

# Some Perspectives on Global Relations Through Statistics

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## 1. Introduction

People across nations share the bonds of family, friendship, community, and knowledge. Examples of such bonds are the caring of a parent, the good times with a friend, the pride of a city, and shared knowledge. These important bonds tend to bring and keep people together. Bonding encourages and enhances harmony.

Our world is experiencing a type of bonding in the form of global interdependence and cooperation. Was there ever a time in history when the need for global cooperation exceeded the current need? Soviet General Secretary Mikhail Gorbachev referred to global cooperation in his address of June 25, 1987 to the Communist Party Central Committee when he stated:

Comrades, not one state in the world of today can regard itself isolated from others in the economic respect....In other words, the overhaul of the Soviet economy, considering the Soviet Union's significant share in the world economy, will improve the development of broad international economic relations (Gorbachev (1987)).

The General Secretary's pronouncement seems to represent a notable departure from predecessors' views and deportment. His

words also portray the realities of our contemporary world and its trends of interdependencies. Despite acknowledged countervailing stresses – sometimes severe and protracted – global interdependency among nations increases.

Therefore, there is commensurate need for global harmony. Here “global harmony” simply refers to the existence of essential accord among most nations, most of the time. Statistics can help.

## 2. Nonstatistical Global Bonding

Global bonding is not entirely new. In one form or another it has been going on for a long time. The Roman Empire's uniform legal and administrative system extended to parts of four continents between 31 B.C. and approximately 250 A.D. The British Empire grew to encompass one-fourth of the world's population and land area during the 19th century. The Empire's widespread economic influence mirrored its global administrative system, although not necessarily to every country's benefit.

Global bonding is not limited to business, economics, or politics. Music, science, the arts, athletics, medicine, architecture, literature – all have aspects of global bonding. Global bonding, then, refers to our increasingly interconnected world with increasing linkages through expanding international

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and interpersonal familiarity and cooperation. Consider the following recent harmonizing developments and trends.

1. International communications soared from 19th century undersea telegraph cables to 20th century space satellites with compatible technologies that speed global transmissions of voice, pictures, and data.
2. Globally-synchronized postal and telephone systems continued to improve in their respective capacities to transport letters and transmit calls around the world.
3. Globe-shrinking international airline travel for all countries reportedly has increased by about two-thirds in the last decade.
  - In 1977, there were 610 million passengers worldwide,
  - In 1987, the number passed one billion! (International Civil Aviation Organization (1987) (1988))
4. During 1987, the New York-based American Stock Exchange opened an office in Amsterdam to trade options contracts. With this development, the already common trading of stocks and bonds took a further global step (Hinden (1987)). Through burgeoning electronics, we are experiencing around-the-globe, around-the-clock trading.
5. Large numbers of foreign students are common in most industrialized nations. For example, Japanese companies encourage their employees to enroll in U.S. business schools to study our culture but also to make contacts to foster future business dealings between Japan and the United States.
6. There is a trend in apparel, cars, appliances, etc., to have components from a

number of countries. In general, consumers worldwide benefit by comparatively higher quality and lower prices than might otherwise be the case.

7. There are many international working relationships that require a high level of technical cooperation such as:
  - The worldwide ocean navigation and rescue system that involves most major nations,
  - Climate and weather tracking and research, and
  - Joint scientific explorations. Recall the successful rendezvous of the United States Apollo and Soviet Union's Soyuz spacecrafts on July 17, 1975.

What is encouraging about these developments is that they are long-range trends, not short-range aberrations. Also, such developments are expanding in number, scope, diversity, and significance. In many instances these trends translate into expanded international cooperation in ever-varying forms for better international relations.

### 3. Statistics as a Global Language

The discipline of statistics possesses characteristics that are potentially well suited to global usage and harmonious acceptance:

- *Objectivity* of fact and the rational scientific process,
- *Verification* by repetition of experiments and findings,
- *Commonality* of procedures, methods, and technology, and a
- *Vocabulary* of recognized and accepted terms and symbols.

These and related aspects of statistics provide the discipline with a certain universal understanding and acceptance. Statistics is a neutral medium for exchanging ideas and information...and a means for evaluating both.

4. Examples of International Statistical Cooperation

Many examples of international statistical cooperation may be cited. Deciding which examples merit the designation of “milestone development” is, of course, arbitrary. Therefore, Table 1 is an arbitrary listing of milestone developments. However, Table 1 provides a feel for the general development of international statistical cooperation over the past century. Some milestone events deserve to be highlighted with additional commentary below.

4.1. The International Statistical Institute

Founded in London in 1885, this institute is

the oldest international statistical association. Sections 1 and 3 of Article I of the founding statutes are especially germane to the theme of this article.

