

Decision Making In International Relations Using A Computer-Based Model

By

Okoroafor O. Nzeh

Associate Professor and Chair Department of Business Administration
Paine College, Augusta GA – USA [onzeh@paine.edu]

Abstract

This work was designed to construct and evaluate decision making in International Relations by using a computer-base model. Translating decision making in International Relations into computer-base model demands that the knowledge base be: Explicit and Unambiguously specified. The use of computer-base model will allow one to observe decision process in action and allow one to be capable and to predict a real world event. Scholars from different disciplines will see the need for more inter-disciplinary work and the value of cross-fertilization. Guidance by the decision makers with certain navigational tools in their decision making process demands the use technology in order to navigate all the tools needed.

1. Introduction:

This research work was carried out to expose students to the crucial importance and nature of conducting business given the dynamic nature of the world International system. The work is to replicate real-world phenomena in a teaching environment. While this is not the case for our colleagues in hard sciences, the research is faced with an area of study that is not governed by the laws of physics and other more predictable relationships. As a result of this, a computer based decision modeling in international relations was employed in a computer-based system to study and replicate social phenomena.

The idea was born out of a scholarship for a two-week residency for the “The Governor’s Teaching Fellows Program” in the state of Georgia. At the end of that conference came the idea to develop a computer-base decision modeling that will help in teaching students for a course in international business. Through this effort, students can understand how this complex task of conducting business in the dynamic world system are being influenced by its environment and how decision can be made using a computer-based decision modeling system to replicate a real world situation.

The work was centered on developing a computer-base decision model using Visual System Environment (VSE) so as to verify Inter-national behaviors and decision making processes using economic variables as the main underlying phenomena crucial to this interaction process. International exposure is a major thrust in teaching International Business program. The lack of this exposure calls for an immediate integration of curriculum with the real world problem. Through this research, students will be to see how real world problem is expressed using computer system.

While the national security and political stability dominated relations among nations during the Cold War Era, the 1990s is spearheaded and driven by:

- Economic power pursuit witnessed by the eventual collapse and death of the Soviet Union economic system
- Internationalization of capital

During the 1990s Major determinants of International Relations are strongly economic and macro in nature and are capable of exerting their influence over a long period of time in the 21st century. In addition, problems rise from a complex set of economic and political relationships and these problems would remain until we gain a better understanding of these relationships.

As Eric Hobsbawm (1990) stated,

“As the world is integrated in one way by globalization, it is increasingly divided in another way into a permanently inferior majority of states and a privileged and self-satisfied minority of states.”

This shift has enormous political implications. It means that the traditional idea of national solidarity and purpose can no longer be defined in purely economic terms.

Further, Robert Reich (1992) pointed out,

“We are living through a transformation that will rearrange the politics and economies of the coming century. There will be no national products, no national corporations, no national industries. There will no longer be national economies as we understand them. All that will remain within national boundaries are people. Each nation’s main political goal will be to cope with the forces of the global economy which bestow greater wealth on the skilled and insightful and consign the less skilled to a declining standard of living.”

As Reich argues above, those citizens best positioned to thrive in the world market are tempted to slip the bonds of national allegiance, and by so doing disengage themselves from their less favored fellows. The era for the economic power to dominate and influence national leaders in decision making at the international arena has come. An understanding of how this dynamic world system is being shaped by economic factors is imperative at this moment.

2. Methodology:

A computer-base decision model using Visual Programming Environment (VPE) is to be used to verify the Inter-national behaviors and decision making processes using economic variables as the main underlying phenomena crucial to this interaction process. The model will specify how a national decision making unit attempts to maximize its goals in a changing the world system and how this larger complex World system changes in response to the behavior of the national decision-making units. Influence of international system to the national system is guided by two important factors:

- Stability of National Economic System
- Stability of National Political System

Thus, a computer-base model will specify how a national decision making unit attempts to maximize its goals in a changing world system and how this larger complex world system changes in response to the behavior of the national decision-making units. The description of how economic aspects of inter- and intra-national phenomena explains relationships among nations and how these association are interpreted when the burden of this complex world decision-making process is shifted from human to **Computer Decision-Making In International Business-Relations** (CODMIBR) is at the hear of this study.

