

ECON 2001

Winter, 2010

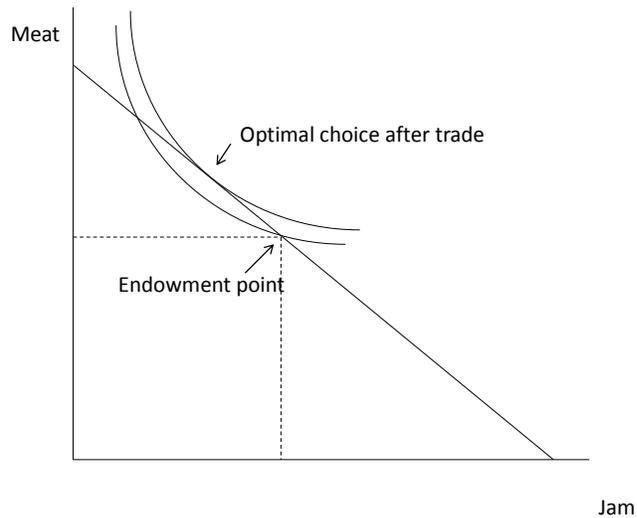
Prof. F. R. Woolley

Assignment 1

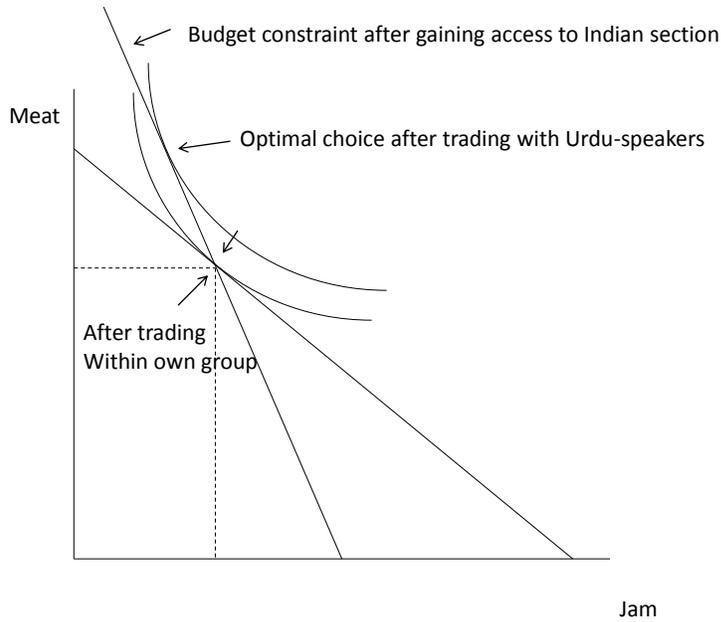
Due Monday January 25th, by 3:30 in the Economics Department Drop Box.

*Please feel free to work with others on this assignment, but write up your answers **on your own and in your own words**. Violating Carleton's academic integrity policy can have serious consequences.*