By introducing, as far as possible, uniformity in the methods of compiling and abstracting statistical returns and by adopting it in the compilation of statistical publications with a view to a comparison of the results obtained in different countries (Nixon (1960)).

By preparing international publications as a means of bringing into communication the statisticians of various countries (Nixon (1960)).

Table 1. Some milestone developments in international statistical cooperation

Year	Milestone development	Brief description
1885	Founding of the International Statistical Institute (ISI)	Founded in London, this may be regarded as the first formal international association of statisticians.
1923	First International Conference of Labor Statisticians	Held October 29 in Geneva under the auspices of the predecessor of the United Nations International Labor Organization.
1933	First issue of ISI’s Review of the International Statistical Institute	In 1972, the International Statistical Institute changed the name of this publication to International Statistical Review.
1934	British Council founded	Incorporated by royal charter in 1940 to give technical assistance to foreign countries.
1940	Inter-American Statistical Institute (IASI) established	A committee on demographic statistics within IASI was among the first to recommend technical assistance for censuses.
1946	Formation of the United Nations Statistical Commission	This commission is currently composed of the chief statisticians of 24 countries as the elected representatives. They meet biennially. Controlling purpose is to coordinate international statistical activities.

(cont.)

*Table 1. (cont.) Some milestone developments in international statistical cooperation*

Year	Milestone development	Brief description
1946	United States Census Bureau formally established international statistical training	Although the Census Bureau trained people before 1946, this was the first year of formalized training. Subjects taught this first year were directly related to census-taking in preparation for the 1950 Census of the Americas. The Census Bureau trained 16 people (all from Latin American countries) during 1946.
1946	French technical statistical assistance formalized	France's National Institute of Statistics and Economic Studies (INSEE) began a cooperation section devoted to offering statistical technical assistance.
1953	Inter-American Training Center for Economic and Financial Statistics established	Established by the Inter-American Statistical Institute (IASI) in Santiago, Chile.
1960	Florence: A Case Study for Population and Housing Censuses published	The United States Bureau of the Census's first published case study. Also, it represents the first international case study on population census methodology.
1968	First EEC Cooperative Survey of Labor occurred	Carried out to assess availabilities and characteristics of labor forces in the EEC countries.
1969	United Nations Fund for Population Activities (UNFPA)	Founded as a mechanism for the United Nations to channel assistance to population and demographic programs.
1971	International Association of Survey Statisticians (IASS) founded	A section of the ISI established to focus on special interests and needs of survey statisticians.
1972	World Fertility Survey	Initiated largely in response to the announcement of the World Population Year 1974 and the United Nations call for concerted world action on population matters. This survey covered 42 developing and 20 developed countries. It required 12 years (1972–1984) to complete.
1979	National Household Survey Capability Programme (NHSCP) begun	World-wide program established by the United Nations Statistical Office to encourage regular programs of annual surveys.
1985	International Association for Official Statistics (IAOS) founded	A section of the ISI established to focus on the special interests and needs of government statisticians.

Table 1. (cont.)

Year	Milestone development	Brief description
1986	United States Census Bureau formally established Spanish-language training	The Census Bureau established this Spanish-language School for Applied Statistics and Data Processing Technology (ESAYTEC) in Washington.
1988	Scheduled implementation of the Harmonized System	Flows from the Harmonized System Convention which opened for signature in 1983. When the convention is fully implemented, approximately 150 nations are expected to use a single-code system of international trade measurement and reporting.

Note: The author gratefully acknowledges the help of Mr. Robert O. Bartram (Chief, International Statistical Programs Center) and Mr. Eugene J. Vandrovec (Information and Research Services Staff, International Statistical Programs Center) in compiling Table 1.

Now ISI members and others from over 80 countries attend the ISI’s biennial conferences to meet, to cooperate with each other, and to befriend each other. These meetings provide both focus and forum for identifying and resolving statistical issues which span numerous countries.

4.2. *The United Nations Statistical Office*

Created in 1946, the United Nations Statistical Office continues its programs to improve census-taking and other statistical programs. “The statistical activities of the United Nations are carried out under the guidance of the Statistical Commission, which advises both the Council and the Secretary-General” (United Nations (1988)). The Statistical Office advises governments on the kinds of data to collect, the frequency of collection, and ways to tabulate and present results. This office also establishes standards in concepts and definitions.