In this project, International Business-Relations is defined as the “interactions of governments and people through economics, involving public organizations, corporations, individual, and other non-governmental actors.

There are diverse beneficiaries of this research but it is not limited to: Scholars Who Favor Scientific Approach to the study of International Business-Relations, Governmental and Non-Governmental Organizations, CIA, UN, Center for International Studies /International Business at Paine College Department of Business Administration

A thorough understanding of how each of the competing national apparatus views the international system is fundamental and is a major factor as to how the knowledge-base. Data will be determined. Similarly, method of interaction may be bilateral or multilateral, certain economic conditions in the form of trade relation such as: import, export, and Foreign Exchange holds promise in evaluating actions between competing nation states.

Viotti and Kauppi (1987) defined international relations as the “The total of Political, Social, Economic, Cultural, and other interactions among states (and even non-state) actors.” Further in her work Jones (1997) defined international relations as “The principal interactions of governments and people through Economics, involving public organizations, Corporations, individuals, and other non-governmental actors.”

An understanding of some other fields that contributes to this study is very important because of the interdisciplinary nature of the work. Such fields as international business, globalization and game theory play an important role in this undertaking. International business should be seen in this work as a transaction that takes place across national borders where as globalization is defined as a shift towards a more integrated and interdependence world economy. Game theory is viewed as a decision-making approach based on the assumption of actor rationality in a situation of competition. Here each actor tries to maximize gains or minimize losses under conditions of uncertainty or incomplete information. This can be referred as a zero-sum game, when one actor win another loses.

Employing Teaching Method: International Relations

According to Viotti and Kauppi (1987) in the field of international relations, there is threefold division of realism, pluralism, and globalism that defines the diverse images on which theoretical efforts are based in the field of international relations. Understanding of these views is important before one can deduce means by which a computer system can be developed to build an intelligent base for decision making in the international relations and how this can affect students learning when integrated into a business environment. What really unites the three images as a system of international relations is more important for this study than what divides them. Figure 1 below show the images of international relations.

Realism:

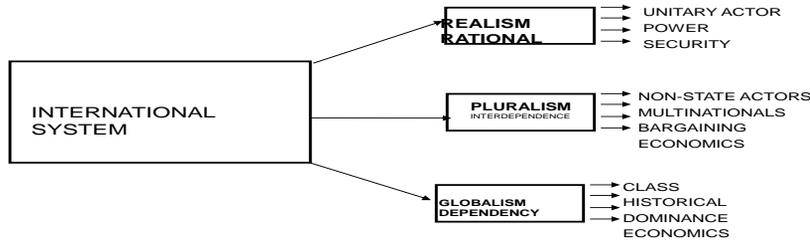
Realism has four major components that mainly are assumptions by this very study. First according to Figure 1, states are the principal actors. Thus the state represents the key unit of analysis whether modern or ancient city or state. Understanding the state action and behavior will have a lot do in reducing the state action into a computer modeling decision making

Secondly, the state is seen as a unitary actor. Despite the ideological differences within the state, the state authoritatively resolves such differences and speaks with one voice for the entire state as a whole. Policy is centralized in order to achieve this objective.

The third element of realism is that the state behaves as a rational actor. An understanding of the state's behavior will help in designing the data to behave in a systematic way when the data is being operationalized. For example, a rational foreign policy decision making process either in politics or economics would include a statement of objective, consideration of all feasible alternatives in terms of

existing capabilities available to the state, to the relative likelihood of attaining these objectives by the various alternatives. Through this rational approach process, decision makers evaluate each alternative selecting the one that maximizes the best outcome to the decision maker.

