

The Story of a Village: Constructing an Economic Theory

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Conventional practice in most educational institutions assumes that students acquire *basic knowledge* by *listening* to lectures and *reading* books/articles, and that novices become experts by

- a. understanding the “knowledge” and strategies/techniques of the experts; and
- b. mastering the abilities to apply them; and only then,
- c. proceeding to think and inquire on their own.

In this mode, teachers act as brokers mediating between researchers (producers) and students (passive uncritical consumers).

An alternative worth trying is that of Inquiry-Oriented Education that employs Inquiry-Based Pedagogy, which takes the position that students acquire *basic knowledge* by participating in *collective inquiry* (“*simulated*” *research*). This involves constructing/ discovering knowledge, practicing discipline-specific methodological strategies of generating knowledge, and critically evaluating knowledge claims. It also assumes that novices become experts by

- d. engaging in individual and collective inquiry and critical thinking at the levels of observation, observational generalization, theory, and interpretation; through this,
- e. constructing (a nucleus of) an approximation of the knowledge and techniques of the experts; thereby
- f. developing the capacity for independent inquiry and critical thinking; and only then
- g. being exposed to the knowledge and strategies/techniques of the experts.

In (a)-(c), the teacher tells the students about the law of supply and demand and guides them through a set of situations in which the law can be applied. In (d)-(g), students who have not been exposed to textbooks or lectures in economics think carefully about **examples** of economic **phenomena**, and collectively construct an approximation of the law of supply and demand. The following material for theory construction in economics is embedded in the latter approach.

This material is written as a story, woven around the ‘economic’ activities of a village. After each segment of the story, the teacher asks questions, calls attention to phenomena that demand an explanation, and gets the students to collaboratively construct a general theory that explains not only what is described in the story but also the “data” drawn from their own information, knowledge, or experience. Such collaborative theory-construction involves both the imagination to come up with a theory and the critical thinking that evaluates and modifies what the imagination creates.

The situations described in this write up make no reference to **money**. If economics is defined as a *science that explains the exchange of goods and services mediated through money*, then the subject matter of inquiry in these tasks does not constitute economics. However, if economics is defined as *a science that explains the exchange of goods and services in human behaviour*, whether or not money is involved, it does constitute economics. Under the first definition, economics does not cover barter, but under the second, it does.

Consider the behaviour of two classmates. One of them *spends* hours in a library, but refuses to watch television for more than half an hour a week on the grounds that (s)he cannot *afford* to spend time on entertainment. The other watches television for two or three hours a week but refuses to spend time in the library on the grounds that (s)he cannot afford to spend the time on what is unnecessary for exams. If economics is the science of money, it has nothing to say about these students, but if economics is the

science of human behaviour under limited resources (where time is a precious resource), then an explanation for the difference in their behaviour comes under economics.

Adam Smith's *An Inquiry into the Nature and Causes of the Wealth of Nations* (1776) is acknowledged to be the starting point of the study of economics. In "Introduction and plan of the work" Smith says:

"The annual labour of every nation is the fund which originally supplies it with all the necessaries and conveniences of life which it annually consumes, and which consist always either in the immediate produce of that labour, or in what is purchased with that produce from other nations.

Accordingly, therefore, as this produce, or what is purchased with it, bears a greater or smaller proportion to the number of those who are to consume it, the nation will be better or worse supplied with all the necessaries and conveniences for which it has occasion.

But this proportion must in every nation be regulated by two different circumstances: first, by the skill, dexterity, and judgment with which its labour is generally applied; and, secondly, by the proportion between the number of those who are employed in useful labour, and that of those who are not so employed. Whatever be the soil, climate, or extent of territory of any particular nation, the abundance or scantiness of its annual supply must, in that particular situation, depend upon those two circumstances.

The abundance or scantiness of this supply, too, seems to depend more upon the former of those two circumstances than upon the latter. Among the savage nations of hunters and fishers, every individual who is able to work is more or less employed in useful labour, and endeavours to provide, as well as he can, the necessaries and conveniences of life, for himself, and such of his family or tribe as are either too old, or too young, or too infirm, to go a-hunting and fishing. Such nations, however, are so miserably poor, that, from mere want, they are frequently reduced, or at least think themselves reduced, to the necessity sometimes of directly destroying, and sometimes of abandoning their infants, their old people, and those afflicted with lingering diseases, to perish with hunger, or to be devoured by wild beasts. Among civilized and thriving nations, on the contrary, though a great number of people do not labour at all, many of whom consume the produce of ten times, frequently of a hundred times, more labour than the greater part of those who work; yet the produce of the whole labour of the society is so great, that all are often abundantly supplied; and a workman, even of the lowest and poorest order, if he is frugal and industrious, may enjoy a greater share of the necessaries and conveniences of life than it is possible for any savage to acquire.