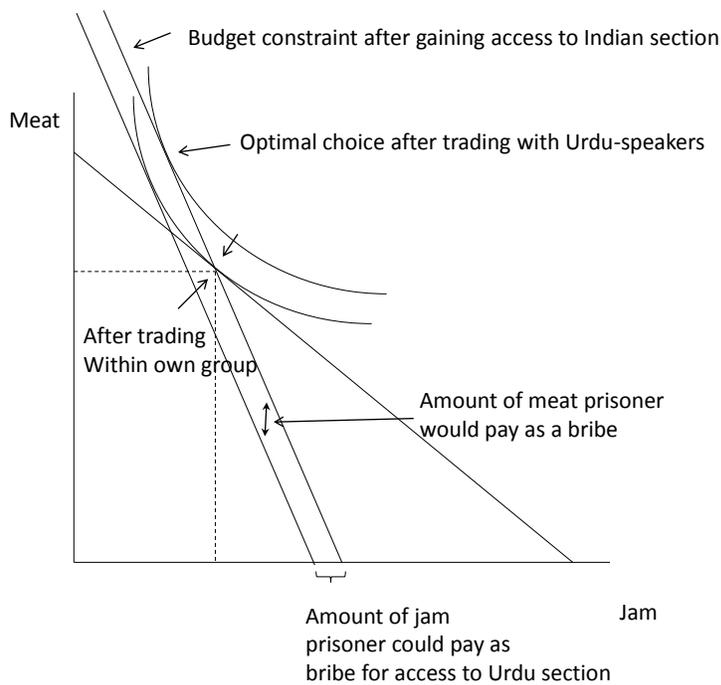
1. Endowments and budget constraints. Please read the summary of Radford's account of life in a prisoner of war camp (originally published in *Economica*, 1945) at the end of the assignment and then answer the following questions. It looks like a lot, but once you've done it all, you should have five little diagrams (two of which look exactly the same), and a bunch of two to five section explanations.
 - a. Read the sections reprinted below under "essential facts about the POW camps". People in the prisoner of war camps had endowments. Where did they come from? What were they? You may find the lecture notes (end chapter 2/start chapter 3) helpful (5 marks).
They came from Red Cross Parcels and also supplies provided by the Germans and Italians who had captured the officers. Although the graphic at the end of the assignment is hard to read, it says (among other things) that the prisoners received from the Reich (the German government) one loaf of bread. People typically lost marks for not mentioning the German/detaining power rations (1 mark) Fo
 - b. Now let's simplify and focus on just two goods, jam and meat. Draw a prisoner's jam/meat endowment point. (5 marks). *For diagram for parts b through d, see below. For this, the only way you could lose marks was by not labeling the axes on your diagram, and not clearly labeling your answer as in 'this is the endowment point'.*
 - c. On your diagram from part (b), draw the prisoner's budget constraint. (5 marks). *Just about everybody got 100% on this, except when the budget constraint didn't go through the endowment point.*
 - d. Take your diagram from part (c). Use indifference curves to show that trading jam and meat can often make a prisoner better off (Hint: what indifference curve is he on if he doesn't trade? If he does?). (10 marks). *For drawing indifference curves showing the gains from trade: 7/10. For including a few sentences of explanation about why he is better off if he trades, that is 'if he trades he is on a higher indifference curve and so we know he is better off.' 10/10. Marks were taken off for, say, not labeling axes, drawing indifference curves that crossed, drawing indifference curves that sloped upwards, etc. The most common mistake that people made here was drawing indifference curves so that the endowment point was the optimal choice, so trade didn't end up making the prisoner better off.*



- e. Read the paragraph starting “the unity of the market” and the section “barriers to trade.” Relative prices often differed in different parts of the camp. How and why? (5 marks). *People in different parts of the camp had different tastes, e.g. the French liked coffee, the British liked tea; the Europeans liked meat, the Indians didn’t. Also, there were barriers to moving between parts of the camp which prevented people from trading enough to equalize prices. People generally got the first part, but often missed the second. Typically you got 3 to 3.5 out of 5 for one part.*
- f. Now re-draw your budget constraint from part (d). Clearly identify the prisoner’s consumption bundle after trading jam and meat within his own group. Now imagine that your prisoner is a meat-eating American who, like Barack Obama, understands Urdu. Suppose your prisoner bribes a guard to get access to the “Indian” part of the camp. Show how this will change his/her budget constraint, using the information about the relative prices in the Indian and Anglo sections of the camp contained in the article (5 marks). *For diagram for parts f through g see below. The major problem that people had was that they didn’t rotate the budget constraint through the (hopefully clearly identified) consumption bundle that the person has after trade. This is the consumption bundle that they take to the Urdu-speaking section of the camp, that’s the bundle that they have to trade, so it has to be on the new budget line.*
- g. Use indifference curves to show that the prisoner is better off if he is able to get access to the Indian section of the camp (5 marks).



