

## Global Games and "Globalization"

Globalization or "Mondialisation" (in French) is a topic that is very much of general interest and concern nowadays and this is very natural because of the much expanded level of international trade, involving exports and imports, in the world of today.

I am not myself personally an expert on the economics of international trade nor on the fine structure of the international politics and diplomacy that has naturally accompanied various steps taken in recent times to arrange for ideas like the GATT or the WTO that have been concerned with facilitating this trade and regulating some of the circumstances that affect the conditions of this trade. I have, however, like any person reading a lot of news reports, heard of the recent failure of the "Doha Round" which would have to some degree restructured the WTO. And to me such a "failure" seems quite analogous to the recent occasion when a proposed modification of the constitution of the European Union failed to obtain approval.

My personal area of recognized qualification is that of the applications of Game Theory to situations or contexts of an economic character, which may involve "bargaining" or the areas of competitive (or non-cooperative) and cooperative games.

And by coincidence the one course in Economics that I took as a college student was called "International Economics" and it was taught by a distinguished professor who happened to have come from Austria (the country famous for "Austrian" economists).

## Global Games of Present Day Concern

The scope for the interaction of Game Theory with issues of great concern for the people of the world can be illustrated by two other areas besides that of international trade. One of these is the area concerned with actions that might be taken to prevent or to control "global warming". Here, in a simplest abbreviation, the idea is that certain gases that are naturally released into the Earth's atmosphere consequential to human activities which consume fuel or wood or coal have the effect, through a mechanism involving the interference with infra-red radiation that would otherwise pass from the Earth out into

space, of increasing the amount of thermal energy captured in the Earth's atmosphere. And this thermal energy in the atmosphere would lead ultimately to higher observed surface temperatures.

Whether or not the scientific understanding of the cause and effect mechanisms is perfected here, the situation can be observed to involve a lot of "game structure", if anything practical is to be done by the human populations in the various countries of the world. Some areas seem to have more to fear, comparatively, from the projected warming, and different areas would experience different levels of costs to take actions that would be of benefit globally.

For example, Russia and Canada, simply by themselves, would seem to have little to fear, for a long time, and on the other hand it could be a big problem for them merely to reduce their usage of fuels used for the heating of buildings. Whatever good would be done by any one country would benefit the whole world, to the extent of the global magnitude of the warming problem, but the costs of the action (if a world state is not in effect!) might need to be borne simply by that country itself.

If global philanthropy were really TOTALLY easy to organize then we should already have the populations of all separate countries living at the same real level of average personal income!

And in another area there is the global challenge of generally appreciated good value of whatever can be done to minimize the widespread distribution of powerful "nuclear" weapons or of the basic ingredients for their manufacture or construction. The retiring Secretary General of the United Nations, Kofi Annan, spoke emphatically on this topical theme shortly before the end of his term.

But the problem poses a difficult game for which to seek to find a cooperative solution, with all of the nation-states of the world as Players. It is quite natural for relatively large states without enough of convenient "atomic power" allies to feel that they should not let themselves be "bullied" by the states already having recognized "atomic power" status and to seek for themselves more advanced levels of nuclear technology and partially consequential to this also the recognizable capability of actually using (if only by testing them) some examples of atomic bombs themselves.

Some relatively more fair and more just and non-discriminatory way of limiting and controlling the widespread distribution of atomic weapons and of the resources to make them quickly MIGHT be achievable by means of a new and re-negotiated treaty for the control of the

dangerous proliferation.

(And of course, on the level of Sci-Fi, or Science Fiction, Mankind will presumably need to proliferate into "interstellar space" and then it COULD happen that an occasional whole planet would get killed off in the wars but that Mankind would continue to move onwards and outwards.)

## Difficulties of International Cooperation

We feel that the illustrations of the difficulties of achieving really effective international cooperation either to deal with "global warming" or "nuclear weapons proliferation" illustrate the sources of problems that can also arise when it is desired to achieve the theoretically possible economic benefits of global cooperation through international trade exchanging goods produced where they are most efficiently produced and consumed where they are obtained via trade exchanging them for other goods.

A state which would be counseled, for example, by some economic advisers, to produce only agricultural products and to exchange these on favorable terms with the products of other states might naturally or typically wish to have a wider variety of useful products and some national self-sufficiency in products.

This was the historical context of the situation of the USA in the middle of the 19th century. In the southern states with plantations and the cheap labor of slaves there was a great popularity of free trade with Europe and in particular it was quite profitable to export cotton to Europe.

But in the northeastern states with more industrial development and interests and no slaves the trade preferences were the opposite, and high tariffs on imported European manufactures, notably including woven cotton fabric or clothing made from that, were favored.