The Statistical Commission held its twenty-fourth session February 4 – March 4, 1987. The “Current Activities” section of the Statistical Commission’s report of this session states in paragraph 83: “National and subregional statistical training centres conti-

nued training at appropriate levels with either their own resources or direct and indirect assistance from international organizations and statistically more developed countries. During 1985 – 1986, more than 45 countries received such assistance” (Proceedings of the United Nations Economic and Social Council Statistical Commission (1987)). The number of countries indicates the widespread nature of the statistical Commission’s training.

The Census Bureau’s Center for International Research exchanges data with the United Nations, as do other nations. These exchanges tend to strengthen the statistical systems for the countries involved. For example, the Census Bureau’s compilation shows that during the decade 1975 to 1984, 213 population censuses were conducted in 190 nations. After the next round of censuses, between 1985 and 1994, the entire world will be covered by a reasonably accurate census.

The work of the United Nations’ Statistical Office consistently assists these census-taking efforts in numerous countries. Statistical agencies can strengthen the United Nations help by supplying high quality and timely data.

4.3. Transnational Cooperative Surveys

Surveys are a scientific medium that can be used to detect where and when populations need help and the nature of that help. Through statistical sampling pioneered by the United States Census Bureau in the 1930s, nations now routinely query comparatively small but representative portions of their populations on a host of social and other issues.

An example of a cooperative international program is the annual labor force survey conducted currently by the Statistical Office of the European Community, "EUROSTAT." The coordinated design, implementation, and timing of this survey for all the Common Market nations result in useful data comparisons and combinations. Such data, in turn, shed light upon labor force policy formulations and modifications to benefit the European Community.

Another prominent example is the World Fertility Survey. This herculean effort was two years (1972–1974) in the planning stage. It required the combined and coordinated efforts of three international organizations: the International Statistical Institute, the United States Agency for International Development, and the United Nations Fund for Population Activities.

Chosen to lead this bold initiative was

world-renowned statistics scholar, Sir Maurice Kendall. "In 42 developing and 20 developed countries covering about 1.7 billion people, over 330 000 women in the reproductive age range were interviewed during 1974 – 1982. As a result, today's policy-makers, international agencies, and researchers have access to a blueprint that charts, with reliability not hitherto achieved, the detailed features of the fertility of each of the nations" (Gille (1984)).

That the survey became difficult at times and controversial among some seemed inevitable. What should overshadow these inevitabilities are: (1) the importance of the problems the survey was designed to address, (2) its scope and significance, (3) use of its data, and (4) the precedent- and pattern-setting cooperation the World Fertility Survey represented for future surveys among nations.

4.4. Global modeling

As the trade and financial links among nations become more important, global econometric models are vital to governments in setting trade, tariff, and currency policies and to multinational enterprises in making business decisions. Typically, these models are statistically dependent on *comparable* economic, financial, and other data. These models are thereby dependent on coopera-

Table 2. Milestones in international statistical training

Year	Development
1946	United States Bureau of the Census formally established an international training program.
1948	Food and Agriculture Organization (FAO) of the United Nations sponsored the first temporary regional training center on problems of agriculture and population censuses.

Table 2. (cont.)

Year	Development
1949	International Statistical Institute (ISI) formed the Committee on Statistical Education.
1950	Indian Statistical Institute and ISI opened the International Statistical Education Center in Calcutta.
1952	Netherlands established the Institute of Social Studies in the Hague.
1953	Inter-American Statistical Institute (IASI) established the Inter-American Training Center for Economic and Financial Statistics in Santiago, Chile.
1960	United States Bureau of the Census published its first case study, "Florenca: A Case Study for Population and Housing Censuses." This study was also the first case study on international population census methodology.
1962	Chile and the Organization of American States jointly established the Inter-American Statistical Training Center (CIENES) in Santiago.
1962	France established the European Center for Training of Statisticians from Developing Countries (CESD) in Paris.
1963	United Nations Economic Commission for Asia and the Far East (now ESCAP) published a "Manual on Training of Statistical Personnel at the Primary and Intermediate Levels."
1967	Food and Agriculture Organization (FAO) and the United States Bureau of the Census established a Joint FAO/US Training Program on the 1970 World Agricultural Census.
1970	U.N. Economic Commission for Asia and the Pacific (ESCAP) established Statistical Institute for Asia and the Pacific in Tokyo.
1972	Federal Republic of Germany, European Community, and CESD established the Munich Center for Advanced Training in Applied Statistics for Developing Countries in Munich, Germany.
1976	United Nations with 15 Arab countries formed the Arab Institute for Training and Research in Statistics in Baghdad, Iraq.
1977	Conference of African Statisticians established the Statistical Training Program for Africa (STPA).
1982	ISI organized the First International Conference on the Teaching of Statistics (ICOTS) in Sheffield, England.
1986	United States Bureau of the Census launched a Spanish-language School for Applied Statistics and Data Processing Technology (ESAYTEC) in Washington, D.C.