Figure 1: Images of International Relations



The fourth component is the issue of national security. Sometimes refers as high politics, the military preparedness or readiness is one of realists focus in the international relations. The economic and social issues are viewed as mundane and less important or low politics.

For this research, the collapse of former Soviet Union and eventual cessation of hostilities between the East and West during the cold war makes this assumption for this work useless. Thus, economic factors have dominated the overall interaction of nation states supporting the idea of this research.

Pluralism

The pluralist considers non-state actors as important in their view of international relations. The interdependence of the world makes this image important. Non-state actors such as multinational corporation (MNCs), and non-governmental actors cannot be dismissed according to this view point.

Secondly, according to the pluralist view, the state is not a unitary actor. Accordingly, they consist of bureaucracies, interest groups and individuals that tend influence foreign policy or decision making in the international arena.

Third, according to the pluralists, decision making process is the result of clashes, bargaining, and compromise between and among actors. Thus decision making is one of coalition and counter coalition building, bargaining, and compromising that may not yield the best optimal decision

The fourth contention by these theorists is that economic power plays more important role than military preparedness. The issues of energy, environment, pollution, space, seas now seem to rank with the question of military security.

Globalism:

Globalist image of the international relations assume that the starting point of analysis for international relations is the global context within which states and other entities interact. To them the global “big picture” can only be explained when one can understand the global environment within which states operate. Understanding of the internal factors of the state is not sufficient as the states operate in their external environment

Secondly globalists argue that international relations should be studied from a historical perspective. According to them, the study of current environment both in politics and economic point of view must be studied from historical analysis.

Third, is the issue of domination? Is there a class in the overall nature of world system in both economics and political system. They argue their point through a dependency theory framework. That is the dependency theory that exists between the industrialized and non-industrialized world. The developed Northern Hemisphere and the under-developed southern hemisphere creating a class structure in the system. To them something is unequal.

Fourth, are the economic factors? To them interaction between the have and have-not are purely exploitative. This fourth component of globalist vies is that the economic wealth of the world are exploitative and only to the advantage rich powerful economies.

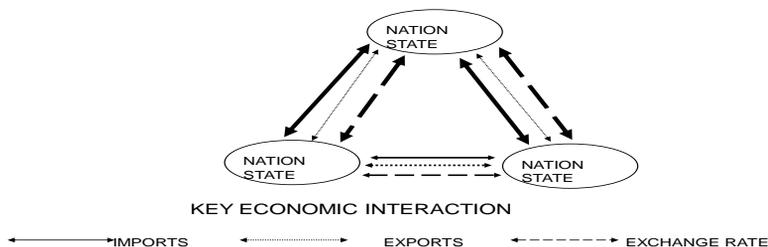
Figure 2 below – the Economic International System shows the interaction between nation states. It also shows that the main activity of their interaction is mainly through trade. Trading is the key important aspects of this interaction process and among the activities they operate upon are:

- Import
- Export
- Foreign Exchange

These three activities will play a major role in formulating our goals on how a nation state will maximize its interest in the international arena and how other nations will react in opposition to their policy making. *Import* – In the area of importation as a decision process in international relations, advocates of protectionism against foreign product flooding their market contend that excessive free trade compromises national security by making nations too dependent on goods from other countries. Governments often justify protectionist policies by claiming that such policies are necessary to help industries that are in their infancy to develop. The validity of this argument, however, is undermined by the tendency for such policies to become permanent as the aided industry grows dependent on the support and even lobbies government officials to keep protectionist measures on them in place.

Export – Export controls are measures used by governments in goods trade to achieve public policy. Objectives are often for economic reasons or for the protection of producers or consumers of a particular product. As a category, export controls is also known as export restrictions or export restraints. Objective is to maintain a trade relation that export more and import less. A trade policy of this type will always cause trade negotiations and rounds of trade agreements.