Ultimately, for various reasons, there came the "Civil War", the North won the war, and legal slavery ended. And a quite interesting economic commentary on the times is found in the letters exchanged between Marx and Engels (two great historical founders of Marxism and Communism) who were at that time both resident in England). Here a curious observable is that Marx seemed to have more of an economic understanding of the concept that the North must inevitably win while Engels felt that brilliant military generalship on the side of the

South might likely achieve a victory.

## Efforts for Achieving a Favorably Differentiated National Economy

The history of times not less recent than the 20th century shows many examples of how national states have sought to employ state-sponsored programs that would favor the development of the national economy and the national productive capacity in directions that the planners consider to be favorable. This is quite evident, notably, in the case of South Korea although that state is not of the category of "socialist states" where this sort of state planning is always to be expected.

The thinking behind such nationalistic efforts (which do not wait for a trade equilibrium to arise that assigns different forms of labor to different places and peoples according to where and by whom the labor can be most efficiently performed) can be compared with a special sort of Christian thinking. This variety of Christian thinking has been influenced by the concept of the Gibeonites as related in an early passage in the Old Testament. The Gibeonites, described as having sought on a false basis to gain the status of allies of the Israelites, became condemned to labor on an inferior level and to be "hewers of wood and carriers of water".

So this became a model, to Bible-oriented Christians, of the sort of destiny to be avoided. Thus everyone should wisely strive to find a more desirable career, or mode of personal employment. (And of course this sort of thinking also has relations to the ideas developed in sociological studies of "The Protestant Ethic".)

And actually, although many of the states of the world today present themselves as favoring the maximum of trade liberalization, it is difficult to find any large state which has been completely without any sort of nationalistic development scheme.

## Economic Theory and Globalization

Of course, really, the economic theory relevant to international trade goes back to Adam Smith (who wrote "The Wealth of Nations") and another British economist (Ricardo) is credited with introducing the

important "comparative advantage" concept. (Adam Smith had definitely used the simpler "absolute advantage" concept in relation to which goods should be exported and which imported.)

A very good basic reference text for the economic theory is the book dating from 1980 in the Cambridge Economic Handbooks series by Dixit, A. K. and Norman, V. entitled "Theory of International Trade". This is a good source, in particular, for the basic theory of how the exchange through trade of products which can be produced in various countries at various levels of efficiency naturally tends to improve objectively measured total general economic welfare.

And furthermore Dixit and Norman also introduce a chapter that studies the important topic of "increasing returns" (which can sometimes complicate the theoretical appraisal of the comparative benefits of alternative trade policies).

An interesting recent paper that looks at international trade by studying a specific model with two countries and two labor classes in each of them is the paper by Kremer and Maskin called "Globalization and Inequality". Their model shows clearly how a liberalization of restraints on international trade COULD lead to an increase of wealth differentials separating classes.

## Bargaining Theory and Trade

In principle, the problems confronting any nation-state which seeks to obtain favorable "terms of trade" are bargaining problems comparable to the problems or challenges confronting persons who wish to buy or sell in a traditional bazaar or perhaps in a market for fine rugs. And there is some "game theory" that has been developed to apply to this area of concerns.

The book "Bargaining Theory With Applications", by Abhinay Muthoo, provides a good lead into the area of bargaining theory. (Prof. Muthoo and I were once in the position of being expert witnesses for a lawsuit issue in Florida, in the USA, when the case depended on a claim about justice according to bargaining theory!) But in fact, in the present state of Game Theory, the area of MULTILATERAL bargaining continues to be a "wide open" area for theoretical research, while the area of two-sided bargaining is simpler and better understood and has connections going back to the paper of Nash (published in Econometrica around 1950) which

was entitled simply "The Bargaining Problem".

An article by Amartya Sen in 2002 in "The American Prospect" entitled "How to Judge Globalism" explicitly referred to the early Nash paper on bargaining. And Prof. Sen was also wishing to emphasize, with concern for areas or classes of humanity that can have quite different average economic prosperity levels, the theme of "fairness" in the trade agreements that might be developed and be affecting those circumstances of prosperity (or poverty). But indeed, Game Theory itself most typically does not address issues of fairness or compassion or philanthropy, rather, it is concerned with strategy, and going back more than a millennium in India, it would apply to how the Rajah should play and win a game of Chaturanga! (Or equivalently a game of Go.)

But the Nash theory of bargaining games for two players can, at least, give a guide for whether or not each party is well represented by his attorney or by his "bargaining agent" if they are so represented. So, in principle, there is the possibility that game-theoretically sophisticated economists, like A. K. Dixit, Eric Maskin, or Abhinay Muthoo, can ascertain and advise a nation-state on the issue of whether or not, for example, a prospective big free trade zone deal is actually (presumably) favorable to the national interests of that state.

