

## Econ 354

### Exam on "The Good, the Bad, and the Economy" by Louis Putterman

Greg Dow

April 19, 2022

\*\*\*Please answer all of the following questions.\*\*\*

1. Many economists assume that individuals are rational and selfish.

(a) LP thinks that human nature is more complex than this. Describe three ways in which human nature goes beyond pure self-interest, and in each case say why such behavior has important economic implications. Then carefully explain how biological evolution could have led to cooperation among genetically unrelated individuals.

(b) Consider the voluntary contribution game from chapter 6. For the simple version of this experiment explain (i) the rules; (ii) what game theory predicts about behavior; and (iii) how real people tend to behave. Then discuss (iv) how the rules can be changed to obtain better outcomes and why these changes tend to be helpful.

2. Here are some questions about the development of institutions.

(a) Draw a Hawk-Dove game and use it to explain how early foraging groups could have established property rights over natural resources. Then draw an Edgeworth box and use it to explain how early foraging groups could have established trading relationships.

(b) LP believes the agricultural revolution had large effects on institutions and inequality. Describe his arguments and discuss some criticisms of his ideas. Then do the same thing for the industrial revolution.

3. LP says that the ratio of income per person in rich countries to income per person in poor countries was 3:1 in the year 1500 AD but had risen to 45:1 by the year 1990.

(a) Explain how this increase in inequality was tied to (i) differences in the starting points among countries; (ii) differences in the timing of industrialization; and (iii) differences in the timing of the demographic transition. Based on your answers, do you expect the ratio to increase, remain roughly constant, or decrease during the rest of this century? Why?

(b) Professor X says that (i) humans have made substantial institutional progress over the last 100 years, and (ii) they are likely to make further institutional progress over the next 100 years. What arguments could Professor X make to support these opinions? Do you think this level of optimism about institutional innovation is justified? Explain.

BONUS QUESTION (worth 5% of exam, two sentences are enough): What is the most important thing you learned in this course? Why?

From: Gregory Dow <gdow@sfu.ca>  
Subject: ECON 354 EXAM ON LOUIS PUTTERMAN  
Date: April 28, 2021 at 11:55:48 AM PDT

1. LP wants to understand human nature.

(a) According to LP, how does evolutionary biology explain the following? (i) people often cooperate even if they are genetically unrelated; (ii) people often want others to think well of them; (iii) people often “do the right thing” even when no one is watching; (iv) people often think in terms of “us and them”.

(b) Economists frequently assume that individuals are “rational” and “self-interested”. Explain what each of these terms means to an economist. Now suppose Professor X (who is not an economist) claims that these assumptions are unrealistic and therefore economic models are useless. What observations can Professor X use to support her opinion? How might an economist justify the use of “unrealistic” models?

2. LP wants to understand economic behavior.

(a) Choose one of the laboratory experiments discussed in chapter 6. For this experiment carefully explain (i) the rules of the game; (ii) what game theory predicts about behavior; (iii) how the actual results differ from the theoretical predictions; and (iv) what we can learn from the experiment about how to design institutions in the real world.

(b) Choose either the Edgeworth box model or the Malthusian population model (do not write about both). For the model you chose, carefully explain (i) the main assumptions; (ii) the economic reasoning involved; (iii) the main conclusions; and (iv) why the model is important for LP’s book as a whole. Refer to the graphs in my lecture notes where appropriate.

3. LP wants to understand global economic inequality.

(a) LP believes that changes in technology lead to changes in institutions, and that both of these factors together can lead to changes in inequality. Carefully explain how he believes this occurred in the cases of (i) the agricultural revolution and (ii) the industrial revolution.

(b) Since the year 1500 AD, inequality across countries has increased dramatically. LP argues that this was partly caused by differences in the timing of the demographic transition (DT) across different countries. Explain what the DT is; why the industrial revolution led to the DT; why the DT led to rising incomes; and how the DT contributed to global economic inequality today.

From: Gregory Dow <gdow@sfu.ca>  
Subject: ECON 354 FINAL EXAM ON PUTTERMAN BOOK, FRIDAY DECEMBER 11, 2020, 3:30 - 6:30 PM VANCOUVER TIME  
Date: December 11, 2020 at 3:25:06 PM PST  
To: <econ354-d1@sfu.ca>

1. LP says a lot about human nature.

(a) According to LP, what are the key elements of human nature? Provide a detailed description.

(b) What sources of information does LP use to learn about human nature, and how does he justify his opinions about it?