Figure 2: Economic International System



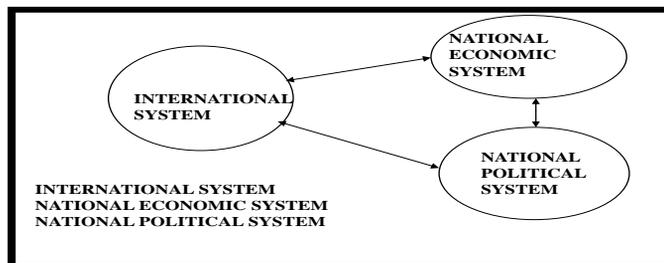
Foreign exchange – Foreign exchange refers to the financial transaction where currency value of one country is traded into another country’s currency. The exchange rate varies according to the value of each country’s currency which is based on the health of that particular country’s economy. Each sovereign state issues and manages its own currency through a national central bank. That is why it is necessary for this research to examine the health of every competing nation in this research so as to determine its vulnerability in decision making process in the international arena.

National Decision Making Process:

National decision making process according to Figure 3 takes into consideration the influence of the international system where competing political and economic philosophy of different various national interest influence the international decision making process. That is when pressure from the international system leads to changes into national interests, doctrines and policies it definitely question the extent this response change the national system. That is, does it spur fundamental changes in a country's national political structure and policies?

Generally speaking, the international system influences the expression of national interests, the design of national and cross-national data exchange, and the expression of opinions and suggestions as regards the final form of a policy. The extent of international influence in this regard could potentially create a new national system. In other words, the international system draws globalization factors into a country's national policy-making process, spurring national government to establish harmonious relations with their international counterparts. This enables the international system to go a step further in molding factors of the national policy-making environment and making obvious its influence on areas of policy areas traditionally considered unsafe. Both national and international system influences each other with specific rules and procedures that govern to their best interest. According to H. Milner (1997) prominent among the requirements of international systems is that participants integrate and restructure their policies, a measure that guides national interests and their expression, changing the structure and process of policy-making, among other aspects.

Figure 3: National Decision Making Process



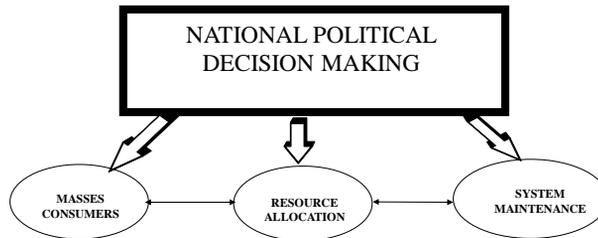
4

National Political System

Sovereign right remains the cornerstone of the modern nation-state, and the principle of sovereignty serves as the axis upon which the international system revolves. According to Stephen D. Krasner (1999), four types of national sovereign rights: sovereignty in international law; sovereignty as defined in the Peace of the United Nations; national sovereignty; and mutually dependent sovereignty. In Figure 4, National Political System, one will notice that to ensure decision making at the national level, the masses

– consumers, the resources allocation and the maintenance of the system are all enduring requisite for political stability of any nation state.

Figure 4 National Political Decision Making



5

In a global market, individuals, households, and businesses trade with each other within and across national borders. According to United Nations, *World Public Sector Report* (2001), globalization is the movement toward greater interaction, integration and interdependence among people and organizations across national borders. The strongest manifestation of globalization has been the increasing economic interactions among countries in trade and investment and in the international flows of capital, people, technology, and information as can be seen in Figure 4, National Economic System Capability.

Figure 5: National Economic System Capability



6

In pure economic sense, Figure 5 above highlights the important factors for effective economic decision making process that is based upon consumption, investment, and government action to address means to stimulate economic competitiveness while pursuing equity, sustainability, and poverty alleviation.

The Degree of Economic and Political Stability

As stated earlier in this study, this work is meant to construct and evaluate decision making in International Relations using a computer-base model and candidly, translating decision making in

international relation into computer-base model demands that the knowledge base be explicit and unambiguously specified.

