What are the main exogenous and endogenous variables? Briefly give an example of how an exogenous variable might affect an endogenous variable.

3. Harris and Ross (1987) and Caldwell and Caldwell (2003) are both concerned with population.
 - (a) What are the main points HR make about fertility in pre-industrial societies? If we believe their arguments, is it reasonable to assume that fertility depends on economic variables? Explain.
 - (b) What are the main points CC make about mortality in pre-industrial societies? If we believe their arguments, is it reasonable to assume that mortality depends on economic variables? Explain.

4. Consider Kremer (QJE, 1993, "Population growth and technological change"); Dow and Reed (JEBO, 2011, "Stagnation and innovation before agriculture"); and Baker (JEG, 2008, "A structural model of the transition to agriculture").
 - (a) Each of these articles treats population as an endogenous variable. Describe the similarities and differences in the ways population is modeled by these authors.
 - (b) Each of these articles treats technology as an endogenous variable. Describe the similarities and differences in the ways technology is modeled by these authors.

5. Suppose you have a sample of 100 countries. You run a regression in which the dependent variable is income per person in 2013 while the independent variable is the biological endowment of the country. The biological endowment is defined to be the number of wild plant species in the country (or its region) that were good candidates for domestication before agriculture began in that country. Assume the coefficient for biological endowment is positive and statistically significant.
 - (a) How would Jared Diamond probably explain this finding? Justify your answer.
 - (b) Can you think of any good alternative explanations? Justify your answer.

Econ 911 Midterm Exam

Greg Dow

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

1. Economists who become interested in prehistory generally start out knowing a lot of modeling techniques but relatively few facts.
 - (a) With regard to the Upper Paleolithic economy (roughly 45 - 15 KYA), what are the key facts an economist should know? Why are they important? What data sources are available? How reliable are these data sources?
 - (b) Consider the following statement: "Hunter-gatherers work hard, have short lives, and are often on the edge of starvation. They suffer from an absence of property rights, poor technology, frequent disease, and lack of control over their fertility." Do you mainly agree or mainly disagree with this statement? Justify your answer.

2. Consider the 1993 Kremer QJE article ("Population growth and technological change: One million B. C. to 1990").
 - (a) What is the purpose of the theoretical model? Describe the structure of the model. Is anyone maximizing anything? Are there any equilibrium conditions? Are there any exogenous variables? What are the main conclusions?
 - (b) What empirical evidence does Kremer offer to support his theoretical framework? Comment on the strengths and weaknesses of this evidence.

3. Consider the 2010 Dow and Reed working paper ("Stagnation and innovation before agriculture").
 - (a) What is the purpose of the theoretical model? Describe the structure of the model. Is anyone maximizing anything? Are there any equilibrium conditions? Are there any exogenous variables? What are the main conclusions?
 - (b) What empirical evidence do Dow and Reed offer to support their theoretical framework? Comment on the strengths and weaknesses of this evidence.

4. Consider the 2008 Matt Baker JEG article ("A structural model of the transition to agriculture").
 - (a) What is the purpose of the theoretical model? Describe the structure of the model. Is anyone maximizing anything? Are there any equilibrium conditions? Are there any exogenous variables? What are the main conclusions?
 - (b) Summarize the key econometric results in the article. Do the results shed any light on issues we discussed elsewhere in the course? In particular, do they provide any insight into the causes of pristine agricultural transitions? Why or why not?

5. Here are a couple of questions about Guns, Germs, and Steel by Jared Diamond.
 - (a) In chapter 3, Diamond discusses why Spain conquered the Incan Empire rather than the other way around. What explanation(s) does he provide? Comment on the strengths and weaknesses of his argument.
 - (b) Part Two of Guns, Germs, and Steel (chapters 4-10) is called "The Rise and Spread of Food Production". How does Diamond try to explain the origins of agriculture? Comment on the strengths and weaknesses of his argument.

