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Record Group/Collection: George H.W. Bush Presidential Records
Collection/Office of Origin: Science and Technology Policy, Office of (OSTP)
Series: Bromley, D. Allan, Files
Subseries: International Files - Country Files

OA/ID Number: 62066
Folder ID Number: 62066-003

Folder Title:
International: Japan [3 of 3] [1991]

Stack:

Row:

Section:

Shelf:

Position:

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Withdrawal/Redaction Sheet

(George Bush Library)

Doc. No. / Type	Subject/Title	Date	Restriction	Classification
01. Memo	William D. Phillips to D. Allan Bromley Re: Comments on Letter from Mary Good of Allied Signal (2 pp.)	7/29/91	P5	
02. Letter	Richard T. McCormack to Allan Bromley Re: Semiconductors (1 pp.)	4/9/91	(b)(1)	
03a. Letter	D. Allan Bromley to Michael Armacost Re: Japanese Support for Research (2 pp.)	4/23/91	(b)(1)	
03b. Letter	Michael Armacost to D. Allan Bromley Re: Japanese Support for Research (2 pp.)	3/22/91	(b)(1)	

Page 1 of 1

Collection:

Record Group: Bush Presidential Records
Office: Science and Technology Policy, Office of (OSTP)
Series: Bromley, D. Allan, Files
Subseries:
WHORM Cat.:
File Location: International: Japan [3 of 3] [1991]

Pinksheet Number: BH336
OA/ID Number: 62066-003
Date Closed: 11/2/2000
FOIA/Sys Case #: 1999-0582-F
Re-review Case #: 2005-0336-F
P-2/P-5 Review Case #:

"CORRESPONDENCE TRACKING"

TYPE: INFORMATION

DOCUMENT NUMBER: 9123514

ORIGINATOR: 02

STATUS C

DIRECTORATE STATUS

FROM: TANABU, Masami: MEMBER, HOUSE OF REPRESENTATIVES, JAPAN.

TO: DR. D.A. BROMLEY

DATE OF
CORRESPONDENCE: 08/09/91

SUBJECT: EXPRESSES APPRECIATION FOR DR. BROMLEY'S
HOSPITALITY. WISHES TO HELP BUILD COOPERATION ON
POLICIES ADDRESSING THE GLOBAL ENVIRONMENT.

DIRECTORATE STAFF
ASSIGNED: ASSIGNED:

ACTION STAFF
REQUIRED: ACTION:

SENDER'S DUE DATE:
OSTP DUE DATE: STAFF DUE DATE
DATE COMPLETED: DATE COMPLETED/DEPT:

COPIES TO: D. Allan Bromley
INTERNATIONAL/POLICY
ENVIRONMENT

WHITE HOUSE TRACKING #: CONTACT PERSON:
REMARKS: PHONE: EXT:

OSTP RECEIVED: 08/19/91
DEPT RECEIVED:

FILE: P-INTERNATIONAL-JAPAN

LIBERAL DEMOCRATIC PARTY

TOKYO, JAPAN

August 9, 1991

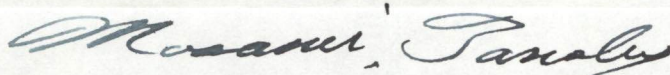
Dear Mr. Bromley:

I would like to express my deep appreciation for the heart-warming hospitality you extended to me the other day. I found it quite useful and meaningful to exchange views with you on environmental policies.

Fundamentally, it is impossible for any country by its individual efforts alone to hand on this beautiful, green planet of ours to the next generation. I wish to work closely with you in building cooperation on policies addressing the global environment.

Allow me to close by expressing my best wishes for your every success and the hope that cooperation between us will develop even more in the future.

Sincerely yours,



Masami Tanabu
Member, House of Representatives
Liberal Democratic Party

"CORRESPONDENCE TRACKING"

TYPE: ACTION
ORIGINATOR: 02

DOCUMENT NUMBER: 9122687
DIRECTORATE STATUS

STATUS D

FROM: GOOD, Mary L.: ALLIED SIGNAL

JUL 25 1991

TO: DR. D.A. BROMLEY

DATE OF
CORRESPONDENCE: 07/22/91

SUBJECT: A COPY OF THE ARTICLE, "SCIENCE RIVALRY, FOREIGN
'INVASION' SPARKS DEBATE" AND THE QUESTION OF
WHIETHER THIS IS A TOPIC PSAC AND NSB SHOULD
ADDRESS.

DIRECTORATE
ASSIGNED: INDUSTRIAL

STAFF
ASSIGNED:

ACTION
REQUIRED: FOR DAB'S SIGNATURE

STAFF
ACTION:

SENDER'S DUE DATE:
OSTP DUE DATE: 08/06/91
DATE COMPLETED:

STAFF DUE DATE
DATE COMPLETED/DEPT:

COPIES TO: D. Allan Bromley
INTERNATIONAL/POLICY

WHITE HOUSE TRACKING #:

CONTACT PERSON:
PHONE:

EXT:

REMARKS:

CLOSED

OSTP RECEIVED: 07/25/91
DEPT RECEIVED:

FILE: P-INDUSTRIAL*INTERNATIONAL-JAP

"CORRESPONDENCE TRACKING"

TYPE: ACTION DOCUMENT NUMBER: 9122687
ORIGINATOR: 02 STATUS D DIRECTORATE STATUS

FROM: GOOD, Mary L.: ALLIED SIGNAL

TO: DR. D.A. BROMLEY

DATE OF
CORRESPONDENCE: 07/22/91

JUL 26 1991

SUBJECT: A COPY OF THE ARTICLE, "SCIENCE RIVALRY, FOREIGN
'INVASION' SPARKS DEBATE" AND THE QUESTION OF
WHIETHER THIS IS A TOPIC PSAC AND NSB SHOULD
ADDRESS.

DIRECTORATE STAFF
ASSIGNED: INDUSTRIAL ASSIGNED:

ACTION STAFF
REQUIRED: FOR DAB'S SIGNATURE ACTION:

SENDER'S DUE DATE:
OSTP DUE DATE: 08/06/91 STAFF DUE DATE
DATE COMPLETED: DATE COMPLETED/DEPT:

COPIES TO: D. Allan Bromley
INTERNATIONAL/POLICY

WHITE HOUSE TRACK] 7/26
REMARKS:

OSTP RECEIVED: 07/
DEPT RECEIVED:

AL-JAP

*Blue Phillips
Gene Wong
Tom Etkin for
Comments Please
JES*



Mary L. Good
Sr. Vice President
Technology

RECEIVED

2087
Allied-Signal Inc.
P.O. Box 1021R
Morristown, NJ 07960-1021
Telephone (201) 455-4729
Fax: (201) 455-2956

91 JUL 25 A 9:12

July 22, 1991

OFFICE OF THE
DIRECTOR

The Honorable Allan Bromley
Special Assistant to the President
The White House
360 Gold Executive Office Building
Washington, DC 20506

and

Dr. Walter Massey, Director
National Science Foundation
1800 G Street, NW
Washington, DC 20550

Dear Allan and Walter:

The attached article is one of the clearest descriptions of the new Japanese technology wave I have seen. The potential in these Centers is enormous. Do you think this is a topic PSAC and NSB should address at some point?

Sincerely,

Mary L. Good
Mary L. Good

MLG/jr

Enclosure

P.S. Note the emphasis on fifth generation computers and software development — areas where the Japanese need competitive technology.

Newark Star Ledger - Monday, July 15, 1991

SCIENCE RIVALRY

Foreign 'invasion' sparks debate

By KITTA MacPHERSON

There are new players on the New Jersey science scene with technical savvy and financial clout, the hallmark of those with staying power.

With corporate backers that hail from countries like Japan and

STAR-LEDGER
SPECIAL REPORT



— Second of a series —

Germany, these new, multimillion-dollar research and development centers are the talk of the state scientific community. The questions concern the science that will be pursued at the centers and whether "American" resources like scientific brainpower should be shared with foreign concerns in a competitive global marketplace.

Given ample funding and a long-term commitment by their corporate sponsors, research executives at many of the sites said they are modeling their efforts on AT&T Bell Laboratories, the world-famous industrial research laboratory in Murray Hill, pursuing basic research that will someday pave the way for new technologies.

Among some of the newest arrivals to the state's research and development scene is the NEC Research Institute in Princeton, a \$25 million research facility that opened two years ago, which will be a center for a team of scientists who will pursue investigations in fundamental areas of physics and computer science to expand the world's knowledge of computers and communications. Hitachi America Ltd., a wholly owned

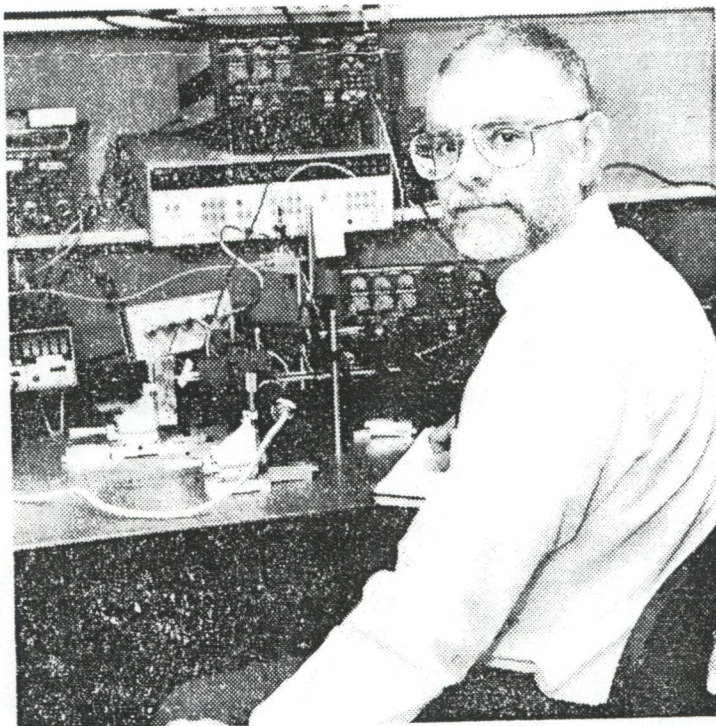


Photo by Jack S. Kanthal

Richard Linke, a senior scientist at the NEC Research Institute in Princeton

subsidiary of Hitachi Ltd. in Japan, said last month that it would open an advanced TV and systems laboratory in Princeton in early July. A laboratory to develop computer software and graphics, already operating on Nassau Street in downtown Princeton, known as the Matsushita Information Technology Laboratory, will be formally dedicated in opening ceremonies in the near future, according to company officials.

Matsushita, the parent company of Panasonic, Technics and Quasar brands, also opened its Ap-

Please turn to Page 5

Foreign 'invasion' in research sparks a debate

Continued from Page One

TOMORROW: Complex science

plied Research Laboratory in Burlington last year to study advanced television technologies. And Siemens, the German telecommunications company, opened its \$16 million research and development center in Princeton in 1988.