Note: The author gratefully acknowledges the help of Mr. Robert O. Bartram (Chief, International Statistical Programs Center) and Dr. Kenneth R. Bryson (Chief, Training Branch, International Statistical Programs Center) in compiling Table 2 information.

tion among governments (and others) that collect, disseminate, and use the data.

The oldest and most detailed world economic model was developed in the early 1960s at the University of Pennsylvania by 1980 Nobel Laureate Lawrence Klein. "Project Link" now links together over 80 individual and national or regional econometric models. Many international organizations like the International Monetary Fund and World Bank are regular users of Project Link, as are multinational corporations.

Professor Klein commented on United States economic policies in a global context. He advised, "In the international sphere, we should continue to coordinate our policies with those of our main trading partners and keep trying to persuade them – Japan, Germany, Canada, Mexico, South Korea, Taiwan, Brazil, and others – to align their policies for a path of better world economic performance (i.e., noninflationary growth)" (Pogany (1986)). These sentiments are consistent with and underscore the need for global economic modeling with commensurate statistical support.

An earlier Nobel Laureate, Professor Wassily Leontief, developer of economic input-output models in the 1950s, has expanded his work to the global level, especially since the oil embargoes of the 1970s. His modeling attempts to predict the impacts of sudden changes in prices and policies of one country or product on the world community. Leontief covers much of his views and work in his 1977 book, *The Future of the World Economy*. (Leontief (1977)).

These are but two global models that specialize in different aspects of the world economy. There are others. All require international statistical cooperation to (1) identify pertinent data, (2) assess comparability of collection methods, definitions and categories, (3) synchronize timing as much as possible, and (4) adjust data realistically for the inevitable data differences, nation to nation.

#### 4.5. *Harmonized trade statistics*

This is a more recent (but also a related) development. When fully implemented, the "International Convention on the Harmonized Commodity Description and Coding System" will provide a common core for international trade statistics used by over 150 nations. In addition to Japan, Canada, United States, and the European Economic Community, the People's Republic of China will also participate. As proposed, the system is to cover finished and semi-finished goods, raw materials, and agricultural products. The core import and export classification categories and their six-digit codes will be the same in every participating nation.

"An International Economic Congress held in Paris in 1889 recognized the interest of all nations in adopting comparable classifications and uniform vocabularies in customs tariffs and trade statistics" (Torrence (1985)). Obviously, such a "harmonized" system has been a very long time coming about.

Global implementation began in January 1988. When fully implemented, this harmonized system should greatly facilitate trade discussions and foster better trade decisions due to vastly improved understanding through data comparability.

#### 4.6. *Miscellaneous activities*

Other cooperative efforts abound. Space does not permit anything beyond a brief description of several examples.

##### 4.6.1. *Canada's world trade database*

In support of its bilateral and multilateral trade analyses and negotiations, Canada established this database in 1986. Data on imports and exports submitted to the United Nations Statistical Office from approximately 130 reporting countries provide the foundation for this World Trade Database. Statistics Canada analyzes these data broken down by



approximately 170 partner countries and customs districts at the four-digit (per SITC – Rev. II) level for about 800 items.

#### 4.6.2. International statistical cooperation agreements

These range from numerous bilateral agreements to multilateral agreements. The U.S. Census Bureau has a number of such agreements.

Other statistical agencies do also. For example, the Council for Mutual Economic Assistance formed in 1949 is composed of the Soviet Union, Bulgaria, Hungary, Poland, Romania, the German Democratic Republic, Czechoslovakia, Cuba, and now Vietnam. Yugoslavia is an associate member. Its 1986 *Statistical Yearbook* reflects council members' cooperation.

Another example is the Nordic Countries' Statistical Cooperation. This cooperation dates back to 1889 when the chief statisticians from the founding four countries (Denmark, Finland, Norway, and Sweden) agreed to cooperate. Later Iceland joined. A host of cooperative committees on such topics as censuses, income statistics, national accounts, wage statistics, etc., currently operates. A centenary celebration is scheduled for August 1989 in Esbo, Finland.

### 5. Some U.S. Census Bureau Activities

Tables 1 and 2 mention some of the U.S. Census Bureau's international statistical activities. Essentially our activities cover training, technical assistance to developing countries, research, conferences, and joint cooperation agreements with other nations for mutual improvement of our respective statistical programs.

