

GLOBAL RECALL AND NETWORK GAME: GLOBAL ACCESS TO GLOBAL MODELS

Medard Gabel

World Game Institute, Philadelphia, Pennsylvania, USA

Keywords: Simulation, Internet, problem solving, alternative futures, exploring alternative futures, creating alternative futures

Contents

1. Introduction/Overview
 2. Global Recall: A Tool for Global Problem Solving
 3. Global Recall: The Model
 4. NetWorld Game: The Internet as Tool for Global Problem Solving
 5. NetWorld Game Operations Center
 6. NetWorld Game Model: the Budget Page
 7. NetWorld Game's Econometric Model
 8. Future Developments
- Acknowledgments
Glossary
Bibliography
Biographical Sketch

Summary

The history of technology illustrates that new developments, such as the steam engine, internal combustion engine, or computer start off as relatively large, cumbersome, expensive and one-of-a-kind prototypes that are designed and used for one purpose. As the inventor(s) and early adapters learn more, the technology in question gets smaller, more efficient and powerful, less expensive, multipurpose, and available to the masses.

A similar pattern of development is happening with global models. The first global models were very large, cumbersome, specialized, expensive, and available to only an elite few. As we slowly move up the learning curve, global models improve, are used for more purposes, and become more widely available.

Global Recall is a global problem-solving tool. Its purpose is to help its users better recognize, define, and solve global problems and local problems in a global context. It comes with a database of more than 600 indicators for every country in the world, a data analysis and graphing component, an encyclopedia of world problems, and a Solutions Lab where solutions to global and local problems are tackled by the user of Global Recall.

NetWorld Game is a significant advance over Global Recall. NetWorld Game is an Internet-based multi-user global simulation. It contains many links to other sites that add perspective, data, alternatives, and real-world funders, policymakers, and implementers of change to the simulation.

NetWorld Game puts the user in charge of the world, or a sector of the global economy to be more precise, and allows them to lead the world twenty years into the twentieth century. Players run a country or region of the world, a multinational corporation, or bank.

Both Global Recall and NetWorld Game use simple econometric models of individual national economies and the global economy as a whole to help users learn about consequences of different budgetary investments and interactions between economic sectors. In addition they are used to develop and explore different policy alternatives and solutions to social, economic, and environmental problems.

1. Introduction/Overview

Thomas Jefferson said “The best defense of a democracy is an informed electorate.”

The history of technology illustrates that new developments such as the steam engine, internal combustion engine, and computer start off as relatively large, cumbersome, expensive, and one-of-a-kind prototypes that are designed and used for one purpose. As the inventor(s) and early adapters learn more, the technology in question gets smaller, more efficient and powerful, less expensive, multipurpose, and available to the masses. This latter point is referred to as the “democratization” of the technology in question.

The computer is a recent example of this trend toward “more with less,” multipurpose, and availability. The first computer, the multi-ton ENIAC at the University of Pennsylvania, has been replaced by the orders-of-magnitude more powerful, lighter, less expensive, versatile, and mass-produced personal computer.

A similar pattern of development is happening with global models. The first global models were very large, cumbersome, specialized, expensive, and available to only an elite few. As we slowly move up the learning curve, global models improve, are used for more purposes, and become more widely available. This article describes two global models that are embedded within global problem-solving tools that are intended to be widely available and useable, not by a few research scientists, but by students, teachers, the media, the general public, and researchers. As will be seen, these models and tools are different in scope, intent, purpose, goals, and use from the other global models presented in this encyclopedia.

The two global problem-solving tools presented here are delivered in different media (floppy disks and the Internet) but are linked in that one (NetWorld Game) is the evolution of the other (Global Recall).