Depending on who is doing the talking, the action by the foreign companies represents either an obnoxious raid on American basic research talent, recognized as the best in the world, or a pleasant expansion of the New Jersey and, therefore, American research and development community. Much of the criticism is focused on the Japanese companies because of trade tensions between the U.S. and Japan.

"The future belongs to those who get the science and develop the science as high technology," said Leonard Minsky, executive director of the National Coalition for Universities in the Public Interest, a Washington-based advocacy organization. "We are talking about control of the world because that will belong to the country that controls high technology. Everybody in the world understands that. Only Americans are willing to give high technology away to their most competent competitor. And I mean give away."

The ancient model of scientific progress, in which scientists collect information, share it and thereby produce new knowledge, is being impaired, Minsky believes, by the fact that most Japanese companies do not give Americans reciprocal access to their basic research.

"They are not as stupid as we are," said Minsky, noting that the foreign-owned research divisions in New Jersey probably will not get much technical information from the foreign parent corporation. "All the research in Japan is not shared; it's a one-way street. They do most of their basic research in industry, not universities, so it is all proprietary. Their trade policies are one-way trade policies benefiting them. And they are hiring American scientists trained in all the disciplines in which America holds the leading edge."

But research executives at some of the firms, along with scientists working there, believe that such views are unfair and that they are playing the game fairly and the American way—by openly publishing their research and competing for talent.

"I'm here and I'm doing research, I am talking to American scientists and

I am publishing in American journals," said Richard Linke, a physicist who joined NEC after a 17-year career with Bell Labs in Holmdel. "What do people want? I don't understand the complaint."

In fact, by establishing such elaborate research centers replete with expensive equipment and high-paying jobs, parent companies of such American concerns do contribute to the American economy and scientific advancement, Linke believes. "It doesn't matter whether I am doing this work here or at Bell Labs, and believe me, Bell Labs worries about this too," Linke said. "If I do the work and I insist on publishing because that's what scientists require, it's entirely possible that NEC could pick up on that idea and develop it. But it's equally possible that AT&T could pick up on it and develop the work that I do here."

Linke said he understands the fear some Americans have when they see the success of Japanese car and consumer electronics companies, but he blames American industry for failing to spot whatever the success quotient should be and implement the strategy. "I think what I am doing is I am creating new knowledge and publishing it for the world to see and evaluate," Linke said. "If NEC picks up on it and does something with it, it will be better for the world. If everybody picks up on it and does something with it, so much better for the world."

Linke is not alone in his views in the scientific world. Many New Jersey scientists said they believe that such competitive concerns belong in the political realm of policy debates. "I tend to take an internationalist view of science," said Sam Treiman, a professor of physics at Princeton University. "I would like an open society here and I would like others to be open, too."

Some of the state's newest corporate neighbors are unabashed in their belief in the quality of American researchers and their ambitions to hire only the best. Princeton's Richard Lipton, a professor of computer science and one of the world's leading thinkers in the field, is taking a year's leave of absence from the university to head up Matsushita's computer science laboratory, which is located a stone's throw from the campus.

Dawon Kahng, president of the NEC Research Institute, is a Korean-born electrical engineer and physicist who had a distinguished career at Bell Labs from 1959 until his retirement in 1987. Kahng, who has set his sights on hiring about 60 scientists for the NEC lab, has already recruited 30, all from top institutions like Bell Labs, Princeton, MIT and Harvard University.

"The pool that we are selecting from is pretty much across the country; we are not just selecting people from New Jersey," said Barbara Curran, controller for finance administration at the NEC research unit. "We want nationally prominent people and it certainly doesn't hurt to say we are in Princeton."

The state's leadership in research and development—particularly because of the international reputation of places like Bell Labs, Bellcore in Livingston, the David Sarnoff Research Center in Princeton, Princeton University and the Institute for Advanced Study in Princeton—made it a natural place to settle, many said. "It's almost as though how could you go anywhere but Princeton?" Curran said.

Akira (Adam) Yokoi, vice president for technology at Matsushita Electric Corp. of America in Secaucus, said his company weighed hundreds of factors and studied the American research community very closely before deciding to base the software lab at Princeton. There was one statistic that immediately turned the tide.

"New Jersey is still highest in the number of inventions or patents produced," Yokoi said. "When you think of inventions, you may think of Silicon Valley or Boston. But it's not true. A lot of people don't know it, but New Jersey still has the highest invention rate of all the states for its total number of patents."

Yokoi's ambitions for the Princeton lab are decidedly immodest. A large investment made over the long term, he believes, could produce the world's next revolutionary high-tech product. "Matsushita has to make an investment for the future," Yokoi said. "Now we are making CDs and radios, but how about our future? People are always looking for something new, something better, something cheaper."

There is always an element of risk, he said, since there is no guarantee that a given research path will produce a product and there is always a certain amount of selling researchers have to do with corporate superiors to justify an expense. In what Yokoi describes as a "bottom line" management style, the scientists who will be doing the research come up with a proposal saying how much money they will need.

"We don't just say, 'Here's \$10 million and you examine the problem,'" Yokoi said. "That may be too small; it may be too big. The scientists and engineers who are doing the work know the best way to do it. They have to come up with the idea, how many years, how much money. Then top management will judge."

Yokoi's firm is also not interested in recruiting droves of scientists, just a few of the best ones. "Research is not like digging a tunnel where the more people you have the faster you can make the tunnel," Yokoi said. "It's about the power of the brain."

The Princeton lab, the country's eighth American research center, will focus on the development of improved computer graphics, document processing and software, areas where Yokoi said American basic research excels. Initial plans call for a staff of 20, a figure that will increase to about 60 by March 1993.

Under the lab's incentive system, scientists will be judged by how many papers they publish, Yokoi said. Though the company will own the patents produced by employees, a standard arrangement for corporate research activities, Yokoi said he doesn't expect the lab to produce many of them.

"Richard Lipton is a research scientist studying advanced computers and software whose work is so advanced we have to look five or eight years down the road," Yokoi said. "He is not developing some box we can talk about. He has lots of ideas. He is working intensively so that he can come up with something. He can't describe what. We are willing to wait for that. Something as revolutionary as a VCR could come out of this."

Part of the reason that new corporate research outfits are meeting with such success in their recruiting drives, scientists said, is that American companies for years have been cutting back on research spending.

At the NEC Research Institute, all scientists hear about is the long view, Linke said.

The research center is located in the top floor of a four-story concrete-and-glass office building owned by NEC on Independence Way off Route 1. A fountain spurts in a pond nearby, and

workers looking dreamily out an eastern window can spy NEC's brand-new volleyball court for employees. It was built at Linke's request after he became the first scientist at the institute to file a patent application. Eventually, the entire building will house research scientists, but for now, it houses other corporate tenants.

The center is dedicated to basic research without requiring a direct connection to products.

Linke, who passed up a university post to join the lab, did research in radio and X-ray astronomy at Bell Labs before moving to optical communica-

tions in 1982, his present field. "I am interested in taking advantage of what we can learn about physics to see how far we can push things."

Although his aspect of the field may sound product-oriented, he said it's not. "I am not interested in developing a better product," Linke said. "I really feel that that's not what I am good at. What I think I am good at is having a sense for which way you can push physics and which way you can't."

The new ideas introduced by such physics will influence products down the line, he said.



Barbara Curran
National talent pool



Akira (Adam) Yokoi
Cites Jersey's creativity

EXECUTIVE OFFICE OF THE PRESIDENT
OFFICE OF SCIENCE AND TECHNOLOGY POLICY
WASHINGTON, D.C. 20506

AUG 6 1991

July 29, 1991

MEMORANDUM FOR D. ALLAN BROMLEY

Sup page 2.

FROM: WILLIAM D. PHILLIPS

SUBJECT: Comments on Letter from Mary Good of Allied Signal

First off, this apparent trend or thrust of Japanese companies setting up wholly owned basic research laboratories in the U.S. should be clearly differentiated from that of establishing "institutes" around prominent academic scientists in U.S. research universities. The latter would tend to build on past, even present, U.S. source funding, largely government, and could lead to subversion of the university process.

The U.S.-based Japanese company labs are another matter. Keep in mind that a number of U.S. companies long have had laboratories in foreign countries. The discovery of high Tc superconductors was made by a German and a Swiss scientist in IBM's Geneva lab in 1986. Several U.S. pharmaceutical companies have labs in Europe. A large number of Europe-based companies maintain labs in the U.S.

I fully appreciate that the thrust of NEC, Hitachi, Matsushita, etc. is in the crucial area of computers and information management and that they are and probably will continue to pick off some of the United States' best talent from universities and industry in these areas. One question I would then raise is what value does U.S. industry put on the people that it is losing? Also, with our history of attracting foreign scientists to our university and industrial laboratories, we hardly have a leg to stand on. Clearly because of language and cultural differences, the Japanese are not going to be able to attract these scientists to Japan, at least over the next several years. They have little recourse to do anything except to establish these labs in the U.S. The scientists will stay in the U.S., continue to publish in U.S. journals and will continue to interact with their U.S. university and industrial colleagues. We have said that we want the Japanese to establish manufacturing plants and laboratories in the U.S. as opposed to having finished products exported to the U.S. Well, that's what they are doing.

What is the chance that a U.S. scientist working in the Princeton NEC Lab invent or develop something patentable that will give NEC a lock on a new area as revolutionary as semiconductors or polymers? The probability certainly is not zero, but neither is it high. The Japanese companies certainly will profit from these U.S. manned and based laboratories. However, dealing with the labs and their constituent scientists will not be a bed of roses for the Japanese parent companies. The scientists involved will be highly individualistic with a tendency to chafe under any

form of control or discipline. Their principal driving forces will be centered around scientific achievement and professional recognition, not patents.

What do we do about the developing situation? I consider this to be a very delicate matter that could easily get out of hand. Perhaps it might best be handled by asking Eric Bloch and the Council on Competitiveness to do an informal sampling of industry opinion. The CSPP group could be equally useful.

*Agued
Doh*

Bill Phillips:

Back to you. I truly believe
this kind of topic is important for the
S + T working Group to consider. Although
surituee, it is an important to share with
others in the Administration

BP

Dear Mary

Thank you for the New York Stor-
Ledges article of July 15 on the
trend of Japanese companies ^{establishing}
R&D laboratories in the U.S.

It made for interesting reading.
I passed it along to senior staff
here who will ^{clearly} have
an interest.

I appreciate your thinking of
me.

My best wishes,

A.Y. DAB

"CORRESPONDENCE TRACKING"

TYPE: INFORMATION

DOCUMENT NUMBER: 9122577

ORIGINATOR: 02

STATUS C

DIRECTORATE STATUS

FROM: SHIMAMOTO, Yoshio

TO: DR. D.A. BROMLEY

DATE OF
CORRESPONDENCE: 07/18/91

SUBJECT: A SUMMARY OF NEWSPAPER ARTICLES THAT CAN BE
CHARACTERIZED AS NIPT-RELATED AND FUZZY RELATED.