But also, particularly with regard to complex game-like situations where several parties seek to reach an agreement favorable to all of them, there is no real substitute for good "practical wisdom" or "common sense" on the part of the parties involved, especially if these are as large as nation-states and if the situation is correspondingly complex. The political leaders of the states need THEMSELVES to have some good understanding of whatever is at issue and they cannot well simply take advice!

## Free Trade Agreements and Coalitions in Games

The extremely influential book of Von Neumann and Morgenstern called "The Theory of Games and Economic Behavior" appeared first in 1944 (thus before the end of World War II) and this book can be credited with the introduction of the whole field of studies interlinking economic concerns and the theory of games.

And VN&M made a very strong use of the concept of "coalitions"

as a basis for the theory of all game theoretic studies involving more than two players. The idea of coalitions is very appropriate, generally, for international relations among states that are not simply at war.

Relating to international trade, there are "free trade areas" or "economic union" areas or also currency union areas which provide good illustrations of the formation of coalitions, from the game theorist's viewpoint. Of course the European Economic Community or EEC is a good example of this which has by now acquired much history from its years of existence. The EEC has the effect of making Western Europe partially comparable to the United States in terms of the economics of the production and consumption of goods. And also, the EEC becomes effectively a big bargaining unit in relation to negotiations on trade between Europe and other areas of the world.

In relation to the EEC one of the hot issues currently is whether or not Turkey will be admitted to membership in this club. And of course if any economic union of states would expand so as to include ALL states then it would become just a transformed WTO-like entity and would cease to have a club-like character.

## Mexico as an Example

Mexico is one of the favorite examples of a nation-state to be considered from the viewpoints of economic theories concerned with international trade. The NAFTA trade agreement, in effect since 1994, forms a trade club whose members are Canada, Mexico, and the USA. And very recently, with very much controversy, an effective extension of this trade alliance area to all of North America except Panama and Belize has been realized through legislation that was only barely passed in the Congress (or legislative government body) of the USA.

There is much talk of an ultimate expansion which would bring all of the Western Hemisphere into a trade zone or club expanded from NAFTA. (But about this I wonder, since the advantages of membership in a club, for the members, typically depend upon the existence of non-members of the club and it is not obvious that simply the Western Hemisphere (possibly without Greenland and Iceland) would form the best grouping to define favorably the membership of a club. For example, with another grouping, the European states of Spain and Portugal might be natural members.)

Concerning Mexico in the times of NAFTA, some observing economic experts have found that the more prosperous classes in Mexico seem to have benefited more than the less prosperous classes. But there is the possibility that the general recent trend of increasing income disparity of the economic classes may be the cause rather than that NAFTA itself has been disadvantageous to the poorer classes in Mexico. The fundamental problem may be simply that technology and general conditions of work (by human workers) are evolving so that there is simply a huge disparity simply in the VALUE of the work performed by different varieties of workers. So the "living wealth" of the various workers could be equalized through taxes and welfare while it might be quite hopeless to try to equalize the differing values of the work of different types of workers.

Illustrating the labor value issues, in older times an actor would be someone who performed in a play in a playhouse, perhaps, and who would thus serve to entertain only those persons physically present in the playhouse. But nowadays an actor is someone who works in Hollywood (or Bollywood) or who appears in a TV show and who thus can entertain millions or even billions of human spectators with one performance. (And this depends, quite essentially, on the TECHNOLOGY behind the movies and the TV systems.)

I personally have had a connection with enterprises in Mexico since I happen for several years to have had an investment in MXF, the "Mexico Fund". That investment seemed, for quite a while after I first was in it, to be as sleepy as an imaginable rural village in Mexico, a place for siesta napping. But in the most recent times MXF has seemed to awaken and they have reported nice gains in their net value. So I am inferring from this that NAFTA has indeed been beneficial for Mexican enterprises, in an overall sense.

## India and Regional Associations

Concerning what sort of trade agreements might be of potential benefit to India in particular, it occurs to me to raise the issue of possible geographically local alliances. This sort of a trade alliance could be directly analogous to the EEC or to NAFTA.

Notwithstanding the great cultural differences, a grouping that would initially include India, Indonesia, Malaysia, Bangladesh, Sri Lanka, and Thailand could be suggested. Right now these states might



all seem to have more trade with geographically distant states than trade among themselves, but these circumstances can change as economic conditions evolve.

There is a natural parallel of the "South Asia" region of the globe with the region of the existing "Mercosur" alliance in the South America part of the Western Hemisphere. Mercosur is potentially a natural alternative, for many states of the Western Hemisphere, to the club of NAFTA-CAFTA.

So I wonder about the possible values of a grouping for South Asia which, besides having values in relation to local trade within South Asia, could also enhance the position of its members in relation to the global negotiations associated with the WTO.