2. Global Recall: A Tool for Global Problem Solving

Global Recall is delivered on floppy disks and is available for Macintosh computers. It is intended as a global problem-solving tool. Often referred to as an “interactive atlas” by resellers and reviewers, Global Recall does contain more than 500 maps, but to refer to it as only an atlas is akin to referring to a computer as a doorstop. Global Recall’s purpose is not to merely describe the present or past, or to study current trends, or to

predict future states. Its purpose is to help its users better recognize, define, and solve global problems, and local problems in a global context. It comes with a database of more than 600 indicators for every country in the world, a data analysis and graphing component, an encyclopedia of world problems, and a Solutions Lab where solutions to global and local problems are tackled by the user of Global Recall. Figure 1 shows the Main Menu screen, which denotes the three main components of this program: the interactive encyclopedia of global problems, the problem-solving laboratory, and the database of socioeconomic and environmental statistics and maps.

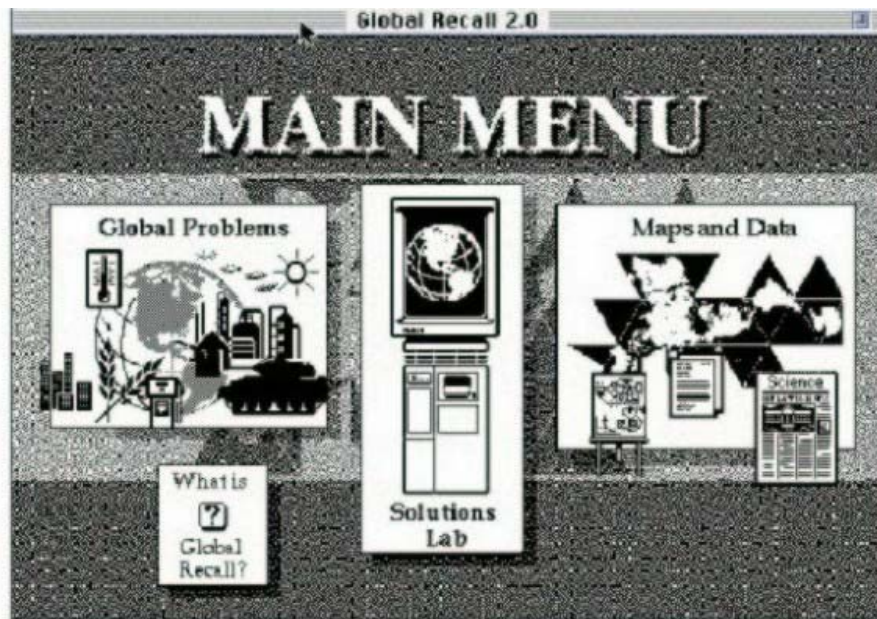


Figure 1. Main Menu screen for Global Recall

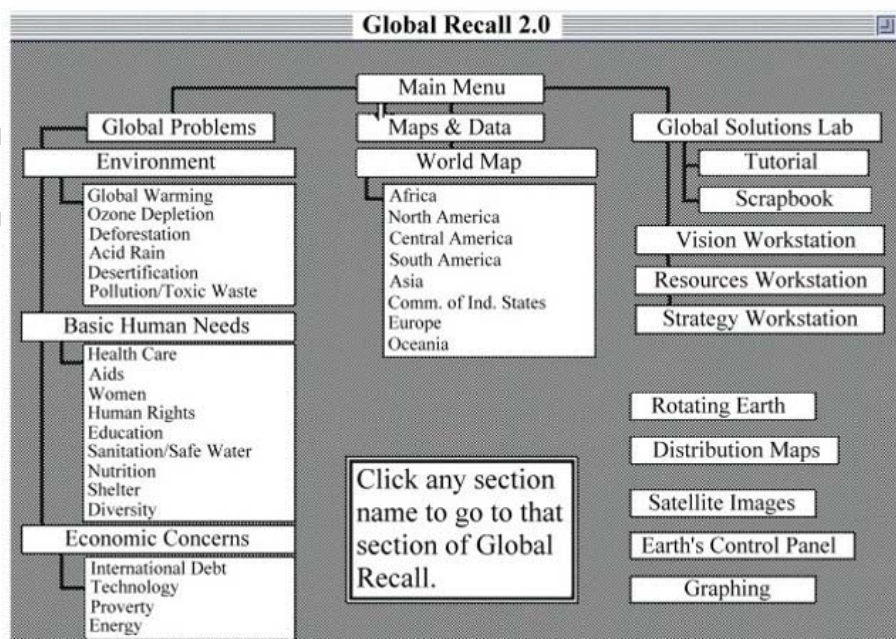


Figure 2. Outline of Global Recall sections

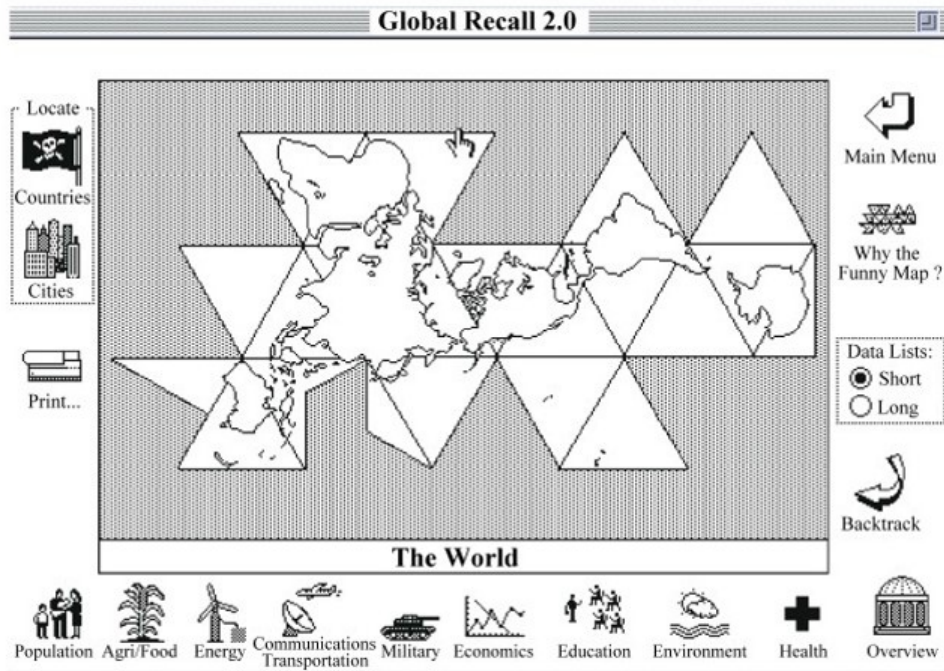


Figure 3. Global Recall's opening screen for the database and maps section

Embedded within the Solutions Lab of Global Recall is a simple econometric model that is intended to help the user learn about the relationships between different economic sectors and their problems. It is simple by global model standards but is not intended to stand alone or to predict climate fluctuations or the next quarter's US interest rates. It is one part of a complex sequence of a problem-solving process that is intended to get people involved in the development of alternative solutions to pressing world problems. On one level it is intended to democratize the availability of global information and the problem-solving expertise needed to synthesize data into knowledge and knowledge into solutions. It is an attempt to reduce the distance between the average human being, their creativity, imagination, insight, values, and problem-solving abilities and the problems of the planet we all inhabit. It is also the attempt to legitimize the study of complex problems by the lay person.

The Solutions Lab leads the user through a twelve-step problem-solving process that helps to clarify what the problem is, define it from a comprehensive framework, determine alternatives, choose the best option, determine costs in terms of resources, money, and personnel, develop a time flow of what happens when and where, and determine what is needed to make the solution sustainable. The maps, data, and problem encyclopedia are all hyperlinked so that the user can link back and forth as data is needed to learn about the depth of a given situation or opportunity, explore alternatives, or buttress solutions.