DIRECTORATE
ASSIGNED:

STAFF
ASSIGNED:

ACTION
REQUIRED:

STAFF
ACTION:

SENDER'S DUE DATE:

OSTP DUE DATE:
DATE COMPLETED:

STAFF DUE DATE
DATE COMPLETED/DEPT:

COPIES TO: D. Allan Bromley
INDUSTRIAL
INTERNATIONAL/POLICY

WHITE HOUSE TRACKING #:

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REMARKS:

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OSTP RECEIVED: 07/22/91
DEPT RECEIVED:

FILE: P-INTERNAT'L-JAPAN*P-INDUSTRIA

2577
RECEIVED

158 Donegan Avenue
East Patchogue, NY 11772

91 JUL 22 P 2: 22 July 18, 1991

OFFICE OF THE
DIRECTOR

Dr. D. Allan Bromley
Science Advisor to the President
The White House
Washington, DC 20506

Dear Allan:

The purpose of this letter is to provide you with a summary of newspaper articles that can be characterized as NIPT-related (Attachment A) and Fuzzy-related (Attachment B), that may be of interest to you. My primary source for articles up to August 15, 1990 is "Computer Digest" ("Kompyuta Daijesuto"), a monthly publication that lists by headlines approximately 3,000 articles of interest to the computer and telecommunications industries from ten dailies that appeared over a period of "a month" (the 15th of a month to the 14th of the next). Articles subsequent to August 14, 1990 were obtained from an acquaintance in New York City who unfortunately was recalled to Japan recently.

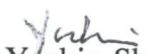
Many of the articles listed are based on company and institutional press releases. These articles are not included in the summary, unless they were considered important. Unfortunately, the full text of many articles that could have been of interest were not reprinted. These articles are denoted by (NA). Each issue of the "Digest" begins with a section called "Focus of the Month". Articles so designated are denoted by (F).

Remarks (5) and (6) of my letter to you of July 12, 1991 are based primarily, but not exclusively, on Attachments A and B. It can be said that never in the annals of MITI-initiated R&D programs has there been one that required a gestation period as long as that of the NIPT-plan, which is still in progress. For each year of its work, the Study Committee had a budget of 20 million yen. MITI's budget request for FY91 had a line for 100 million yen for a new Committee whose purpose is to "investigate how implementation of the system of 'NIPT' as an R&D program should proceed with an organizational structure that embraces international cooperative research". For starters, I hope that this Committee will reexamine and do a better job of assessing the status of the relevant fields.

With best wishes,

Sincerely,

YS:mck
Attachments


Yoshio Shimamoto

ATTACHMENT A: NIPT-RELATED ARTICLES

- (1) January 1, 1988 Nikkei Sangyo

"Surging Boom in Neurocomputing"

Based on the meeting of the International Neural Network Society held in San Diego in June, 1987, this is probably the first big story on the subject in Japan. The article discusses R&D activities in US and Europe. (The only serious activity in Japan: the bio-chip project under the "Basic Technologies for Future Industries Program".)

- (2) January 4, 1988 Nihon Keizai (F)

"Future computers that require no programming"/"Fujitsu working to put these to practical use"/"Control systems that make their own decision" (free translation)

This article states that based on the results of simulation studies, "Fujitsu is working to develop artificial brains for the controls of industrial robots by the second half of the year, and expects to have practical neuro-chips in 2-3 years". (N.B.: For the purpose of demonstrating the feasibility and utility of "learning", an essential feature of neurocomputing, Fujitsu had fabricated by May a model involving a fugitive robot, a Sherlock Holmes robot, and two Bobby robots; May 10, 1988 Nihon Keizai).

- (3) January 14, 1988 Nikkei Sangyo (NA)

"Development of Neurocomputer starts at the Institute of Physical and Chemical Research (of STA) as a part of the International Frontier Research Program"

- (4) January 26, 1988 Nihon Keizai (F)

"US leads in the development of neurocomputers"

The article was triggered by a newly created EC neurocomputer project. It mentions the government support of neurocomputers in the US (NSF and DOD) and Japan (MITI, MOE and STA). Three important current research areas are identified as (a) simulation of learning in neural networks, (b) research in neural networks with large scale parallel processors, and (c) hardware implementation of neural network models. Some organizations active in these areas are identified as follows: Johns Hopkins University, Helsinki Institute of Technology, Fujitsu, and the University of Osaka for (a), Laboratories in the US where inexpensive parallel processors are already commercialized for (b), and Cal Tech for (c).

- (5) May 23, 1988 Nikkan Kogyo

"R&D to put neurocomputer to practical use expected to be conducted as a 9-year Large Scale Project"

The article states that the project to begin next year will consist of (a) development of large scale emulators, (b) theoretical research in algorithms, (c) development of devices, (d) development of a pilot model, and (e) R&D of applications technology. (NB: It is interesting to note that expressions like "flexible information processing" and "massively parallel processing systems" that occur in the final report on NIPT are already used in this article.)

- (6) July 6, 1988 Nihon Keizai

The story covers the same subject matter as (5) above, except that it is now stated that (a) the LSP will last for 8 years with an estimated cost of 30 billion yen, and (b) in spite of the fact that the LSP will be initiated a year before the termination date of the so-called "Supercomputer Project", it will be regarded as a successor project of the latter, and will be conducted by six companies. (NB: Although not explicitly mentioned, the six are the same companies that participated in the Supercomputer Project.)

(7) October 1988 "Computer Digest"

Each issue is called a "Special Issue on X", where X denotes a topic selected for the month. For the October 1988 issue, the topic selected was "Forefront of Neurocomputer Development". This section of the issue contains ten articles on activities, both domestic and foreign, that appeared during the month, plus 15 articles that were previously listed but not reprinted.

(8) August 16, 1988 Sankei

MITI announced plans to create a Research Committee next year to study neural computing, bio-computing and optical computing with a view of creating a consolidated R&D project in these areas in 2-3 years.

(9) February 6, 1989 Nihon Keizai

MITI has decided to initiate in 1992 a project to develop a computer that is capable of flexible information processing that is similar to the human brain. In order to ease technology-friction, participation of foreign industries will be sought. A proposal to create an organization with the structure of ICOT--established for the 5th Generation computer project--is most prominent. In addition, the concept adopted for the Human Frontier Science Program also exists.

(10) September 2, 1989 Nikkan Kogyo (NA)

"MITI creates Research Committee on NIPT" (The original committee name is much longer than the final one adopted.)

(11) September 8, 1989 Nihon Keizai

"Committee on 'Right Brain' Computer (i.e. NIPT) created by MITI. R&D to begin as early as 1991"

(N.B.: It is interesting to note that Shinya Shinagawa, Professor of Physiology at Tokyo Medical College, who claims that he was the first to promote "Right Brain" computer, did not participate in any of the activities of the Research Committee.)

- (12) January 16, 1990 Nikkei Sangyo (F)

"Neurocomputers"/"(New) Impetus for development, advancing toward stage of putting to practice use"/"Succession of International Conferences"

The article points out that (1) due to the rapid advances being made in neurocomputers, six international conferences are being planned for 1990 and 1991, (2) each of the major electronics and computer companies is adopting a different approach to neurocomputing, (3) the banks, securities houses, hospitals, etc. are experimenting with new applications areas, and (4) whereas there were only about 500 Japanese researchers in this field two years ago, the number now exceeds 3,000 (comparable to the US).

- (13) February 19, 1990 Nihon Keizai

This article is on the interim report of the Research Committee of NIPT which is erroneously characterized as a firm plan to develop a "Right Brain" computer. In the summary part of the article, it is stated that MITI plans to call for world-wide participation for the proposed project, and that basic research may start as early as 1991. NIPT is regarded as the successor project to the "5th Generation Computer Project" which ends in 1992.

- (14) March 23, 1990 Nihon Kogyo

The "Superconducting Sensor Laboratory" was established with eight participating companies and investment of 5.7 billion yen (70% of which is from Japan Key-Tech Center). The laboratory, with a life of six years, will develop SQUID sensors that will be needed for basic research on the brain whose results, in turn, are required for the development of neurocomputers.

(15) April 2, 1990 Nihon Keizai

"Development of 'Massively Parallel Processing Type' active in Japan and US"/"Superior to supercomputer"

This rather vague article states that MITI intends to "introduce" in 1992 public sector/private sector cooperation in the development of massively parallel processing systems and that the possibility of kindling a new U.S./Japan technology friction has arisen. The article, however, does mention the existence of the interim report of the Research Committee on NIPT. Since the "fear of friction" issue is raised at the outset and also at the end of the article, it would appear that a project distinct from NIPT is being discussed.

(16) January 10, 1991 Asahi

In this article, which is remarkable for its clarity, it is stated that MITI will organize a study group (the same expression for study group is used in the article of June 18, 1991, cited in my letter to you of July 12, 1991) to investigate whether or not the development of the 6th Generation Computer is indeed feasible. The 6th Generation Computer is simply defined as the computer with human-like decision-making capabilities. It is further stated that "the study group will investigate the various technologies that are essential for the realization of the 6th Generation Computer and, including the promotion of international cooperation, the manner in which the R&D should be structured". The article then summarizes the failings of the 5th Generation Computer, and concludes by mentioning four technologies that are essential for the successful development of the 6th Generation.

(17) January 18, 1991 Nikkei Sangyo
February 11, 1991 Nihon Keizai

"Matsushita succeeds in developing an experimental neurocomputer that is free of electronic control" (36 optical neuron devices capable of recognizing "O", "P", and "T")

(18) March 10, 1991 Nihon Keizai

"A 10-year plan to cooperatively develop the 6th Generation Computer"

With the usual what is becoming standard description of 6th Generation Computer, this article states that MITI will initiate the project next spring. Two rather remarkable statements are made.

"MITI has been seeking the participation in the project of the industrial world and academia in US and Europe through the US government and EC."

"In addition to ATT and Siemens (implied earlier in the article as committed), IBM and other prominent companies from abroad plan to participate, joining nine Japanese companies such as Fujitsu and Hitachi."

(19) March 29, 1991 Nikkei Sangyo

This article reports on the "Report of the Research Committee on NIPT" and on an International Symposium on NIPT held on March 13-14. It states that "for a government project not to have a definite objective is unprecedented".

(20) April 4, 1991 Nikkei Sangyo

"Interested in Research on 'Massively Parallel Type' System"

Story based on interview with Dr. D. Waltz (?) of Thinking Machines. He is extremely interested in participating in the "6th Generation Computer" plan, but is concerned about questions on how intellectual properties will be handled.