(c) How does LP believe human nature influences or constrains institutions in the real world? Give two examples and carefully explain your reasoning.

2. LP says a lot about economic inequality between rich and poor nations in the world today. Write an essay discussing how LP would answer the following questions.

(a) what were the main developments before the year 1500 AD that are important for understanding modern inequality, and why?

(b) What were the main developments after 1500 AD that are important for understanding modern inequality, and why?

(c) What strategies are likely to be more effective and less effective in dealing with this problem, and why?

3. Give verbal descriptions of the following three models. In each case discuss the main assumptions, the economic logic, the main conclusions, and explain why the model is important in the framework of LP's book as a whole.

(a) the voluntary contribution game;

(b) the Edgeworth box;

(c) the Malthusian population model.

Econ 354, Greg Dow, April 14, 2020

Exam on Louis Putterman, "The Good, the Bad, and the Economy" (2012)

All questions have equal weight. Clear, specific, and complete answers are best. In all cases, treat the question as an opportunity to show what you have learned from reading the book and also from reading my lecture notes about it.

1. LP spends quite a bit of time discussing human biological evolution. Write a well-organized essay explaining

(a) how biological evolution works in general;

(b) how LP thinks it led to the development of cooperation among modern humans; and

(c) how LP thinks it led to the limits on cooperation we typically observe in the modern world.

2. Choose ONE of the following models: (i) the voluntary contribution game; (ii) the Hawk-Dove game; (iii) the Edgeworth box; or (iv) the Malthusian population model. Imagine you are explaining the model to a friend who knows nothing about economics. Accordingly, you have to define or explain all of the technical ideas of the model using only words a non-economist would understand (remember, no graphs and no math).

(a) Define the basic concepts of the model and describe its central assumptions.

(b) Explain the economic logic of the model and its most important conclusions.

(c) Discuss how the model fits into the book as a whole. What role does it play?

3. Write an essay about the relationship between the current COVID-19 pandemic and the ideas from LP's book. Your answer should address the following three subjects:

(a) what the pandemic reveals or illustrates about human nature;

(b) what the pandemic reveals or illustrates about institutions; and

(c) how the pandemic is likely to interact with global economic inequality.

Use your general knowledge about the coronavirus pandemic and demonstrate what you have learned from the book. Give specific examples to illustrate your points, and justify the opinions you express.

## Econ 354

### Exam on The Good, The Bad, And The Economy by L. Putterman

Greg Dow

April 18, 2016

\*\*\*Please answer all of the following questions. Question 3 is on the back.\*\*\*

1. One important concept in LP's book is human nature.
  - (a) Define human nature, and explain why this concept is important for economics. Then use ideas from evolutionary biology to explain why human nature might include the following: (i) a concern for fairness; (ii) a desire for social approval; and (iii) a tendency for people to divide themselves into groups of 'us' and 'them'.
  - (b) Some people claim that a concern for ownership or property rights is another part of human nature. Draw a payoff matrix for the 'hawk-dove' game and show why this game is not a prisoner's dilemma. Define a Nash equilibrium and show why each strategy combination is or is not a Nash equilibrium. Finally, discuss how this game could help explain the evolution of property rights among animals and early humans.
  
2. A second important concept in LP's book is institutions.
  - (a) Suppose most human populations include some people who are reciprocators and other people who are entirely self-interested. Based on your reading of LP's book, describe three ways in which institutions can be designed to promote cooperation when public goods are important. Justify your answers using logic and evidence (the evidence can be from experiments, the real world, or both).
  - (a) Player A wants a job from player B. If A receives the job, A gets +10 and B gets -4. First A chooses an amount  $x$  to put into an envelope, where  $0 \leq x \leq 10$ . Then B opens the envelope, keeps  $x$ , and decides whether to give A the job. What does game theory predict about the outcome of the game? What does Pareto efficiency require? What would probably happen in a laboratory experiment? Give detailed explanations.

3. A third important concept in LP's book is inequality.
- (a) LP believes that events before the year 1500 AD had important effects on which nations are rich and poor today. Beginning with foraging societies 13,000 years ago and ending with the year 1500, summarize the historical events or processes that are most relevant for understanding present-day inequalities among nations. Try to tell a clear story and be specific about cause-and-effect relationships.
  - (b) LP also believes that events after the year 1500 AD had important effects on the inequality among rich and poor nations today. Beginning with the world in 1500 and ending in the twentieth century, summarize the historical events or processes that are most relevant for understanding present-day inequalities among nations. Again, tell a clear story and be specific about cause-and-effect relationships.
  - (c) Looking at the situation in the world today, describe three strategies LP believes would be effective in reducing poverty in developing countries. In each case, say why the strategy would be helpful and briefly comment on whether people in rich countries would be likely to support the strategy.