The use of computer- base model will allow one to observe the decision process in action and be capable to predict or deduce real world event. The Degree of Stability Figure 6 below shows the various varying national goals that determines national competitiveness. Among these are the national goals, economic stability, and political stability. Those three components are crucial in understanding the vulnerability of nations to compete in the international political economy. It is defined in this study as division of economics that focuses on how the combination of politics and economics influences the economy. Three measurable variables are used to evaluate decision making giving the above national goals and are:

- Past aspiration level
- The degree of past aspiration level
- Relative achievements to other nations comparison

3. Assumptions:

Past aspiration level

There is always a drive for every nation to appreciate itself in the international arena. In the Figure 6 below, the incline plane shows the nations represented by letters “A and B” . Each nation past aspiration based upon its index value is determined by the wealth of that nation at given point in time.

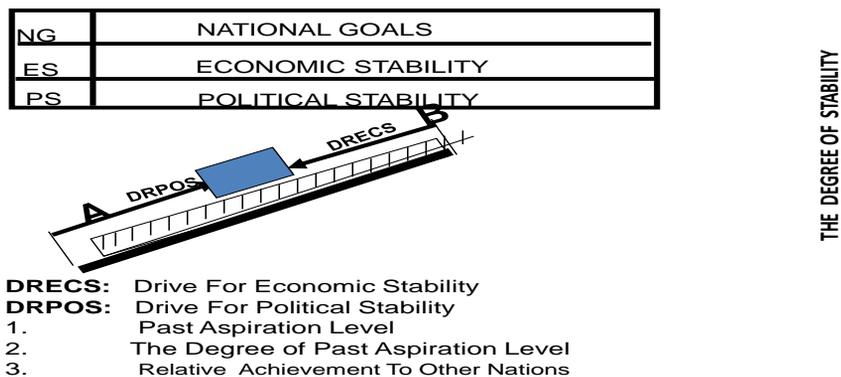
The degree of past aspiration level

The degree of past aspiration is noted to determine its ability and trends to move up or down the plane. In general every nation must exist. Nation never dies but its achievement is noted for aspiration drive and ability compete in the international arena. Recall that the only interaction of the wealth measured by this study is in the area of: import, export, and foreign exchange.

Relative achievements to other nation’s comparison

The comparative analysis with other nations ensures a certain weight of competitive advantage/ disadvantage to its relative worth in trading or negotiating business with other nations or international organization. Such factor as export or import holding maximizes/minimizes a nation’s international competitiveness. More export creates revenue but more of importation calls for paying more receipts which causes a country’s deficit and national debt.

Figure 6: The Degree of Economic and Political Stability



In Figure 6 above, the following Variables holds:

NG = National Goal
 ES = Economic Stability
 PS = Political Stability
 DRECS = Drive For Economic Stability
 DRPOS = Drive For Political Stability

Decision-Making and International Processing Rules

The decision making process rules Figure 7 below, is the various processing rules and show how this rule impact or being impacted by the environment.

Scanning The Environment

Auster and Choo (1993) stated that environmental scanning enables the acquisition and use of information about events and trends in an organization’s external environment, the knowledge of which would assist in planning the organization’s future courses of action.

For this study, environmental issues that are importance to this study are political and economic climate of the given national entity. An unstable environment is not conducive for business. The risk of committing capital investment always makes less attractive for investors to commit their hard currency in that nation.

Goal Formation

The goal formation takes into account the political and economic stability of the nation state. A state in anarchy or crises will most likely have a poor rating in the decision process. Therefore, the goal formation must take into account past economic and political past into the current state to compare its competitiveness in the international market. A positive economic and political stability endowed a nation to have a favorable rating.

Goal Operationalization

Every nation is assigned a constant value called Lambda Expression. A *lambda expression* is an anonymous function that can contain expressions and statements, and can be used to create delegates or expression tree types. For example, “myDelegate = x => x * x.”