(21) May 2, 1991 Nihon Keizai

"MITI to study commercialization (yes, you read it correctly!) of 6th Generation Computer"

"In anticipation (original -- 'facing') of the development of the 6th Generation Computer, MITI will begin, with July as a target date, a feasibility study on the commercialization of the 6th Generation Computer. Initially the Ministry and domestic companies will cooperate and examine (investigate) the functions that can reasonably be expected to emerge (original -- 'achievable functions'), and forecast for demands (for these functions?) in 10 years. Furthermore, after the participation of American and European industries have been secured, details on the manner in which to allocate research responsibilities will be worked out (literally, 'will be filled'). Thereafter, it is expected that the Japan/US/Europe cooperative development will begin in the spring of next year."
(full text)

(NB: I have also seen listed in a publication that has a very short "news" section (by headlines only), an article in the February 7, 1991 edition of Denpa that makes reference to "feasibility study on commercialization".)

(22) May 22, 1991 Asahi and Nikkan Kogyo

"US government protests to Japanese government for going over its head"

(Identical news on the "Washington Post article" of May 21 via Jiji News Service.)

(23) and (24) These articles are mentioned in my letter to you of July 12, 1991.

ATTACHMENT B: FUZZY-RELATED ARTICLES

- (1) December 15, 1986 Nikkei Sangyo

Perhaps the earliest mention of fuzzy logic in the Japanese press. The article reports that Hitachi has implemented some ideas suggested by fuzzy logic in the control of the newly created subway system in Sendai City.

- (2) June 19, 1987 Nikkei Sangyo (NA)

"Japan ahead of US in fuzzy"

- (3) April 30, 1988 Nikkan Kogyo (NA)

"MITI to create (as early as next month) a study group on the application of fuzzy logic in the development of advanced control technology."

- (4) June 9, 1988 Nihon Keizai

"Fuzzy Computer to be developed cooperatively by 30 firms representing different industries (in March next year)."

- (5) July 22, 1988 Denpa (NA)

"An advisory Fuzzy Study Group is established at the Science and Technology Agency."

- (6) August 30, 1988 Nikkei Sangyo (F)

"Three facts became evident at an international workshop on applications of fuzzy systems: the emergence of full-scale dedicated fuzzy equipment and devices; the trend to combine fuzzy and neural capabilities; and the increase in the application areas of these systems."

- (7) August 17, 1988 Nikkei Sangyo

"Details on the creation by MITI of the Laboratory for International Fuzzy Engineering Research (LIFE) next year with investments from both the government and private sector became clear." (44 participating companies with a five year budget of 5.47 billion yen of which 3.83 billion yen (70%) is expected from the government's Japan Key-Tech Center.)

- (8) January 10, 1989 Nihon Keizai

"Decision was made by MITI to create LIFE. 42 participating companies will invest 4.2 billion yen in the 6-year project. Originally an investment of 3.8 billion yen was expected from the Japan Key-Technology Center. However, due to the Center's budgetary situation this additional investment will not be forthcoming."

"MITI is expected to issue guidance on the results (intellectual property rights) which will stipulate that copyrights of the software developed will belong to the Laboratory, but algorithms developed are to be released to domestic and foreign users at no cost."

- (9) June 7, 1989 Nihon Kogyo

A report on future directions of fuzzy systems by the Fuzzy Study Group was submitted to the Science and Technology Agency. The report identifies six areas that should be promoted at this time. As a means of promoting these six areas, it is proposed that a nation-wide (research?) burden be clarified and a long-range unified research program be pursued. "It is expected that the report will act as the basic document of fuzzy research in Japan, and (its findings) will be reflected in (the Agency's?) long-term budget requests."

- (10) July 18, 1989 Nihon Keizai

A new study group headed by Prof. Michio Sugano of Tokyo Institute of Technology will be created as early as September to plan for the implementation of the Fuzzy Study Group proposal submitted to STA in June. (A 5-year plan with a budget of 1 billion yen and 20 organizations.)

- (11) September 7, 1989 Nihon Keizai (F)

"Introduction (Use) of Fuzzy Technology Moves Forward"

This article gives examples of how fuzzy technology is being used by the vendors in their products and how they are being used by the consumers.

- (12) January 18, 1990 Denpa (NA)

"STA and MITI, having resolved their differences (literally, 'having had their bout') on basic research on an engineering application of fuzzy theory, full-scale (government funded fuzzy?) research projects (can proceed?)."

- (13) March 9, 1991 Nikkan Kogyo

This article states that in order to promote the dissemination and awareness of fuzzy, MITI has announced that the name of the "AI Promotion Center" at the Japan Information Processing Development Center (JIPDEC) will be changed to "AI Fuzzy Promotion Center" in April. Full-scale fuzzy-related activities (sponsoring lectures and symposiums, collection and distribution of fuzzy-related literature, etc.) at the Center will commence next year. The main event planned for next year will be a three-day International Fuzzy Engineering Symposium. (NB: JIPDEC was responsible for the 3-year study which preceded the creation of the 5th Generation Computer project. More recently it hosted the International Symposium on NIPT '91.)

EXECUTIVE OFFICE OF THE PRESIDENT
OFFICE OF SCIENCE AND TECHNOLOGY POLICY
WASHINGTON, D.C. 20506

August 9, 1991

TO: D. ALLAN BROMLEY
FROM: EUGENE WONG EW
SUBJECT: Yoshio Shimamoto's Summary of Newspaper Articles on NIPT and Fuzzy

This is an interesting document. Yoshio Shimamoto has provided a comparison between the English and Japanese versions of MITI's report on New Information Processing Technologies project (NIPT) and noted some subtle, but probably deliberate, differences. He also reports a less than enthusiastic press reaction to the MITI initiative, specifically a newspaper editorial denouncing MITI for practicing industrial policy!

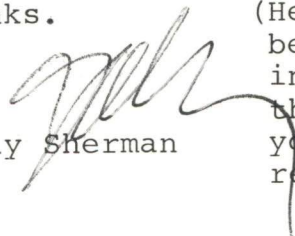
Shimamoto should be encouraged to continue his interest in the 6th Generation computing project.

Attachment

8/26/91

Mary, these were in Dr. Wong's wastebasket, and I thought I would forward these to you for central files for DAB. I think, tho', that Dr. Wong's comment to DAB only concerns 9122577.

THanks.


Sally Sherman

(He had discarded these because he had briefed DAB in person; however, I thought these should go to you to close out for the record.)

"CORRESPONDENCE TRACKING"

TYPE: INFORMATION

DOCUMENT NUMBER: 9122578

ORIGINATOR: 02

STATUS C

DIRECTORATE STATUS

FROM: SHIMAMOTO, Yoshio

TO: DR. D.A. BROMLEY

DATE OF
CORRESPONDENCE: 07/12/91

SUBJECT: CONCLUSIONS AND COMMENTS ON THE COMPARISON BETWEEN
THE ORIGINAL AND ENGLISH VERSIONS OF MITI'S "REPORT
OF THE RESEARCH COMMITTEE ON NEW INFORMATION
PROCESSING TECHNOLOGY".

DIRECTORATE STAFF
ASSIGNED: ASSIGNED:

ACTION STAFF
REQUIRED: ACTION:

SENDER'S DUE DATE:
OSTP DUE DATE: STAFF DUE DATE
DATE COMPLETED: DATE COMPLETED/DEPT:

COPIES TO: D. Allan Bromley
INTERNATIONAL/POLICY
INDUSTRIAL

WHITE HOUSE TRACKING #: CONTACT PERSON:
PHONE: EXT:
REMARKS:

CLOSED

OSTP RECEIVED: 07/22/91
DEPT RECEIVED:

FILE: P-INTERNAT/L-JAPAN*P-INDUSTRIA

2578

RECEIVED

Yoshio Shimamoto
159 Donegan Avenue
E. Patchogue, NY 11772

91 JUL 22 P 2: 22

July 12, 1991

OFFICE OF THE
DIRECTOR

Dr. D. Allan Bromley
Science Advisor to the President
The White House
Washington, DC 20506

Dear Allan:

I have compared the original and English versions of MITI's "Report of the Research Committee on New Information Processing Technology" as requested, and my conclusions, together with some additional comments, are given below. It was my intention to incorporate into this letter a summary of NIPT-related newspaper articles known to me from which you can gain some insight into the rather confusing "administrative history" of events (or more correctly, screw-ups) that have preceded the present NIPT situation. Unfortunately the task of compilation is as yet incomplete, and the summary will be sent to you at a later date.

At the outset it should be mentioned that, while it is dangerous to draw inference from the document in question and that the Committee undoubtedly has a longer wish list for its proposed international cooperation, for your purpose, there appears to be exactly one explicitly stated bottom line that is embedded in a paragraph on page 37. A slightly more faithful but not prettier translation of this paragraph is as follows:

"Furthermore, optical technology is expected to be the generic technology that will sustain the advanced information-based society of the 21st century, ranging from information network to information processing, and its balanced development is being sought. However, R&D in this area is still at an elementary (basic) stage. Furthermore, it is said that, in optical technology, mutually complementary technological balance is maintained in Japan, the United States and Europe, and hence it is a promising theme for international cooperation. For these reasons, it was concluded that optical computing and optical devices are at the cutting edge (literally, "especially important point of incision"!) of new information processing technology, and a working group was created for an in-depth study (of these areas)."

For the purpose of comparison, a draft copy of the English version, obtained from George Lindamood of the Gartner Group who obtained his copy at the Electrotechnical Laboratory on May 27, 1991, was also examined.

(1) As I already mentioned in my short note to you of June 19, 1991, except for the absence of the rosters of the subcommittees and working groups, the English version is complete. Unfortunately, correct reading of Japanese names is an art acquired only by meeting many Japanese, and I am unable to provide you with a correct Romanized version.

(2) There are ample indications that the task of translation was undertaken by individuals involved with the study, or their underlings. The quality of the translation is not as bad as I had originally feared; however, the original is not free of the use of vague expressions, of which there are many in Japanese, and this fact coupled with the creation of new cute expressions, produced, in some cases, comical results. As an example, one of the slogans introduced is an expression that literally translates into "information processing that is (much) closer to humans". In Chapter 4 of the draft, this expression is translated as "more humanistic information processing", which was changed, but not consistently, to "more humanized information processing", while in Chapter 6, "more human-like information processing" is used. Thus, internal consistency was not an aim of the translation. However, there was an important exception which is discussed in (5) below.

(3) There exist in the original many statements that are made with varying degrees of caution, such as "It is believed that", "will probably", "we believe", and the like. Throughout the translation, more often than not, these soft statements are expressed as solid facts, and the possibility exists that these statements can be misconstrued.

(4) With the foregoing warning, and bearing in mind that the quality of translation is highly dependent on the clarity of the original, the translations from Chapter 6 onward appear to have been attempted with a view of rendering literal reading of the original. The attempts are not always successful for good reason, but even the failures more or less convey the intent of the original. In Chapters 4 and 5, some liberties are taken and the format of the original is not preserved; however, the damage done appears to be minimal.

The above comments, however, do not apply to Part I of the report. Here I can only say that half-assed ideas expressed with the use of concepts not fully understood even by the author(s) deserve half-assed translations. As an example, the statement is made that the system of networks is analogous to the physical concept (not explicitly stated) of "fields" which is translated as "platform". One can also question the competence of the translator who thinks that the good Japanese-English "HANDEKYAPPU" (handicap) is a good Japanese word and translates it as "difficulties". Need I say more?