#### 5.1. International Training Programs

Section 5.3. provides a succinct overview of the Census Bureau's international statistical

training beginning with its formal inception in 1946. While both the curriculum and the participating countries have changed and developed, the initial aims in offering the training remain essentially the same. Our controlling aims are to make the students familiar with the fundamental principles and practices required to plan, manage, process, interpret, and disseminate data generated through censuses and surveys. Students from around the world learn the same basic approaches. With the passage of time, this in itself helps improve international statistical cooperation.

#### 5.2. The U.S. Census Bureau's annual research conferences

The U.S. Census Bureau launched its series of annual research conferences in 1985. The purpose of the conferences is to provide a forum for presentation and discussion of our completed work, work in progress, and prospective work.

We seek expert reactions and advice from those with a shared interest in the statistical problems and issues explored and deliberated. The Census Bureau very much values the focus and feedback conveyed by international participants.

The Census Bureau hosted its fourth annual international research conference in March 1988. Attendance for this conference was 570 versus 442 for the first conference. Also, 13 countries sent representatives to the 1988 conference as compared with three countries for the first conference. Increasing international participation perhaps reflects the need for global harmonization in the statistical world. Subsequent proceedings of all these conferences expose, of course, thousands more to conference content.

#### 5.3. United States Census Bureau international training

In 1946, the U.S. Census Bureau formally set

up an international training program to share knowledge and help many newly independent nations take censuses. The Census Bureau established such training because of the void in practical training through traditional university statistics courses in the United States and elsewhere.

Census Bureau training focuses on large-scale government censuses and surveys – and the procedures and problems involved. Training stresses applied statistics and addresses the practical considerations and compromises that are necessary.

Each year, 70 to 90 statisticians participate in Census Bureau programs in Washington, D.C. Over 10 000 people from over 100 nations have now participated in our programs in Washington or in their own countries. Subject areas are as diverse as agricultural and economic statistics, questionnaire design, sampling, census taking, data processing and the organization and management of large-scale statistical programs and processes. The curriculum addresses the practical problems of training and supervising large work forces.

In late 1986, statistical training in Spanish was started. Our Spanish-language instruction responds to the needs of Spanish-speaking nations. Over time this means that the Census Bureau will be able to reach and teach significantly more students.

#### 5.4. *The Canada-United States Agreement on Export Statistics*

A significant event of international statistical cooperation occurred in July 1987. The U.S. Census Bureau signed an international agreement with another U.S. agency and two Canadian agencies that will lead to a unique statistical arrangement – perhaps a forerunner of international cooperation among other nations. The basis for this cooperation is the shared problem of collecting accurate statistics on the trade between the U.S. and

Canada. The goal is for Canadian-collected data on imports from the United States to be the official American export data to Canada, and vice versa. This arrangement (apparently the only one of its kind between major trading nations) will notably improve both countries' export data, and at a negligible cost. This is an example of a new statistical cooperation program that brings participating countries closer together.

### 6. **Optimistic Perspectives**

In *The Art of the Soluble*, Sir Peter Medowar optimistically observed:

The scientist values research by the size of its contribution to that huge, logically articulated structure of ideas which is already, though not yet half built, the most glorious accomplishment of mankind (Medowar (1967)).

Surely statistics can abet “that huge, logically articulated structure of ideas” so central to building global harmony. The global economy brings with it a mounting need for and likelihood of international cooperation. Such cooperation favors (and sometimes forces) the use of comparable statistics for realistic discussions and decisions involving transnational activities.

Increasing global harmony is deceptive because it occurs unevenly in time and place. Also, conflict is superior to cooperation in its publicity-creation capacity so we hear less about cooperation.

The burgeoning, global expansion of electronic technology is another favorable trend. It speeds the collection, communication, and compatibility of statistics.

Statistics are often the focus at conferences throughout the world on most any topic, such as: international trade and finance, environmental preservation, virtually all the hard

sciences, economics and demographics, health and education, entertainment, arts, and sports.

Who speaks "statistics"? Increasingly, the world speaks statistics. Governments talk to governments in and about statistics. Scientists speak statistically to other scientists. Businesses speak to other businesses using statistics. World leaders cite statistics to other world leaders in order to solve and to avoid international problems.

- Global harmony reflects nations' cooperation.
- Such cooperation is on the rise but frequently in uneven and subtle forms.
- That cooperation is indispensable to global prosperity and peace.
- Communication is likewise indispensable for global harmony.
- A common understanding is necessary for communication.
- Statistics provides such a common understanding for many critical aspects of international discourse.
- Statistics is under-valued as a medium for advancing global help, hope, and harmony.

Beyond statisticians' self-interest to further their discipline, they can also encourage global harmony through statistics. What an enviable opportunity this is!

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