BONUS QUESTION (worth 5% of exam grade, a few sentences are enough):

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

## Econ 354

### Exam on The Good, The Bad, And The Economy by L. Putterman

Greg Dow

April 19, 2015

\*\*\*Please answer all of the following questions. Question 3 is on the back.\*\*\*

1. Here are some questions about concepts.
  - (a) Give two different ways in which an economist could define institutions, discuss how the definitions differ, and say why each definition could be useful in certain situations. Then describe two examples of institutional innovations over the last 100 years that you believe have led to significant improvements in the quality of life for ordinary people in modern societies. Justify your answers.
  - (b) One can define 'homo economicus' as a theoretical person who is (i) rational and (ii) self-interested. Say what an economist would mean by the terms 'rational' and 'self-interested'. What are the arguments for and against using 'homo economicus' as a basis for economic models? How does LP believe that human nature differs from 'homo economicus'? How does LP use evolutionary biology to account for these differences? Give a detailed explanation.
2. Here are some questions about models.
  - (a) Choose one of the following games: (i) the voluntary contribution game; (ii) the ultimatum game; or (iii) the trust game. For the game you choose, answer each of the following questions. What are the rules of the game? What does game theory predict about the outcome of the game and why? What are the main results when the game is played in a laboratory? How does LP interpret these results and why?
  - (b) Choose one of the following two models: (i) the Edgeworth box model; or (ii) the Malthusian population model. For the model you choose, do the following things. First, describe the main assumptions of the model using both graphs and words. Be sure all axes and curves are labeled and explained. Second, identify the main theoretical conclusions, and explain in detail how these conclusions are reached. Third, discuss how the model fits into the overall framework of LP's book.

3. Here are some questions about inequality.
- (a) LP believes that (i) changes in technology can lead to changes in institutions, and (ii) a combination of changes in technology and changes in institutions can lead to changes in inequality. How does he apply these ideas to the shift from foraging to agriculture? How does he apply these ideas to the Industrial Revolution? In each case, give a detailed explanation of LP's arguments, and briefly describe potential criticisms that someone could raise against his arguments.
  - (b) Professor X says that the demographic transition caused the standard of living to rise for the majority of the population in rich countries. Professor Y says that the demographic transition caused economic inequality to rise at a global level. What are the arguments supporting each professor's point of view? Is there any conflict between these two points of view, or could both professors be right? Explain.

BONUS QUESTION (worth 5% of exam grade, a few sentences are enough):

Which of the four books did you like the most? Why?



## Econ 354

### Exam on The Good, The Bad, And The Economy by L. Putterman

Greg Dow

December 12, 2014

\*\*\*Please answer all of the following questions. Question 3 is on the back.\*\*\*

- 1(a) In general, what is the difference between a positive statement and a normative statement? Provide one short example (not related to LP's book) of each of the following things: a true positive statement; a false positive statement; a popular normative statement; and an unpopular normative statement. Then describe the main ways in which LP's book involves positive statements, and the main ways in which it involves normative statements.
- 1(b) Professor X says, "If human nature had developed through biological evolution, then all humans would be motivated by self-interest alone. Clearly this is not the case, so there is no connection between human nature and biological evolution." First define what is meant by the concept of human nature, and then explain why Prof X might believe that biological evolution leads to selfishness. What would LP say in response to this statement? LP's response might be complicated so be sure your answer is complete and well organized.
- 2(a) Consider a game with two players, A and B. First, the experimenter gives \$24 to each player. Second, A chooses an amount  $x$  to place in an envelope, where  $0 \leq x \leq 24$ . Third, the experimenter adds the same amount  $x$  to the envelope, so now the total amount in the envelope is  $2x$ . Finally, the envelope is given to B, who chooses some amount  $y$  to send back to A, where  $0 \leq y \leq 2x$ . B keeps the rest.
- Write the utility functions  $u_A$  and  $u_B$  for the two players algebraically and briefly explain your answer. Then compute the sum of the utilities  $u_A + u_B$ .
  - Draw a graph with  $u_A$  on the horizontal axis and  $u_B$  on the vertical axis. Assuming  $x$  is chosen to maximize the sum  $u_A + u_B$ , indicate the set of all points that can be reached through some feasible choice of  $y$ , and explain.
  - What would game theory predict about the outcome of this game? Why? Indicate the outcome predicted by game theory on your graph from (ii).
  - What would probably happen if this game were played by real people in a laboratory? How would LP interpret these probable results? Explain.
- 2(b) According to LP, in the modern world what are the strengths and weaknesses of (i) market institutions and (ii) government institutions? How are LP's opinions on these issues related to his opinions regarding human nature? Historically, which probably came first, markets or governments? Justify your answers.