(5) In 1965 Lofti Zadeh came forth with his idea of how to handle fuzzy sets. For some years, we had good laughs at his expense. Today, however, people are making money by using his fuzzy logic. As far as I am aware, the word "fuzzy" made its first appearance in the Japanese press on December 15, 1986. On that day, Nikkei Sangyo Shinbun carried a story on the implementation of ideas suggested by fuzzy logic by Hitachi in the control of the newly created Sendai City subway system. Since then, MITI was so convinced with the importance of fuzzy logic that it even led the industry in the creation of LIFE (see Attachment A for LIFE and other fuzzy-related stories). Eight of the twelve members of the Research Committee from the private sector are officials of companies that are participating companies of LIFE (so also are IBM Japan and Thomson Japan). Fuzzy is coming to be so important in Japan that there was even a jurisdictional fight over it between the Science and Technology Agency and MITI.

"Fuzzy" is translated into Japanese as "aimai", the use of which is unavoidable in the final report. In the official English version, "aimai" is translated as "ambiguous", and a few instances of the use of "fuzzy" in the draft have been sanitized. In the original, I was able to detect the Japanese-English "FAJI" (fuzzy) used exactly once (Page 60 of the translations). It would thus appear that a deliberate effort was made to minimize the use of the word in the translation.

Since Fuzzy Logic now plays an important role in the Japanese AI world, fuzzy-related articles will be included in the summary.

(6) It is known that a study group on bio-computing, headed by Shun-ichi Amari of the University of Tokyo, was created by MITI's Industrial Electronics Division in 1984 (see cover of the report and Attachment B). At that time, R&D on bio-computing was already being considered as a candidate to succeed the 5th Generation Project. When I was in Tokyo with Rick Weingarten of OTA in December, 1988, I asked the Division for reports prepared by the study group which I knew existed. The request, however, was denied on the grounds that they were privately produced and not available to the public. It was announced in May, 1988, that a Large Scale Project (LSP) on neural computer will be initiated in 1989. Whereas LSPs are managed by MITI's Agency for Industrial Science & Technology (AIST), the 5th Generation Project is not. Furthermore, there are other projects initiated and managed by Divisions within MITI proper. Thus, one could surmise from the announcement that internal conflict existed within MITI at that time. On the other hand, while details are not available, the language used (by the press) to explain the primary objectives of the announced LSP is almost identical to that used in the report of the Research Committee, however, with the absence of two major components, optical technology (computing) and international cooperation.

For reasons that will never be known to the outside world, the announced LSP did not materialize. (Delivery of a pilot model at completion date is a requirement demanded by the Ministry of Finance for any LSP. The uncertainty that this obligation can be fulfilled could well be one of the reasons.) On the other hand, it would be safe to conclude that what one reads in the final report of the Research Committee is not the product of a two-year study, but the result of a planning that started as early as 1984.

In addition to the above, two newspaper articles of recent origin may be of interest to you.

- (a) On June 18, 1991, Nihon Kogyo Shinbun carried an article, the relevant parts of which are translated as follows:

"MITI announced on the 17th that it plans to create a technical study group (literally "examination or investigating committee") soon to promote and to embark on a full-scale feasibility study of NIPT-related R&D. Following (literally "treading on") the results of a two-year study, preparations will be made for the implementation stage (of NIPT) to begin next year by examining how the R&D should proceed and the possibility of international cooperative research. The group that will conduct the feasibility study (FS) will consist of a wide range of experts (specialists) from the government, industry and academia, and it is expected that it will be organized as early as this summer."

"Recognizing the fact that cooperative relationships with interested organizations abroad are essential to an R&D effort of the type envisioned, it is planned to carry out exchange of ideas by dispatching survey teams to the U.S. and Europe on the one hand, and inviting interested parties from abroad to international workshops on the other."

"It is expected that with a full-scale feasibility study, the direction of R&D on NIPT, including the feasibility of international cooperative research, will be clarified."

- (b) For five weeks beginning May 27, 1991, articles on a Monday column of Nihon Keizai Shinbun, called "Next Stage", carried the subtitle "6th Generation Computer". The series of five articles concluded on June 24 (a contribution by the Editor of Nikkei AI) with some biting comments. Some examples:

"After ten years and an expenditure of 50 million yen, it is now almost certain that the '5th Generation Computer' plan will not live up to expectations. Will the so-called '6th Generation Computer' plan make up for the failure of the '5th Generation' and give birth to a computer with new ideas in its stead? Neural computer clearly is a step in the right direction. However, we like to stress that this is not (to be pursued) as a national project."

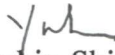
"Japan's National (bureaucracy-led) projects were effective only for the purpose of catching up with the U.S. and Europe. When the domestic computer industry tries to give birth to a new idea or technology, such as the '5th', it fails. What we should bear in mind is that R&D is most effective when it is left to the competition within the industry."

"If business possibilities in the 21st century exist, then even if risks are involved, the present day companies have the strength to individually undertake research; in fact some of the more prominent companies are already doing so. It can be said that to the industry, national projects are 'unnecessary interference'. The number of individuals in the industry who think that, if things are left as they are (due to problems viewed as one of organization?), the '6th' will end in failure, is by no means small."

I regret the delay in getting out the comparison, but hope that you will find some of the above useful.

With best wishes,

Sincerely,


Yoshio Shimamoto

YS:mck
Attachments

A Crisp Look at the Fuzzy Buzzword

Tempting as it is, we will try to resist "fuzzy" puns in this look at Japan's latest techno-fad. As shops across the nation sprout fuzzy fridges, air conditioners, washing machines and vacuum cleaners, journalists and copywriters have exploited every corny quip imaginable. The verbiage threatens to obscure what promises to be a useful approach to solving all sorts of sticky technological problems.

First, for those who are still unclear on fuzzy theory and how it applies to today's technology, a quick catch-up.

"Fuzzy logic" is an offshoot of modern mathematical theory first put forward by Professor Lofti Zadeh of the University of California at Berkeley in 1965.

Departing from the ordinary true/not-true precision of ordinary mathematics, "fuzzy logic" allows descriptions of events and conditions in the vague ways that humans see them. "A little more," "too hot" and "almost round" are all pretty simple concepts to us, but they're incomprehensible in the black/white, yes/no world of digital control computers. With fuzzy systems, however, computers can be trained to "see in shades of gray," paradoxically making them more precise, flexible and efficient.

Members of the Fuzzy Set

The theory isn't as vague as it sounds. The basic concept is the "fuzzy set," as opposed to the conventional "crisp" mathematical set. A crisp set is sharply defined; an object is either a member of the set or not. In a fuzzy set, the transition from membership to nonmembership is gradual, and objects are assigned varying degrees of membership. Using this approach, it becomes easier to describe vague sets like "blond men" and "compact cars."

By studying human reactions and using them to assign values to objects and situations as a series of "fuzzy rules," human expertise and flexibility can be transferred to machines. Unexpected situations that cause normal systems to halt in confusion can be handled more flexibly by fuzzy systems, which also makes programming simpler and cheaper. Some systems are already outdoing their human teachers.

Over the past decade, Japanese manufacturers have begun to incorporate "fuzziness" into a succession of electronic products. The fuzzy set of experiences that guide the

gentle hands of Japan's veteran subway motormen was incorporated into an automatic braking system for the Sendai urban rail system. New washers make fuzzy decisions as to how much scrubbing clothes really need. Vacuums decide how hard to suck, and so on.

Useful gadgets like these have sparked consumer interest, but researchers are quickly moving on to bigger game.

Fuzzy the Banker

The MITI-affiliated Laboratory for International Fuzzy Engineering Research (LIFE), set up in 1989, is working on a fuzzy-logic system to assist foreign-exchange traders. The system will incorporate the expertise of veteran dealers, and respond to various financial data and news inputs with suggestions for buying or selling.

Conventional computer decision-making systems for exchange dealing are based on statistical models, and can't cope with imprecise inputs like the deliberately fuzzy statements issued by central bankers. But in the real world, it is intuitive interpretations of this kind of news that move markets. Within six years LIFE hopes to perfect a system that can combine hard and fuzzy data as well or better than humans.

Fujitsu, a major computer maker, is using a computer-aided instruction (CAI) system that employs fuzzy logic to train software engineers. Where standard CAI systems teach lessons in a fixed order, Fujitsu's can furnish instruction in the order that best suits the student.

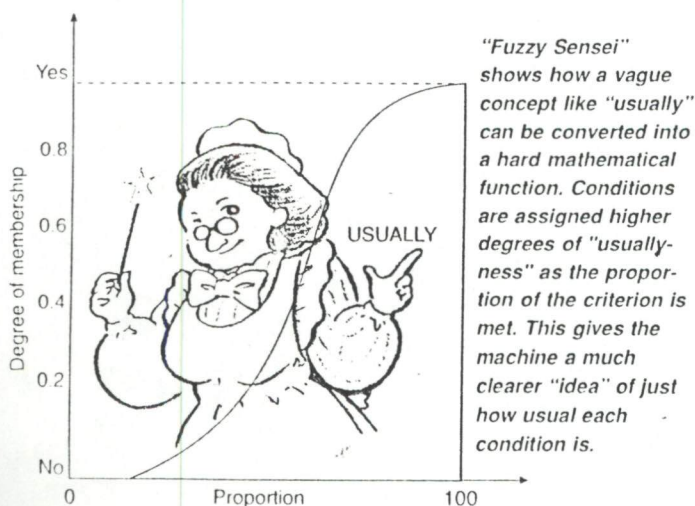
Fuzzy logic helps assess quiz results. Standard CAI systems can only decide whether the student passed or failed. Fuzzy logic allows the computer to make judgments like "she should have done better" or "he made some lucky guesses" in much the same way a human teacher might. This way, the computer can determine which concepts the student needs to study further. In some cases, the computer may decide the student knows the material despite a mediocre score; in others, the computer may believe a student was merely lucky (or cheated) and prescribe further study.

Fuzzy the Weatherman

Because many of the clues that could predict weather or earthquakes don't slot neatly into crisp sets, Japan's Science and Technology Agency has launched a five-year, ¥1-billion research project to see how fuzzy logic could help.

Meanwhile, at Kumamoto University researcher Takeshi Yamakawa has developed a computer-chip set designed to process fuzzy data faster. Yamakawa's design consists of two elements, a "rule" chip and a "defuzzifier" chip. The rule chip can handle a million calculations per second to infer correct answers from built-in fuzzy-set rules. The defuzzifier chip converts those answers into analog numbers. NASA has asked Yamakawa for permission to use his chip technology to help control docking maneuvers in the space shuttle.

But for Japanese consumers, the most famous member of Japan's fuzzy set is "Fuzzy Sensei" (teacher), a cartoon granny figure who touts Sanyo's fuzzy appliances.