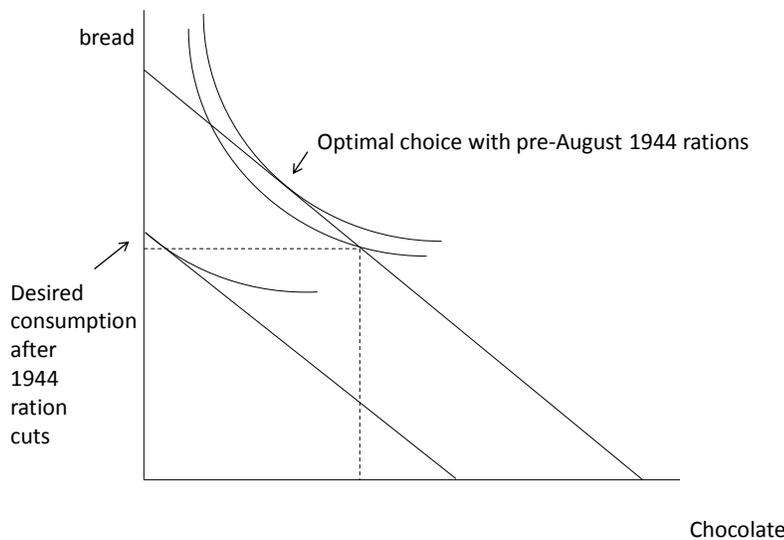
- h. Show on your diagram that maximum amount of meat that a prisoner would be prepared to pay to a guard to get access to the Indian section of the camp (5 marks – warning, this is really hard, read ahead to equivalent and compensating variation).



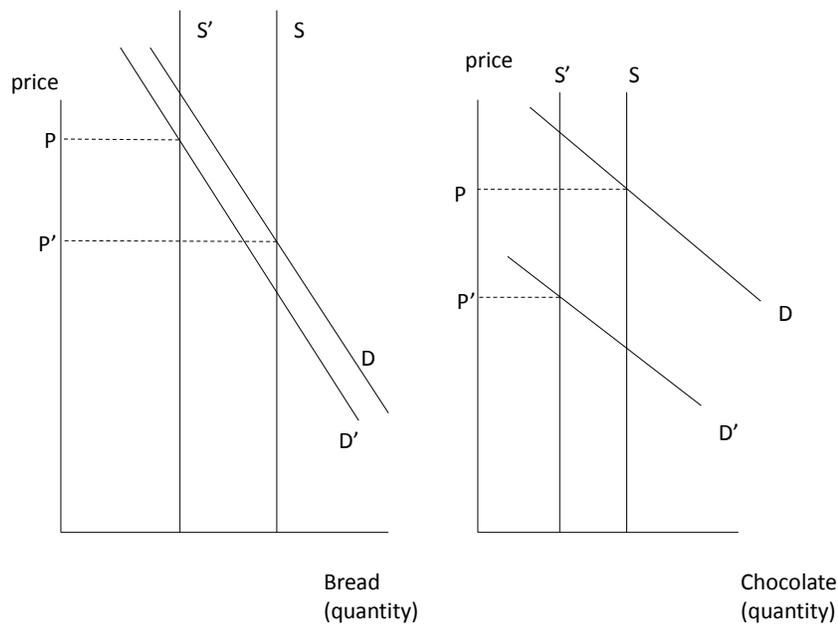
- i. Now re-draw your budget constraint from part (c). Read the section “The August 1944 cuts...” What happened in August 1944? How did Radford expect the August 1944 cuts to affect prisoners’ budget constraints? Relative prices? Illustrate on your diagram. (5 marks). *Generally well done. Using jam/meat is acceptable.*

- j. Chocolate is a luxury good and bread is not. Bread is an essential good and chocolate is not. Explain what these terms mean. Illustrate using your diagram from part (i), by showing how optimal choices change when income changes. (10 marks).

Radford didn't expect relative prices to change, as all quantities had been reduced by the same amount. However the change in the demand for chocolate was greater than the change in income, because chocolate is a luxury. People continued to demand bread, but did not necessarily demand any chocolate. 5 marks for defining a luxury good and drawing a diagram illustrating a situation where the % change in quantity of chocolate demanded was greater than % change in income. 5 marks for defining an essential good (quantity demanded is always greater than zero or whatever lecture notes say) and drawing a diagram where reduction in income still leads to positive quantities of bread being demanded.