3. Global Recall: The Model

The econometric model embedded within Global Recall has nine sectors: Food, Shelter, Health, Education, Energy, Environment, Communication and Transportation, Human

Rights, and Leisure Time. These represent resources, services, or quality-of-life indicators. Data for each of these indicators is an index derived from real-world data.

The user of the model starts off with the present state of the real world and seeks to change the current world conditions to those he or she has defined as desirable or “preferred state” conditions. The focus of the model is defined by the user; that is the user picks a country, continent, or the whole world as the unit of analysis. The model then goes into its database and brings out the current state for the specified unit. The user invests Human, Financial, and Material Resources to change the current state to the preferred state. The results of different allocations can be seen instantly by clicking on the Calculate button on the screen. Each resource affects each indicator differently, and each combination of resources affects each indicator differently.

An additional feature of Global Recall is the *Global Recall Formulator*. This allows the user to create their own model using the 600+ indicators in the Global Recall database. The user selects variables in the database that they want to represent their model, then they define relationships between the variables and weigh the importance of each variable. The output of this selection process is a new model with the user’s choices for indicators and relationships. It replaces the default model Global Recall came with that is supplied by the World Game Institute.

When the user is finished allocating resources they go on to the next Work-Station and learn the results of their investments.

-
-
-

TO ACCESS ALL THE 15 PAGES OF THIS CHAPTER,
Visit: <http://www.eolss.net/Eolss-sampleAllChapter.aspx>

Bibliography

- Ackoff R. (1976). *Redesigning the Future*. New York: Wiley Interscience.
- Bateson G. (1972). *Steps to an Ecology of Mind*. New York: Chandler Publishing Co.
- Beer S. (1976). *Platform for Change*. London: Oxford University Press.
- Bell R.C. (1969). *Board and Table Games from Many Civilizations*. London: Oxford University Press.
- Blitzer C.R. et al. (1986). *Economy-Wide Models and Development Planning*. Washington, DC: World Bank/Oxford University Press.
- Bohm D. (1980). *Wholeness and Implicate Order*. London: Routledge and Kegan Paul.
- Boulding K. (1989). *Conflict and Defense*. New York: Harper.
- Deutsch K.W. (1966). *The Nerves of Government: Models of Political Communication and Control*. New York: The Free Press.
- Forrester J. (1973). *World Dynamics*. Cambridge, MA: Wright-Allen Press.

Fuller R.B. (1969). *The World Game: How It Came About*. (Proceedings of the Operations Research Society of America Annual Conference 1969).

Galtung J. (1990). International Development in Human Perspective. *Conflict: Human Needs Theory* (ed. J. Burton). New York: St. Martin's Press.

Ginsberg I.W. and Angelo J.A. (1990). *Earth Observations and Global Change Decision Making*. Melbourne, FL: Krieger Publishing Co.

Gittenger. (1982). *Economic Analysis and Agricultural Projects*. New York: World Bank/Oxford University Press.

International Communications and Negotiation Simulations: ICONS (1996). <www.bsos.umd.edu/icons/icons.html>.

Kelly K. (1994). *Out of Control: The Rise of a Neo-Biological Civilization*. Addison-Wesley Publishers.

Leontief W. (1977). *The Future of the World Economy*. New York: Oxford University Press. [The United Nations world model project.]

Mazlish B. (1993). *The Fourth Discontinuity: The Co-evolution of Humans and Machines*. Yale University Press.

Meadows D.H. et al. (1972). *The Limits to Growth: A Report for the Club of Rome's Project on the Predicament of Mankind*. New York: Universe Books.

Meadows D.H. et al. (1982). *Groping in the Dark: The First Decade of Global Modelling*. New York: John Wiley and Sons.

Mennes and Stoutjesdijk (1985). *Multicountry Investment Analysis*. New York: World Bank/Oxford University Press.

Mesarovic M. and Pestel E. (1974). *Mankind at the Turning Point*. New York: E.P. Dutton.