SCIENCE AND TECHNOLOGY

The generation game

TOKYO

AFTER ten years and ¥60 billion (\$440m) of taxpayers' money, Japan's fifth-generation computer project—aimed at developing computers able to "infer" complete answers from half-baked questions—will soon be wound up. The collaborative project, the first in recent years to be financed entirely by the Japanese government, was conceived to help local computer firms "leapfrog IBM". But compared with the government's previous catch-up programmes for microchips and supercomputers, its attempt to nurture an infant "inference industry" has been a flop.

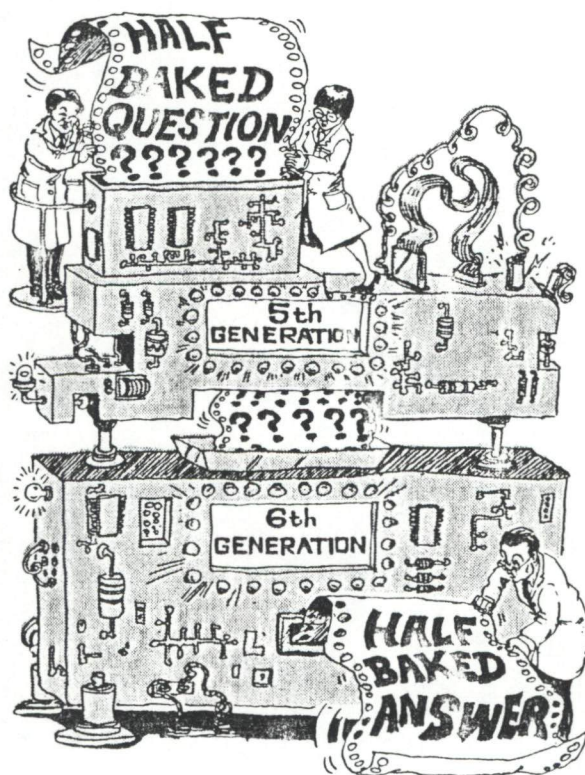
The money has not been entirely wasted. Corporate Japan has kept a foot in the door of "massively parallel" processing, allowing it to look on with understanding as dozens of young American firms with novel computing inventions have scampered off through the doorway and down various passages. More important, the 100 or so computer scientists assembled over the past decade at the Institute for New Generation Computer Technology (ICOT) have acquired skills needed to design the latest artificial-intelligence (AI) hardware and the software to make it work. They will go back to their government and corporate laboratories and spread the AI gospel.

Still, measured against its proclaimed aims, the programme failed. So what should come next? More of the same, according to the Ministry of International Trade and Industry (MITI). This time, though, MITI wants to include the one computer group whose absence last time did more than anything to damage its fifth-generation project. Top of the list of companies that it wants to sign up for its new sixth-generation project is IBM. Two other foreign computer makers, AT&T and Siemens, will also be invited to join, along with nine Japanese firms.

Back in 1982 the men from MITI imagined that the proposed "inference engine" would hand Japanese computer firms a winner. What they never bargained for was the reluctance of Fujitsu, Hitachi, NEC and other Japanese computer companies to abandon

their slavish following of IBM and go out on a limb with a computer concept all of their own. Without the confidence of knowing that the world's leading computer manufacturer was also making a big commitment to inference technology, the Japanese companies stayed with the tried and true. "Industry tends to stick to past experiences", moans ICOT's director, Kazuhiro Fuchi, and "they still want to follow IBM."

It was ambition that made the fifth-gen-



eration project try to leapfrog IBM rather than bring it in. Ambition hurt it in other ways, too. The project tried to develop an all-purpose AI machine—a computer that could, in effect, mimic the processes of human thought, which provide an uncanny ability to make guesses and muddle through ignorance. A prototype was eventually built using 64 microprocessors wired up as a parallel array. The machine could design a complicated microchip, analyse an English sentence, provide legal advice based on previous cases, and play a handy game of

"Go". Those are all specialised, if noble, tasks; the computer organised to perform them is a far cry from the all-purpose AI machine that ICOT originally dreamed of. By the time the fifth-generation project ends next March, ICOT hopes to have something bigger, if not a great deal better: an array processor with 1,000 elements comparable to some of the "massively parallel" speed demons in the United States.

Officially called the New Information Processing Technology (NIPT), the sixth-generation project will take over where ICOT's work leaves off. Current thinking is that a new institute will be established for NIPT under the direction of Shun-ichi Amari, a leading computer scientist at Tokyo University. Setting the priorities will be a research committee that includes R&D bosses from NTT, Fujitsu, Hitachi, NEC, Mitsubishi Electric, Toshiba, Sharp and Oki as well as ICOT.

The lesson learnt from the past ten years is that ICOT bit off far more than it could chew. By contrast, NIPT will have more modest goals. The ultimate aim is still to "process information intuitively without the need for programs." But the task is to be broken down into more definable AI questions. Like how to make a computer work with ambiguous information? Or how to get it to adapt to change and generalise from its own experience? Or how to make it tackle monstrously large problems by discarding unnecessary data?

The kind of test question that Japanese officials cite as an example of sixth-generation computing is how to choose ten out of 100 stockmarket shares for maximum return. Sounds trivial? A conventional mainframe computer capable of 100 MIPS (millions of instructions per second) would take 30,000 years to come up with an answer. A good fund manager working with pencil, paper, a pocket calculator and well trained intuition might take a week or two. If NIPT ever manages to do its job, the task would be narrowed down to minutes.

The key will be endowing a computer with the ability to learn. That means looking at the way the brain works. At one end of the scale, the NIPT team intends exploring stacks of silicon wafers containing up to a billion interconnected neuron-like elements. At the other extreme, research is to tackle the basics of pattern recognition. If it all sounds familiar, it is. Wherever scientists pursue the holy grail of artificial intelligence,

the same topics are on their agenda. The one difference that NIFT could bring is an extraordinary proficiency in optical microchips—a technology that half a dozen big Japanese laboratories have been honing to perfection in a bid to give machines a child-like ability to read. Japanese researchers have also had more practical experience than their colleagues abroad in exploiting “fuzzy” logic with its capacity for human-like judgments (and for spurring technology-minded Japanese consumers on to excited buying sprees).

As a sprat to catch the American mackerel, MITI is now offering to share the patents resulting from the joint research with foreign participants. Officials say they are even prepared to revise Japan's patent law so that foreign firms can benefit more from participating in the NIFT project. This month, MITI is to establish a committee of experts to determine the research priorities and the contributions expected from participants in the sixth-generation project. The aim is to launch the project in April 1992. The amount of government money has yet to be determined.

Domesticating mushrooms

Muck and magic

A MUSHROOM can be a valuable thing. The autumnal woods of Italy, France and many other places are full of wandering figures in search of ceps (or porcini), chanterelles, blewits, horns of plenty, shaggy ink-

caps, puffballs, oyster mushrooms, honey fungus, hedgehog fungus and the like. In Poland pickers make a living supplying wild fungi to markets. In Scotland a walk in the woods can turn a profit if you find chanterelles to sell to the village shop. In Italy pasta is stuffed with porcini and exported.

After a decade that saw salmon domesticated, kiwi fruits tamed, venison farmed and quails' eggs made cheap, it is not surprising that exotic fungi are next. The ordinary domesticated mushroom is being joined by an increasing variety of its wild cousins. Dried shiitake mushrooms are now sold in the United States, and fresh oyster mushrooms in Britain. About five more species are grown commercially, mostly in Asia. But domesticating wild mushrooms is not proving easy. Most of those who have tried are pessimistic. They are up against some intransigent biology.

The problem is the unique way that fungi grow. The bit you see and eat is merely the fruiting body. Most of the fungus is a tangle of tentacles called the mycelium. This is not arranged into cells with nuclei, as most other creatures are. Instead the tentacles spread into their food—be it dead wood, mucky soil or stale bread—and move their nuclei, and the rest of their contents, to the places where growth is going on.

Many fungi live in the soil, as partners to plants. There is a bargain between the two. In exchange for sugar from the plant, the fungus passes on minerals and nutrients that it has extracted from the soil. This “mycorrhizal” habit hinders would-be domesticators, for the fungus cannot live without the plant. Truffles, for example,

have signed up with the roots of oak trees. After many attempts at cultivating truffles, the French have fallen back on planting oaks in suitable places and inoculating their roots with the crop—a kind of ranching. A retired immunologist in California has done a little better. Moshe Shifrine is now producing 60lb (27 kilograms) of miniature truffles every week, grown in a laboratory medium; the California Truffle company turns them into oil and paste.

Getting the fungus to grow is only half the battle; you must also make it fruit. Although ceps are mycorrhizal, their mycelium can be grown on compost. But it will not produce the edible fruiting bodies. Common mushrooms are induced to fruit by being “cased” with moist peat and chalk while the humidity and carbon-dioxide concentration are increased. Oyster mushrooms fruit when the temperature is suddenly dropped and the light turned up.

A company in Michigan

called Company M has recently patented a fruiting method applicable to morels; Domino's Pizza has licensed the patent, and a pilot plant produces 300lb (136kg) a week. But finding the right recipe to induce fruiting is more a matter of trial and error than well-reasoned science; the errors are not particularly informative, which makes progress hard. David Wood, of Britain's Horticulture Research International (the former Glasshouse Crops Research Institute), says only long-term studies could find the fruiting formula for other wild mushrooms. It is hard to obtain the money for such work—even though Britain, with its imperial legacy of exotic agronomy, is rich in mycological expertise.

An alternative to domesticating wild mushrooms would be to improve domesticated mushrooms. But selective breeding is almost impossible. Ordinary mushrooms are not much given to sex, so different strains cannot be crossed. Instead, Dr Wood and his colleagues are trying to find a way of injecting genes directly into mushrooms, but that is made difficult by their habit of keeping several nuclei in every cell. The wild mushroom remains curiously unwilling to be tamed.

Muscular dystrophy

A finger in the dyke

BERKELEY, CALIFORNIA

IT IS tempting, but wrong, to think that a disease is vanquished once its genetic origins have been unearthed. In 1986 the defect that leads to Duchenne's muscular dystrophy, the most common inherited muscle disorder, was pinned to a bit of DNA that makes a protein called dystrophin. Before this knowledge can be turned into a cure, scientists need to understand how dystrophin causes the disease. Although its exact role remains shrouded, research is discovering how muscles waste away without it. This research points the way to potential new drugs.

The disease afflicts about one in every 3,400 boys. It causes weakness in the limbs as muscles are gradually supplanted by useless connective tissue, leading to disability and then death—usually before the sufferer passes his mid-20s. In healthy limbs, dystrophin is hooked up to the inside of the membrane which surrounds each muscle cell. Somehow it keeps the cell working. Experiments in which cells affected by Duchenne's muscular dystrophy were fused with nascent healthy muscle cells (known as myoblasts) have succeeded in restoring dystrophin, and some vitality, to the sick cells. But injecting lots of myoblasts into a



A small family business

"CORRESPONDENCE TRACKING"

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DIRECTORATE STATUS

FROM: EVERITT, William L.: KYOCERA INTERNATIONAL, INC.