It is clear that Smith equated 'wealth of the nations' with the amount of money that a nation has. Given that definition, a self-sufficient nation with enough food free of pesticides, clean air, free and clean water, free high quality education, but very low GDP is a poor and 'savage' nation, but a nation in which a significant percentage of people starve, most food has pesticides, air and water are polluted, water needs to be bought, expensive poor quality education, but has high GDP is a wealthy and 'civilized' nation.

As you can see, the tasks in this write-up are designed to help students think about a conception of economics that is different from the above view. A theory of barter is probably a good step towards a view of economics that treats the 'wealth' of nations not GDP, but as the 'well-being' of its peoples (and other creatures), which might be thought of as Buddhist economics () as an alternative to business economics. 'Well-being' may not be susceptible to numerical quantification, but then physical pain (an important part of the medical science) is not susceptible to numerical quantification either, so absence of numbers should not prevent the growth of science in a domain.

This is a first draft. The questions that trigger inquiry activities are given in boxes in each section. Sections I - II are fleshed out in the form of a story form. The remaining sections contain only the pedagogical skeleton; the narrative elements need to be filled in such that they form parts of an interesting story that students would enjoy reading.

I am not an economist. In fact I know very little about economics. I have written this material nevertheless with the hope that one or more experts in economics, convinced by the desirability and feasibility of inquiry-based pedagogy, would agree to become collaborators in this venture, so that the second version of this draft would be produced by a team of people rather than by a single individual.

I

Long long ago, long before motor cars and computers and movies and even twitters, long before the concept of money was invented, there was a village called Omsville with many inhabitants, who lived happily — though not for ever after. We should warn you, this is a story of unhappily ever after. So if you don't like unhappily ever after stories, don't read this one.

But then, you have probably never read an unhappily-ever-after story before, so even if you think you don't like unhappily-ever-after stories, that might just be a preconception. Who knows, you might actually like this particular story. So read on anyway.

One condition though. If we ask you a question, scribble it down on a piece of paper before you proceed, along with your answer if you have one.

So, where were we? Oh, yes. Long long ago, long before motor cars and computers and movies and even twitters, long before the concept of money was invented, there was a village called Omsville with many inhabitants, who lived happily. In this village, people used to exchange what they could spare for what they needed. Thus, if you were an Omsville carpenter, and you made more chairs than you needed but didn't have any eggs, and your neighbour had more eggs than she needed but didn't have chairs, you could get eggs from your neighbour in exchange for chairs.

What did you say? Oh, of course I know this is called the barter system. Who do you think I am, an idiot? A university professor? Yes, this was a barter system. Now....

II

There was a carpenter called Hera in Omsville, who used to make wonderful five-legged chairs. One day, poultry farmer Zeno, Hera's neighbour, came to her with a request for two chairs. Two of the chairs he had were very old, and he was afraid that when his parents-in-law came to visit — a visit was impending, and they were both fairly heavy — the chairs would break. Hera gave two of the chairs she had made to her neighbour Zeno, and received forty eggs in return.

You have learnt basic arithmetic in school, haven't you? If you want to know the rest of the story, tell me:

How much did a chair cost? How much did an egg cost?

Don't read this story if you are not going to do this simple calculation for me. If you haven't learnt your addition, subtraction, multiplication, and division, it is not worth my while telling you this wonderful story.

You've done it already? Excellent. Okay, here is what happened next. When Apollo the baker saw Zeno leaving with the chairs, he remembered that he desperately needed more eggs to bake the cakes for the village chief's birthday celebrations. Apollo gave five loaves of bread to Zeno and received twenty eggs in return.

How much did a cake cost? How much did an egg cost?

III

Hera needed fifteen cakes. She wasn't sure how many chairs she should offer Apollo in exchange, so she consulted Zeno. She was happy with Zeno's reasoning and advice, and so was Apollo.

What do you think was the exchange scheme that Zeno suggested?

IV

Since different people in Omsville needed different things, and had different things to spare (chairs, eggs, cakes, sheep, clothes, oil, rice, vegetables, shoes, ...) they found it extremely difficult to keep track of the exchanges and decide on a fair quantity of something one could exchange for a given quantity of something else. Nowadays we use money, but remember these were times before money was invented.