Miller and Blair (1990). *Input-Output Analysis*. New York: Oxford University Press.

Morgenthau H. (1948). *Politics Among Nations: The Struggle for Power and Peace*. New York: Knopf.

Najam A. (1996). *Managing the Global Use of Organochlorines: A Negotiation Simulation, (the "Chlorine Game")*. <www.mit.edu/people/anajam/cl-game.html>.

Odum H. (1971). *Environment, Power, and Society*. New York: Wiley Interscience.

Rothschild M. (1994). *Bionomics: Economy as Ecosystem*. Henry Holt Publishers.

Senge P. (1990). *The Art and Practice of The Learning Organization*. New York: Doubleday.

Thinking Tools/Maxis Software (1993). *SimHealth—A simulation of the United States health care system*. www.worldgame.org [A short guide for further study.]

Biographical Sketch

Medard Gabel is the cofounder and Executive Director of World Game Institute, Inc., (WGI), a twenty-six-year-old independent, nonpartisan, not-for-profit research and education organization. Inspired by the pioneering work of Buckminster Fuller, the Institute is today an officially sanctioned Non-Governmental Organization of the United Nations. The World Game Institute is both a think tank concerned with the processes of globalization, global resources, human trends and needs as well as a developer of innovative and experiential educational products and programs.

As director of research at WGI, Gabel has written numerous reports and books about the state of the world. Among these are four books on global problems, planning methodology, and the US food system. His book, *Energy, Earth and Everyone* (Anchor Books/Doubleday), the first edition of which was published in 1975, was the world's first comprehensive inventory of the entire planet's renewable energy resources; it also presented a series of regional plans and a global plan for phasing out nuclear and fossil energy use and making the transition to a renewable-energy-based hydrogen economy that reduced global warming. *Ho-Ping: Food for Everyone* (Anchor Books/Doubleday) was the first comprehensive inventory of the entire planet's food production capacities and presented the possibilities for sustainable agriculture

to meet the growing food needs of the entire world; it also contained a series of regional plans and a global plan for phasing in a sustainable food system that eliminated famine, hunger, and malnutrition. *Empty Breadbasket* (Rodale Press) was an investigation of the US food system, its vulnerabilities, strengths, and what the consumer, farmer, city, state, and federal government could do to increase the sustainability and quality of America's food supply. All of these books were reviewed favorably, sold out their printings and were used as supplementary texts in numerous colleges. Mr. Gabel has also published many articles on African agricultural systems, food, energy, and planning in a variety of journals, magazines, and books.

Mr. Gabel has also directed the development of three computer software applications—an interactive atlas program called *Global Recall*, a statistical database program called *Global Data Manager*, (the latest version of which contains the world's largest collection of socioeconomic and environmental statistical indicators ever collected), and the Internet-based global simulation *NetWorld Game* (which is the world's first Internet-based interactive global problem-solving tool).

Mr. Gabel has been a consultant to the US State Department, Department of Agriculture, Department of Energy, USAID, the governments of Tanzania, Costa Rica, and The Netherlands, and the Governor's Energy Council of Pennsylvania. He has lectured and given workshops at more than one hundred universities, including Harvard Business School, Yale, Princeton, and the Universities of Pennsylvania, Colorado, and Southern California. Mr. Gabel regularly designs and conducts workshops on globalization for executives from Motorola in their Global Institute for Managers and for various divisions of General Motors, including GM Mexico, GMIO, GMNAO, GM Delphi, GM Powertrain, and GM Public Policy Center. He has also designed and delivered similar programs to executives or government leaders at the United Nations, the World Bank, the US Congress, The Japan Junior Chamber of Commerce, YPO, and at IBM, British Airways, DuPont, Cigna, Astra-Merck, Chase Manhattan, AT&T, MasterCard, Rohm and Haas, American Express, BellSouth, CompuServe, Batelle, ChemAbstracts, OCLC, Detroit Edison, and more than 20 other corporations.