TO: DR. D.A. BROMLEY

DATE OF
CORRESPONDENCE: 06/18/91

SUBJECT: ANNOUNCEMENT OF THE LAUREATES OF THE 1991 KYOTO
PRIZES.

DIRECTORATE

STAFF

ASSIGNED:

ASSIGNED:

ACTION
REQUIRED:

STAFF
ACTION:

SENDER'S DUE DATE:

OSTP DUE DATE:

STAFF DUE DATE

DATE COMPLETED:

DATE COMPLETED/DEPT:

COPIES TO: D. Allan Bromley
INTERNATIONAL/POLICY

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OSTP RECEIVED: 06/27/91
DEPT RECEIVED:

FILE: INTERNATIONAL - JAPAN



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OFFICE OF THE
DIRECTOR

KYOCERA INTERNATIONAL, INC.

8611 BALBOA AVENUE
SAN DIEGO, CA 92123-1580
619/576-2600 FAX (619) 492-1456

June 18, 1991

Dr. D. Allan Bromley
Assistant to the President for Science
and Technology
New Executive Office Building
725 17th Street, Room 358
Washington, D.C. 20506

Dear Dr. Bromley:

The Inamori Foundation is pleased to announce the laureates of the 1991 Kyoto Prizes.

We are sending you this information to keep you up to date on the activities of this important international organization. Since 1985, Kyoto Prizes have recognized achievement around the world in three fields: Basic Sciences, Advanced Technology, and Creative Arts and Moral Sciences.

The 1991 laureates of the Kyoto Prize are: Dr. Michael Szwarc (Professor, University of Southern California), for Advanced Technology; Edward Norton Lorenz (Professor Emeritus, M.I.T.), for Basic Sciences; and Peter Stephen Paul Brook (U.K.), for Creative Arts and Moral Sciences.

As Japan's highest international awards, the Kyoto Prizes are presented annually to three individuals or groups who have contributed significantly to the scientific, cultural or spiritual development of mankind. The 1991 awards will be presented to this year's laureates during a three-day ceremony, November 10-12 in Kyoto, Japan. Previous laureates have been from the United States, France, Italy, the Netherlands, Poland, West Germany, and the Soviet Union.

The Kyoto Prizes are humanitarian in spirit and may not be sought, nor campaigned for, but rather, candidates are nominated from professional societies, major universities, leading research institutions, and scientific and cultural academies.



Kyoto Prizes
June 18, 1991
Page 2

The laureates of the Kyoto Prizes are then selected by a distinguished panel of international experts with final approval provided by the Inamori Foundation's Board of Directors.

The aims of the Kyoto Prizes and the Inamori Foundation are to contribute to peace and prosperity of human beings through honoring the people who have contributed significantly to mankind's betterment.

Please feel free to contact us for any additional information regarding the Kyoto Prizes and the Inamori Foundation.

Sincerely,

A handwritten signature in blue ink, appearing to read 'W. L. Everitt', with a long, sweeping horizontal line extending to the right.

William L. Everitt
Vice President
Corporate Communications

WLE:vs

Enclosure

1997
THE KYOTO PRIZES

京 都 賞

THE
87 Shijodori Muromachi Higashi-iru
INAMORI
Shimogyo-ku, Kyoto 600, Japan
FOUNDATION
Phone: (075)255-2688

THE 1991 KYOTO PRIZES

LAUREATE REFERENCES

1991.6.14

THE INAMORI FOUNDATION

The Laureates of the 1991 Kyoto Prizes

Advanced Technology

Michael Szwarc (U.K.)(born in 1909)

Professor, University of Southern California

A chemist who has made an outstanding contribution to the research and development of polymeric materials for the materials sciences, Professor Szwarc is best known for discovering "living polymerization," paving the way for new functional materials with indispensable applications in advanced technology, and providing many scientists and engineers (particularly polymer scientists) with significant and unprecedented methodologies for the design and synthesis of new polymeric materials.

Basic Sciences

Edward Norton Lorenz (U.S.A.)(born in 1917)

Professor Emeritus, M.I.T.

A meteorologist who established the theoretical basis of weather and climate predictability, as well as the basis for computer-aided atmospheric physics and meteorology, Professor Lorenz made his boldest scientific achievement in discovering "deterministic chaos," a principle which has profoundly influenced a wide range of basic sciences and brought about one of the most dramatic changes in mankind's view of nature since Sir Isaac Newton.

Creative Arts and Moral Sciences

Peter Stephen Paul Brook (U.K.)(born in 1925)

Director, International Centre for Theatre Creations

A quintessential stage director who has exerted an extraordinary, worldwide influence over theater and drama for four decades, Mr. Brook has continually broken the bonds of theatrical convention with works that are at once extremely classical, yet fully contemporary, integrating both Eastern and Western theater at a level which transcends mere form.

MAJOR WORKS :

- 1956 Living polymers. *Nature*. Vol.178
- 1956 Polymerization initiated by electron transfer to monomer, A new method of preparation of block polymers. *Journal of the American Chemical Society*. Vol.78 (with Levy,M. et al.)
- 1959 Block polymers of ethylene oxide and its analogues with styrene. *Transaction of Faraday Society*. Vol.55 (with Richards,D.H.)
- 1968 *Carbanions, living polymers and electron-transfer processes*. Wiley-Interscience
- 1972 *Ions and ion pairs in organic reactions*.(ed.) Wiley-Interscience
- 1988 Developments in Anionic Polymerization - A Critical Review. *Advances in Polymer Science*. Vol.86

ACHIEVEMENTS OF THE 1991 KYOTO PRIZE LAUREATE

ADVANCED TECHNOLOGY

Professor Michael Szwarc was born in 1909, in Poland, and after graduating from Warsaw Polytechnic College, Poland, he received a Ph.D. degree in organic chemistry from Hebrew University, Israel, and a D.Sc. degree in physical chemistry from the University of Manchester, England. In 1953 he was appointed professor by the State University of New York, where he also served as the Director of the Polymer Research Center. After his retirement in 1979, he joined the faculty of the University of California, San Diego, before moving to the University of Southern California, Los Angeles, to continue his research at the Hydrocarbon Research Institute.

Professor Szwarc's research is exceptionally excellent and encompasses a wide range of polymer science. In particular, he is internationally famous for his discovery of "living polymerization," which eventually provided a basis for the precise synthesis of polymeric materials. First recognized in 1956 as anion polymerization on polymerized styrene with a sodium salt under meticulously purified conditions, "living polymerization" is a polymerization reaction that proceeds without termination and chain transfer. This thereby allows the resultant polymers to maintain chain end reactivity even after the completion of the reaction.

The discovery of "living polymerization" has paved the way for the development of polymers, as functional materials, that are indispensable for advanced technology, and its contribution to and impact on the synthesis of new polymeric materials is beyond imagination.

Polymers have, like plastics, been mass-produced as lightweight and structurally strong materials. With the recent development of advanced technologies, typically, electronics and information industry technologies, however, a strong demand has emerged for polymers as sophisticated functional materials for

advanced technology. To meet this demand, it is frequently necessary to endow polymers with controlled molecular weights (chain lengths) and with a functional group that is precisely placed at a particular position in a polymer chain. Conventional polymerization methods completely fail to fulfill this criteria, because they involve not only a polymer formation process (propagation reaction), but also a variety of undesirable side-reactions (such as termination and chain transfer reactions); the absence of precisely controlled synthetic methods has thus been a serious obstacle to the development of advanced polymeric materials.

In contrast, "living polymerization" permits the synthesis of polymers with uniform molecular weight (or with narrow molecular weight distributions). Such so-called "monodisperse polymers" are useful as standards for the determination of polymer molecular weight. Presently, such narrow molecular weight distribution polymers are drawing considerable interest as possible high-resolution resist materials and for use in other related products.

Another notable contribution of Professor Szwarc involved the development of a fundamental methodology for the preparation of "block polymers," in which two or more different polymer chains (segments) are connected to each other through chemical bonds, by the sequential addition of monomers to "living polymers" (each carrying an active growing end). Block polymers cannot be synthesized by random copolymerization and the polymer-blending methods currently available. However, thanks to his contribution, the block copolymerization method has, in turn, led to the manufacture of a variety of unique polymeric materials, including thermoplastic elastomers, by making the types and compositions of the polymer change.

Alternatively, a functional group can be attached quantitatively and specifically to a polymer chain end by the reaction of a "living polymer" with an appropriate compound. The resulting polymers are called "end-functionalized polymers," among which liquid rubbers, for instance, find wide industrial application.

An equally important feature of "living polymerization" is that it permits the fine control of polymer architectures not only in one dimension (chain length), but three; though such control, polymers can now possess various spatial shape such as spherical, star-shaped, and comb-like forms. The synthesis and application of these topologically controlled polymers are currently under extensive investigation.

In summary, Professor Szwarc's discovery of "living polymerization" and his subsequent outstanding research have provided many scientists and engineers, and polymer scientists in particular, with unprecedented significant methodologies for the design and synthesis of polymeric materials that are indispensable for advanced technologies.

PROFILE OF THE 1991 KYOTO PRIZE LAUREATE

BASIC SCIENCES

NAME : Edward Norton Lorenz

DATE OF BIRTH : May 23, 1917

NATIONALITY : U.S.A.

BRIEF BIOGRAPHY :

1917	Born in Connecticut, U.S.A.
1938	A.B.(Mathematics), Dartmouth College
1948	Sc.D.(Meteorology), M.I.T.
1946-55	Research Staff, M.I.T.
1962	Professor, M.I.T.
1981	Professor Emeritus, M.I.T.

AWARDS AND HONORS :

1969	Carl Gustaf Rossby Research Medal, American Meteorological Society
1973	Symons Memorial Gold Medal, Royal Meteorological Society
1975	Fellow, National Academy of Sciences (U.S.A.)
1981	Member, Norwegian Academy of Science and Letters
1983	Crafoord Prize, Royal Swedish Academy of Sciences
1984	Honorary Member, Royal Meteorological Society

MAJOR WORKS :

- 1955 Available potential energy and the maintenance of
 the general circulation. *Tellus*. Vol.7
- 1963 Deterministic nonperiodic flow.
 Journal of Atmospheric Sciences. Vol.20
- 1967 *The nature and theory of the general circulation*
 of atmosphere. World Meteorological Organization.
 No.218
- 1969 Three approaches to atmospheric predictability.
 Bull. American Meteorological Society. Vol.50
- 1976 Nondeterministic theories of climate change.
 Quaternary Research. Vol.6
- 1990 Can chaos and intransitivity lead to interannual
 variability ? *Tellus*. Vol.42A

ACHIEVEMENTS OF THE 1991 KYOTO PRIZE LAUREATE

BASIC SCIENCES

Professor Lorenz has worked continuously in the field of theoretical meteorology since the 1940's. His work has not only strengthened the theoretical basis of weather and climate predictability, but it has also led to the discovery of "deterministic chaos," bringing about one of the most dramatic changes in the view of nature taken by modern science since Sir Isaac Newton (1642-1727).