Every change of position on the plane at Figure 6, is designated with a Greek letter delta. The Greek letter delta, when used this way, *looks like* this:



It means “change in”. So, if the variable *x stands for a position*, as is in the plane overall space in Figure 6, then this notation:



is read ‘change in position of “x”.’ This can also be read “change in x.” The weight and magnitude of Lambda calculated with delta at every position of the plane has both negative and positive rating hence the country’s perceived overall outlook in the international arena as computed varies in degrees that are positive/negative.

Trading

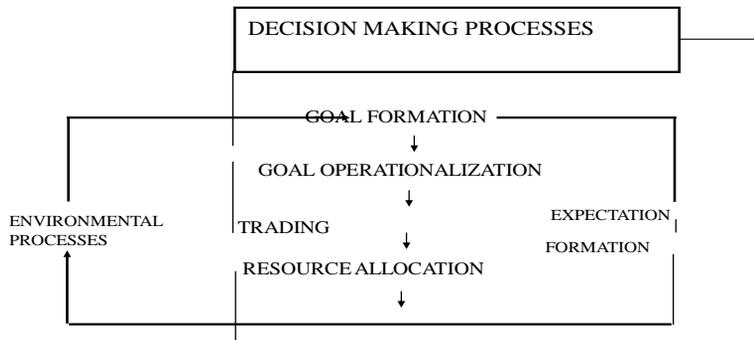
Nations adopt economic and trade policies that directly affect the ability of enterprises and industries engage in international trade and investment. In his book, *The Competitive Advantage of Nations*, Porter (1990) observes that national competitiveness is measured by two sets of indicators: “(1) the presence of substantial and sustained exports to a wide array of other nations, and/or (2) significant outbound foreign investment based on skills and assets created in the home country” (p. 19).

In trading, the nation's ability to trade and become competitive in the international arena with other nations depends on its ability to enlarge its competitive advantage. According to the President's Commission on Industrial Competitiveness (1985):

Competitiveness is the degree to which a nation can, under free and fair market conditions, produce goods and services that meet the test of international markets while simultaneously maintaining or expanding the real incomes of its citizens.

Trading and competitive advantage are taking together in calculating the delta change as needed in Figure 6 above.

Figure 7: Decision-Making and International Processing Rules



8

All components of trading such as import, export, and foreign exchange are all factored into the overall delta change during a nation's enduring aspiration level to compete with other national competitors in the international system.

4. Conclusions:

The success of any decision outcome often turns on the quality of the decision-making process. Are good and bad outcomes significantly affected by the decision-making process itself? Indeed they are, in that certain decision-making techniques and practices limit the ability of individuals to achieve their goals and advance the national interest.

The international system today affects the lives of everyone. The world's trading systems, financial systems, political and corporate systems are complex, interdependent, and powerful. This research has examined the interrelatedness of our complex human society and integrated technology as a computer interfaces to allow for more detailed process-tracing of decision making process.

5. Result of the Research:

The propose project will significantly help students in international business/international affairs or international relations understand the dynamic nature of international system. The result will include the following important outcomes:

1. Students have been exposed through the effort of the real world problems and how the decision impact nations both in bilateral and multilateral engagements
2. It will create an opportunity for more cross-discipline research work from different constituencies including but not limited to social sciences, businesses, and computer sciences.
3. Finally it will support the effort of the President of Paine College's thrust to make Paine College one of the premier liberal arts institutions that will take advantage the global economy.

References:

Hobsbawm, Eric J. Nations and Nationalism Since 1780. Cambridge: Cambridge University Press, 1990.

Robert Reich (1992), The Works of Nations

Helen Milner, *Interests, Institutions, and Information: Domestic Politics and International Relations* (Princeton: Princeton University Press, 1997), p. 10.

Stephen D. Krasner, *Sovereignty: Organized Hypocrisy* (Princeton, N.J.: Princeton University Press, 1999).

United Nations, *World Public Sector Report: Globalization and the State*, New York: United Nations, Department of Economic and Social Affairs, 2001.

Auster, E. and C. W. Choo 1993. Environmental scanning

Porter. M. E. (1990), The Competitiveness of Nations, New York: The Free Press.