- 3(a) Malthus believed that technological progress could increase food per person in the short run, but that food per person would remain constant in the long run. Using several graphs, describe a model that is consistent with these predictions. Label all axes, curves, important points, etc., and explain the assumptions behind each graph. Then explain the economic reasoning that connects the exogenous variable (technology) with the endogenous variable (food per person) in the short and long runs. Make each step in your argument as clear and logical as possible.
- 3(b) Professor Y says, "It is easy to explain why some countries are richer than others. People in the richer countries are smarter and they work harder." What would LP say in response to this statement? In particular, what alternative explanation for global economic inequality would he give? LP's response might be complicated so be sure your answer is complete and well organized.

BONUS QUESTION (worth 5% of exam grade, a few sentences are enough):

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

## Econ 354

### Exam on The Good, The Bad, And The Economy by L. Putterman

Greg Dow

April 17, 2014

\*\*\*Please answer all of the following questions. Question 3 is on the back.\*\*\*

1. Three central topics in this book are progress, institutions, and human nature.
  - (a) Suppose LP says the following: "We could have more progress if we had better institutions. Any potential institutions must respect the limits imposed by human nature. But history shows that institutions can be improved." What goals would LP have in mind when he uses the word "progress"? In what specific ways could better institutions lead to more progress? In what specific ways are institutions limited by human nature? What arguments could LP use to justify his view that institutions have improved in the past and can be improved more in the future?
  - (b) Chapter 5 in LP's book discusses biological evolution. Consider four concepts: (i) natural selection; (ii) group selection; (iii) free riding; (iv) reciprocity. Explain how each of these four concepts is related to human biological evolution, and also why it plays an important role in the book as a whole.
2. Chapter 6 in LP's book discusses a series of economic experiments.
  - (a) In the voluntary contribution game, players are put in groups of four. Each person gets \$10 at the beginning and decides how much of this money to contribute to a group fund. The experimenter then increases the total amount of money in the group fund by 60%. Each person's payoff is \$10 minus their contribution to the fund, plus an equal share (1/4) of the final amount of money in the group fund.
    - (i) What usually happens when this game is played only once?
    - (ii) What usually happens when this game is played ten times?
    - (iii) What usually happens when the experimenter unexpectedly restarts the game for another ten rounds?
    - (iv) What usually happens when each player can punish one or more of the other players after each round, but it is costly to impose the punishment?LP offers an explanation for these results. Describe his explanation and discuss how it accounts for the experimental observations in (i), (ii), (iii), and (iv).
  - (b) Describe the rules of the ultimatum game, say what prediction game theory makes about how people will behave in this game, and say how people actually behave

- in laboratory experiments. What are the main conclusions LP draws from these experimental results? Then answer the same questions for the trust game.
3. Chapters 8-10 deal with economic development and inequality.
- (a) Professor X says: "before the industrial revolution, higher population led to better technology, and better technology led to higher population." Professor Y says: "after the industrial revolution, better institutions have led to more economic development, and more economic development has led to better institutions." For Professor X, carefully explain how she could justify her statements and discuss why these ideas are important. Then do the same for Professor Y.
- (b) According to LP, in the year 1500 income per person in the richest countries was about 3 times higher than in the poorer countries, but in the year 1990 it was 45 times higher. LP also says that the countries with the highest incomes in the year 1500 tend to have the highest incomes or highest economic growth rates today. How would LP explain these observations? Discuss each observation separately, and make your answer as complete as possible in each case.

BONUS QUESTION (worth 5% of the exam grade; a few sentences are enough).

What is the most important new idea you learned about in this course? Why?