Suggest a solution that does not involve money.

Construct a general theory for the exchange of goods on the basis of which you can predict what people would have given for the goods they wanted. Then expand the notion of goods to include services as well, (e.g., teaching, housework, sex services, carpentry, building, farming, healing, astrology, ...). [Take a look at the appendix at the end of this story to find out what a 'theory' contains and what it does.]

Under what conditions do you think people in this system would have judged something to be 'too expensive', 'a good price', and 'incredibly cheap'?

V

Athena, Zeno's neighbour, started raising hens and selling eggs. For a chair, she offered Hera twenty-five eggs, and five eggs for a cake to Apollo.

What do you think was the effect of Athena's enterprise on the overall exchange activities of the village?

VI

Hercules, the rice grower, had sixteen children to feed, clothe, and raise. His family was finding it difficult to survive, so he doubled the 'price' for rice.

What do you think happened? Would he have gotten more things or less?

VII

Following Hercules, Apollo doubled the price of his cakes. However, he was surprised to find a significant drop in the demand for cakes, and had to restore his earlier price.

Why do you think this was the case? Why were the consequences of Apollo's price hike different from those of Hercules'? Modify your theory in IV (if you need to) in the light of your reasons.

VIII

Over the next few years, the number of weddings in Omsville tripled. Each wedding needed a huge number of cakes. Apollo saw an opportunity in this, and again raised the price of his cakes. Luckily for him, there was no drop in demand.

Modify your theory (if necessary) to account for all the phenomena in I -VIII. Your theory should include the concept of price in VI-VIII even though money didn't exist at that time.

IX

A neighbouring village, Zigoto, now wanted to initiate an exchange of goods and services with Omsville. The two village chieftains met, and drew up an agreement on the exchanges to be conducted to the satisfaction of everyone. The recommended prices were designed to make sure that no one suffered any loss.

What do you think were the main propositions in their agreement?

X

Many people were unhappy about the decisions of the village chieftains. Some secretly sold at prices lower than the recommended ones to increase their profit. Others openly sold at prices higher than the recommended ones. Yet others couldn't afford to raise their prices though they would have liked to, because then no one would buy from them.

Who do you think were these three kinds of people? Why do you think some could afford to raise the prices while others couldn't? Why did some lower their prices?

XI

In a few years, the chieftains of Omsville and Zigoto made a discovery. They could hire thrill-seeking young men at a low cost, give them shining uniforms and weapons, and train them to fight and kill. With the help of such an army, a chieftain could now afford to imprison or kill anyone who disobeyed him.

The chieftains felt good about their new-found power, and managed to convince the people that the army was meant to protect the villages, and that the villagers must pay two sheep a year to maintain the army. Most people willingly gave their goats to the chieftains; those who either couldn't, or refused to, were killed.

The chieftains now decided to enforce the prices they had recommended earlier.

What do you think were the chances of stealthy private exchanges in these villages? Revise your theory to incorporate your answers in X and XI.

If you wanted a fair and efficient system, which would you recommend, one in which the chieftains enforced their recommended prices, or one in which each individual decided on his/her price? Or some combination? State your reasons, and build them into your theory.

XII

Aphrodite was a gifted sculptor, but remained poor, because the people in Omsville and Zigoto didn't care about sculpture. One day, she had a bright idea. She carved half a dozen double-headed serpents out of wood, put them on double helix stands, and painted them black and gold. She then gave them to six of her closest friends as presents, requesting that they set up the double helix serpents in their front yard. She also suggested that each of them tell people a little harmless fib — that Aphrodite made only a limited number of serpents, only for the elite, and that they had paid ten sheep each for a serpent.

The following month, Aphrodite sold three serpents, each for eight sheep (her customers were pleased with the two-sheep discount); the month after, she sold five; and the next month, a dozen. Since she could not cope with the demand, she doubled her price; that brought more buyers, many from nearby villages. She started hiring help for sculpting, though she did the final touches herself. The demand kept increasing; and Aphrodite lived in luxury, her future assured beyond dreams.