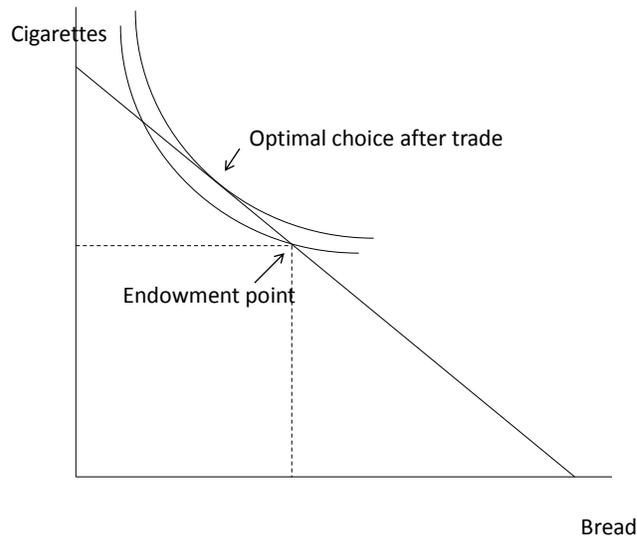


- k. Now try to put your analysis in part (j) in supply and demand terms. What happened to the supply of chocolate and of bread towards the end of the war? Show by drawing supply curves for bread and chocolate (5 marks). *Loss of 0.5 for not drawing perfectly inelastic supply curves (no matter how high the price, they can't get more chocolate); -1 or so for not showing both goods; -2 for not showing supply curve shifting.*
- l. According to Radford, how did the August 1944 cuts actually affect the relative prices of bread and chocolate? Explain why prices changed the way they did by showing, on your diagram from part (k), what happened to the bread demand curve and the chocolate demand curve. Use the ideas in part (j). (5 marks). *Two components, what Radford expected and discussion(2.5) and what happened to the demand curves. Have to show shifts in the demand curves (2.5 marks). Check against part (j) answer to make sure that the quantity demanded at a given price is shifting the way that you say it's going to in part (j).*



- m. Read the section Limits on Trade. Why did the prisoners try to prevent people from trading away bread? Use an indifference curve budget constraint analysis to show that, in the simple framework of this course, preventing people from trading away their bread makes them worse off (5 marks).

People were prevented from trading bread because if they did so, they could end up starving, especially if they traded bread for cigarettes. This is problematic for the person concerned. Also, all of the other prisoners would be morally obliged to share food with the starving prisoner, and this would impose hardship on the other prisoners. But in the framework used in this course, people's optimal choice is always what gives them the highest level of utility, and we judge that to be the best for them. This was generally well done.



- n. (Thinking ahead question) How might you want to expand the simple framework of this course so that it can explain why, for example, it might be a good idea to prevent people from trading away bread? What's missing from our models? (5 marks) *Mark pretty generously. For a variant on 'these models are stupid' give 2.5 to 3 out of 5. For anything that hints at a suggestion on ways to improve the model: 4 to 5 out of 5.*
Suggestions for improvements: Bounded rationality. Preferences over preferences. Externalities.
2. Perfect substitutes. We've had several examples of perfect substitutes so far this term – Amanda's timbits and doughnuts, Anna's Roosters and Tim Horton's coffee.
- Think of two goods that you consider perfect substitutes. Give examples of some equally preferred consumption bundles (e.g. (0 doughnuts, 6 timbits) and (1 doughnut, 0 timbits)). Explain why these goods are perfect substitutes as far as you're concerned. (5 marks: marks will be given for originality).
 - What is your marginal rate of substitution between the two goods? Explain (5 marks).
 - You can write down a utility function for two goods that are perfect substitutes using the formula:
 $U(x_1, x_2) = (MRS)x_1 + x_2$ where MRS = the marginal rate of substitution.
 Write down your utility function. Plot some of your indifference curves. Verify that your utility function works using your equally preferred consumption bundles from part (a) (10 marks).