## Econ 354

### Exam on The Good, The Bad, And The Economy by L. Putterman

Greg Dow

December 7, 2013

\*\*\*Please answer all three of the following questions. Question 3 is on the back.\*\*\*

1. A major theme of LP's book is that human nature is complex and involves more than just narrow self-interest.
  - (a) Define the idea of human nature. Then define the idea of self-interest. Give two examples of commonplace behavior in which some people act in ways that seem contrary to their individual self-interest. Choose examples where the behavior has significant economic consequences, and carefully justify your answers.
  - (b) A critic of economics says the following: "Economists generally make unrealistic assumptions about human nature. As a result, their models are not very useful." What have economists traditionally assumed about human nature? In what ways are these assumptions unrealistic? How might an economist respond to the critic? What might the critic say in return? Give detailed answers.
2. LP thinks that institutions have changed in response to technological innovation.
  - (a) According to LP, how did institutions change in response to the transition from foraging to agriculture? How did institutions change in response to the industrial revolution? In each case, carefully explain why the institutional changes occurred and how the change in institutions affected economic inequality.
  - (b) Consider two foraging bands called A and B. There are two goods called one and two. Each band has a fixed endowment of these goods. Use an Edgeworth box to explain (i) the conditions under which there would be potential gains from trade between the two bands; (ii) when trade would stop; (iii) what set of points in the box might occur as a result of trade. What variables are exogenous in this model? What variables are endogenous? Explain carefully.

3. LP would probably agree with the following: "Historically, three conditions have been necessary in order to achieve economic progress: technological innovation, institutional innovation, and the demographic transition."
- (a) Give a reasonable definition of economic progress. Then carefully explain why each of the three conditions listed above was necessary to achieve progress. Note that if a condition was necessary, then progress would not have occurred if that condition had been absent, even if the other two conditions were present. Be sure your answers are consistent with this logical use of the word 'necessary'.
- (b) Why does LP think that markets are good? Why does LP think that governments are good? According to LP, what are the main limitations of markets? What are the main limitations of governments? Explain carefully.

BONUS QUESTION (worth 5% of the exam grade; a few sentences are enough).

What is the most important new idea you encountered in this course? Why?

## Econ 354

### Exam on The Good, The Bad, And The Economy by L. Putterman

Greg Dow

April 24, 2013

\*\*\*Please answer all three of the following questions. Question 3 is on the back.\*\*\*

1. Putterman stresses that human nature involves both self-interest and cooperation.
  - (a) Use the 'hawk-dove' game to explain how self-interest could have led prehistoric hunter-gatherer groups to create property rights over territories.
  - (b) Explain why LP believes that the biological evolution of human beings (discussed in chapter 5) led to the following characteristics of human nature: (i) positive and negative reciprocity; (ii) the desire for social approval; and (iii) 'us against them'.
  
2. There are  $n$  people producing food where  $i = 1, 2, \dots, n$ . Total food output ( $q$ ) is equal to the sum of the individual effort levels ( $e_i$ ) so  $q = e_1 + e_2 + \dots + e_n$ . There is a maximum effort level  $E > 0$  which leads to the constraint  $0 \leq e_i \leq E$  for each person  $i$ . Food output is shared equally so each person gets  $q/n$  to eat. A typical person  $i$  has the utility  $u_i = (q/n) - ce_i$  where  $c > 0$  is the cost per unit of effort. We define aggregate welfare to be the sum of the utilities:  $u_1 + u_2 + \dots + u_n$ .
  - (a) Suppose each person simultaneously chooses her effort level and then the game ends. For each of the statements below, identify algebraic conditions involving  $c$  and/or  $n$  such that the statement is true. Briefly explain your reasoning.
    - (i) It is a dominant strategy equilibrium for everyone to choose  $e_i = 0$ .
    - (ii) It is a dominant strategy equilibrium for everyone to choose  $e_i = E$ .
    - (iii) Aggregate welfare is maximized by having everyone choose  $e_i = 0$ .
    - (iv) Aggregate welfare is maximized by having everyone choose  $e_i = E$ .

Use economic concepts to explain why your answers for (i) and (ii) are different from your answers for (iii) and (iv).

- (b) Assume that there is a dominant strategy equilibrium where everyone chooses  $e_i = 0$  but aggregate welfare would be maximized by having everyone choose  $e_i = E$ . The game will be played ten times (everyone knows this in advance). From LP's discussion of the voluntary contribution game in chapter 6, what 'institutions' (or rules) might help to encourage high effort levels? Justify your answer using the experimental evidence presented in chapter 6.

3. Population growth has had an important role in both early and modern economic development.
  - (a) Use some graphs to describe the Malthusian population model. What does this model predict about the effects of technological progress on population and food per person in the short run? In the long run? Explain.
  - (b) What is the demographic transition? How does this idea help to explain the high degree of income inequality across countries in the world today? In what ways is the demographic transition a good thing? Explain.

BONUS QUESTION (worth 5% of the exam grade; a few sentences are enough).

From which book did you learn the most? Why?