6. Southwest Asia had the earliest known pristine transition to agriculture.
 - (a) We discussed several readings on southwest Asia: Weiss et al. on Ohalo II at the last glacial maximum; Mithen on the Natufians; and Hillman et al. on the transition to agriculture at Abu Hureyra. We also discussed information on Southwest Asia from the Bellwood and Diamond books. Based on what you know so far, what is your best guess about the causes of the transition to agriculture in this region? You should take into account that there may have been several contributing factors, and you should say why each factor was important or necessary.
 - (b) Based on what you know from Bellwood about sub-Saharan Africa, East Asia, and the Americas, do you think your story from part (a) might generalize to these other examples of pristine agriculture? If the available information is not sufficient, say what type of research or evidence would be helpful in determining whether your story applies to these other regions.

Econ 911 Midterm Exam

Greg Dow

February 19, 2008

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

1. Economic prehistory raises some unusual methodological issues.
 - (a) Consider the Upper Paleolithic, which lasted from roughly 45 to 15 KYA. Think about an economy as being described by natural resources, population, technology, institutions, and preferences. For which of these variables do we have reasonably good information? How do we get this information? For which variables is information poor or absent? How can we deal with issues of the latter kind?
 - (b) We cannot generally run regressions to test hypotheses about economic prehistory (although Matt Baker tries). How should we think about the relationship between theory and evidence in this field? Is there any systematic way to decide whether a particular theory is right or wrong? If possible, provide some examples that differ from those used in answering questions 2 and 3 below.

2. Choose either the 2003 Matt Baker article in JPE ("An equilibrium conflict model of land tenure in hunter-gatherer societies") or the 2007 Matt Baker working paper ("A structural model of the Neolithic evolution"). Do not discuss both (but you can use the one not discussed here in question 1(b) if you like).
 - (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.

3. Choose either the 1993 Kremer QJE article ("Population growth and technological change: One million B. C. to 1990") or the Dow and Reed working paper ("Why did progress take so long?"). Do not discuss both (but again, you can use the one not discussed here in question 1(b) if you like).
 - (a) For the paper you chose, answer the same questions as in 2(a) above.
 - (b) For the paper you chose, answer the same questions as in 2(b) above.

4. Here are a couple of questions about Guns, Germs, and Steel by Jared Diamond.
 - (a) The prologue of the book is titled "Yali's Question". Who is Yali? What is his question? How does Diamond think we should try to answer it?
 - (b) Diamond talks a lot about the role of biological endowments of plants and animals in explaining the origins of agriculture. According to Diamond, what were the main advantages of southwest Asia? Suppose someone argues that Diamond hasn't really explained the transition to agriculture because the Natufians had a good biological endowment for 2000 years without switching to agriculture. What reply do you think Diamond might give?

5. Peter Bellwood surveys the key cases of pristine agriculture (Southwest Asia, sub-Saharan Africa, East Asia, the Americas).
 - (a) Are there any useful empirical generalizations an economist can derive from these cases? You might want to organize your answer using categories like resources, geography, technology, and population (but feel free to use whatever categories seem most convenient).
 - (b) We also looked at several more specialized readings on southwest Asia: Weiss on Ohalo II at the last glacial maximum; Mithen on the Natufians; and Hillman on the transition to agriculture at Abu Hureyra. Choose one of these readings (not two or all three) and describe the most significant evidence that emerges from the reading. Explain why you think this evidence is important.

6. Almost every formal model in economic prehistory (at least, every model in which population is an endogenous variable) makes a 'Malthusian' assumption.
 - (a) What does it mean to say that a model is Malthusian? What does this imply about the behavior of observable (or potentially observable) variables?
 - (b) Consider the discussion of fertility and mortality by Marvin Harris and Eric Ross (the anthropologists); the discussion of the same topics by Caldwell and Caldwell (the demographers); and the skeletal evidence on health and nutrition from Mark Cohen. Choose one of these readings (not two or all three) and say whether you think it is consistent with a Malthusian framework. Try to make the relationships between theory and evidence as clear as you can.