XIII

Inspired by Aphrodite's success, her friend Hermione the seamstress started making two categories of clothing, one the usual inexpensive clothing for ordinary people, and the other exclusive, four times as expensive, designed for the rich and the young. She managed to persuade the prettiest daughters of the richest parents to wear her first designs to parties, and to slip into conversations casual remarks about the dresses. Soon, the rich and the young were begging Hermione to design special clothes for them, and in no time, the desire for these clothes spread among all the rich, young and old alike. And then something interesting happened, surprising even Hermione. Even those who couldn't really afford Hermione's prices started cutting corners in even their food and medicine to gather enough resources to acquire an exclusive dress.

Modify your theory to account for the phenomenon illustrated in XII and XIII. How typical do you think is this phenomenon? Do you see this around you in your everyday life?

How much of the theory you have constructed for the explanation of the exchange of goods and services do you think are rooted in the general aspects of human behaviour, human mind, and human society? Construct a general theory of humanity such that the theory of the exchange of goods and services is one of the components of the more general theory.

APPENDIX: STRUCTURE AND FUNCTION OF THEORIES

Constructing and evaluating theories to account for patterns of human behaviour calls for an understanding of the concept of *theory*. Theories are found in mathematics (e.g., number theory, set theory, graph theory), science (e.g., Newton's theory of gravity and motion, Big Bang theory, theory of evolution), philosophy (e.g., theories of knowledge, of morality, of mind), literary studies (e.g., Aristotle's theory of tragedy, gender theory), and so on. They differ in their *function*, what they are designed to accomplish. But all theories have the same logical *structure*: in terms of their components, a theory is *a set of interconnected concepts and statements from which we can derive a set of new statements as their logical consequence*.

Here is an example that illustrates the logical structure of theories.

Statement 1: Q decreases as P increases.

Statement 2: Q increases as R increases.

Statement 3: P is the total number of flins, divided by the number of garps.

Statement 4: R is the average size of a unit.

Statement 5. Q is the average quantity of bronti in a unit.

We don't know what this theory is about, but we can still see its logical structure. From the combination of (1), (3), and (5), we can deduce that the average quantity of bronti in a unit decreases with the increase of the total number of flins divided by the number of garps. And from the combination of (2), (4), and (5), we can deduce that the average quantity of bronti in a unit increases with the increase of the average size of a unit. What happens when both P and R increase? We might need to formulate the theory in quantitative terms to answer that question.

As we said, theories differ in their function. Scientific theories seek to understand the nature of the world around us by constructing general explanations for the phenomena we observe. In contrast, mathematical theories seek to understand the nature of logically possible worlds by constructing mathematical objects and operations governed by a set of axioms, and deriving their logical consequences. Instrumental theories (e.g., a theory of teaching, a theory of business management) act as guides to effective and efficient action; normative theories (moral theories, educational theories) act as guides to the choice of our goals in our

action; and conceptual theories (e.g., theories of knowledge, theories of truth) provide an understanding of human concepts. In our investigation of the economic activities of Omsville, we are interested in constructing a scientific theory.

As we just said, scientific theories seek to understand the world by proposing explanations for what we observe. To understand this function of scientific theories, consider the following scenario:

The different communities in Omsville exhibit different dietary prohibitions. There are those who:

eat vegetables, grains and roots,	but not eggs, fish, poultry, and beef;
eat vegetables, grains, roots, and eggs,	but not fish, poultry, or beef; and
eat vegetables, grains, roots, eggs and poultry,	but not beef.

There are also communities that have no dietary prohibitions: they eat grains, roots, eggs, poultry, and beef. Interestingly, there no Omsvillean communities who:

eat beef,	but not eggs, fish, or poultry;
eat poultry,	but not eggs or fish; or
eat fish,	but not eggs.

These norms of eating are not governed by their taste buds: many like the taste of eggs or fish or beef, yet refuse to eat it. Nor are they motivated by health reasons.

What statements in a theory of human behaviour would correctly predict (and thereby explain) these patterns? Here is a possible candidate:

Statement 1: Human communities tend to have moral commitments that prohibit *actions that destroy the life of a living creature* that is biologically close to the human species.

Statement 2: Closeness to the human species is defined by a boundary that is set at some point along the following hierarchy:

Human > mammals > birds > fish > eggs (potential life).

These two statements correctly predict the patterns observed among Omsvillean (and other) communities. For instance, consider a community that sets the boundary between birds and fish. Such a boundary would allow them to eat fish and eggs, but not chicken or beef. If the boundary is set between mammals and birds, it would allow eating chicken, fish, and eggs, but not beef. There is no way to set the boundary in such a way that the codes of a community sanction, say, the eating of beef but not fish.