Professor Lorenz's theoretical work on the general circulation of the atmosphere during the 1950's and 1960's established the basis of computer simulation of weather and climate. The Earth's atmosphere is continually changing, producing weather and climatic phenomena. The energy source for this change is heating due to radiation from the sun and cooling due to infrared radiation from the Earth. Understanding these energy processes is essential for computer prediction of atmospheric changes based on the laws of physics. By introducing the concept of "available potential energy" in 1955, Professor Lorenz succeeded in solving this problem. In 1960, he introduced a means for describing atmospheric general circulation, which has many degrees of freedom, using a minimal set of equations in computer simulation. The results of this research were brought together in the book, *"The Nature and Theory of the General Circulation of the Atmosphere,"* published by the World Meteorological Organization in 1967. As a classic of atmospheric general circulation studies, the book remains of great importance even today.

In 1963, Professor Lorenz's theoretical research on thermal convection using the above methods led to the discovery of deterministic chaos. This had a profound effect not only on meteorology but a wide range of other scientific fields as well.

Henri Poincaré (1854-1912) the famous mathematician, had indicated in 1892 that the temporal evolution of certain types of deterministic dynamic systems involves chaotic movement, but in the years following this largely went unnoticed. In his numerical research on Bénard cells seventy years later, Professor Lorenz became the first to show that chaos results from the deterministic equations governing systems of dissipation having three degrees of freedom. This made clear that the chaos was not due to the very large number of degrees of freedom of the system, nor to uncertainty in quantum mechanics, but rather to the non-linear nature of the system. As this implies that very small differences in the initial conditions of a system as trifling as the movement of a butterfly's wings can give rise to major differences in the far future, it is called the "Butterfly Effect."

Prior to this discovery, computer simulation of the temporal development of natural phenomena had been based on the assumption that if the computer calculated temporal development according to the scientific laws based on initial conditions approximating the actual initial conditions, the result would be similar to the actual condition at a later time. Professor Lorenz's work showed that this is not the case, and this has created a profound impact on many other fields of science, including physics, chemistry, and biology. This discovery has shaken the view of nature of deterministic modern science, and the effect it is having on science is considered to be as important as that of the discovery of the principle of uncertainty in quantum mechanics.

In 1969, Professor Lorenz conducted theoretical research on weather phenomena and climate change from the perspective of deterministic chaos. Taking numerical weather forecasting as an initial value problem, it is impossible to avoid uncertainty in the determination of the initial values. Professor Lorenz showed

that the accumulated effect of this uncertainty can be neglected for a period of somewhat less than 10 days, but after this it grows exponentially. This makes clear the limits of weather prediction as an initial value problem, and shows the correct course which the development of technology for long-term weather prediction should take.

Regarding climate considered as a temporal average of weather phenomena, Professor Lorenz pointed out in 1976 the multiple nature of climatic conditions arising from non-linearity, thereby establishing a theoretical basis for sudden climatic changes. In his recent work concerning seasonal changes (1990), he used a simple model to show that even if no yearly changes occur in external conditions, yearly changes can occur in the climate. These successes are working toward the root of yet unsolved worldwide environmental problems.

Professor Lorenz's theoretical research has established the basis of computer aided atmospheric physics and meteorology. This has made remarkable developments possible in these fields and has established research methods for world environmental problems of major concern in international society. In addition, the discovery of deterministic chaos as a by-product of his work has stimulated the formation of a new view of nature in the computer age, and it is acclaimed as making a major contribution to a wide range of basic sciences.

PROFILE OF THE 1991 KYOTO PRIZE LAUREATE

CREATIVE ARTS AND MORAL SCIENCES

NAME .: Peter Stephen Paul Brook

DATE OF BIRTH : March 21, 1925

NATIONALITY : U.K.

BRIEF BIOGRAPHY :

- | | |
|-------|---|
| 1925 | Born in London, England |
| 1945 | Graduated from Oxford University |
| 1946 | Youngest guest director in history, Shakespeare Memorial Theatre (now, Royal Shakespeare Theatre) |
| 1947 | Director of productions, Royal Opera House, Covent Garden |
| 1962- | Associated with Royal Shakespeare Company |
| 1971 | Established International Centre of Theatre Research (CIRT) in Paris |
| 1974- | Director, International Centre for Theatre Creations (CICT) in Paris |

AWARDS AND HONORS :

- | | |
|------|---|
| 1963 | Grand Prix du Theatre des Nations,
"King Lear" |
| 1970 | London Drama Critics' Award for Best Director,
"A Midsummer Night's Dream" |
| 1971 | Tony Award for Best Director, New York,
"A Midsummer Night's Dream" |

- 1981 Grand Prix Dominique, Paris,
 "*The Cherry Orchard*"
- 1982 Grand Prix du Syndicat de la Critique Musicale et
 Dramatique, Paris, "*The Tragedy of Carmen*"

MAJOR WORKS :

- 1955 *Titus Andronicus*
- 1962 *King Lear*
- 1964 *Marat / Sade*
- 1970 *A Midsummer Night's Dream*
- 1971 *Orghast*
- 1981 *The Cherry Orchard*
 The Tragedy of Carmen
- 1985 *The Mahabharata*
- 1990 *The Tempest*

ACHIEVEMENTS OF THE 1991 KYOTO PRIZE LAUREATE

CREATIVE ARTS AND MORAL SCIENCES

Mr. Peter Brook, born in London in 1925, has been hailed as a theatrical genius. While still an 18-year-old Oxford undergraduate, he directed Christopher Marlowe's *Dr. Faustus* in a London theater, and, at the age of 20, went on to join the Royal Shakespeare Company as a director. By the late 1950's, Mr. Brook was at the forefront of English theater, working together with actor Paul Scofield on Shakespeare's *Hamlet*, Graham Greene's *The Power and the Glory*, and T. S. Eliot's *Family Reunion*.

Inspired by Polish critic Jan Kott's *Shakespeare Our Contemporary*, Mr. Brook, then in his thirties, touched off what amounted to a revolution in Shakespearean theater with his 1962 "theater of the absurd" interpretation of *King Lear*. Following *Lear*, Mr. Brook continued with a fundamental reexamination of theater, using such techniques as "happenings" and "theater of cruelty", and experimenting with forms of nonverbal communication.

In 1970, Mr. Brook founded the International Centre of Theatre Research (CIRT) in Paris, where he has engaged in various unique projects in international theater with actors from many nations. In 1974, he founded the International Centre for Theatre Creations (CICT), and produced works like *The Cherry Orchard* and *The Tragedy of Carmen*. He has had great success in contemporizing classic theater and has done much to cultivate young theater artists from around the world.

Mr. Brook's influence in the theater has been felt as an author as well as a director. In his famous book *The Empty Space* -- a work tremendously influential among people active in theater production as well as among scholars -- Mr. Brook's lucid exposition of contemporary stage practice is informed and enlivened by his profound knowledge of classic theater.

Mr. Brook has directed actors from many European, American, African, and Asian nations, surmounting cultural differences to create a true world theater. Undaunted by language barriers, Mr. Brook has assembled actors, musicians, and other performing artists from around the globe to collaborate on productions. One such production in particular, his nine-hour-long masterpiece, *The Mahabharata*, delves deeply into the Indian epic and highlights with consummate skill both the uniqueness and the universality of human culture. *The Mahabharata* has been performed in Japan, as have his Royal Shakespeare Company production of *A Midsummer Night's Dream* as well as *The Tragedy of Carmen* and *The Tempest*; all stimulated great interest.

Mr. Brook's productions, known for breaking the bonds of theatrical convention and forming the vanguard of contemporary theater, draw large audiences. They tend to let paradox stand as paradox and build a bridge from the world of the players to that of the audience. Invariably they address human problems very directly. Mr. Brook draws from both Eastern and Western theater, integrating them at a level which transcends mere form; and his theater accomplishes the seemingly impossible feat of being at once extremely classic and fully contemporary. In these attributes lies Mr. Brook's unique genius. His productions are powerfully expressive, without ever neglecting the basics of theater or the fine points of performance rhythm. Mr. Peter Brook is indeed a director at the very forefront of contemporary theater. For 40 years he has been a leader, not only of English theater, but of world theater, and he continues to exert an extraordinary influence. He is the quintessential director of the 20th century.

MEMBERS OF THE KYOTO PRIZE SCREENING ORGANIZATION

THE KYOTO PRIZE EXECUTIVE COMMITTEE

Okamoto, Michio (Chairman)	Director, International Institute for Advanced Studies
Fukui, Kenichi	Director, Institute for Fundamental Chemistry
Hironaka, Heisuke	Professor, Harvard University
Saito, Shinroku	President, Kanagawa Academy of Science and Technology Foundation
Sakurai, Yoshifumi	Vice President, Setsunan University
Sengen, Ryuichiro	Professor, Faculty of Law, Doshisha University
Yano, Toru	Director, Center for Southeast Asian Studies, Kyoto University

THE KYOTO PRIZE COMMITTEE

1. ADVANCED TECHNOLOGY

Saito, Shinroku (Chairman)	President, Kanagawa Academy of Science and Technology Foundation
Adachi, Kengo	Professor, Faculty of Science, Shinshu University
Imura, Hiroo	Dean, Faculty of Medicine, Kyoto University
Ishii, Takemochi	Professor, Faculty of Environmental Information, Keio University
Izumi, Osamu	Professor Emeritus, Tohoku University
Sakurai, Yoshifumi	Vice President, Setsunan University
Soga, Naohiro	Professor, Faculty of Engineering, Kyoto University
Tsuruta, Teiji	Director, Research Institute for Biosciences, Science University of Tokyo

2. BASIC SCIENCES

Hironaka, Heisuke (Chairman)	Professor, Harvard University
Amari, Shun-ichi	Professor, Faculty of Engineering University of Tokyo
Fukui, Kenichi	Director, Institute for Fundamental Chemistry
Hayakawa, Sachio	President, Nagoya University
Ichinohe, Tokio	Professor Emeritus, Kyoto University
Nasu, Noriyuki	Professor, University of the Air
Teramoto, Ei	Professor, Faculty of Science and Technology, Ryukoku University
Unno, Wasaburo	Professor, Research Institute for Science and Technology, Kinki University

3. CREATIVE ARTS AND MORAL SCIENCES

Yano, Toru (Chairman)	Director, Center for Southeast Asian Studies, Kyoto University
Fujisawa, Norio	Director-General, Kyoto National Museum
Kishi, Tetsuo	Professor, Faculty of Letters, Kyoto University
Miyagawa, Kazuo	Film Director
Sato, Tadao	Chairman, Japan Film Pen Club
Takashina, Shuji	Professor, Faculty of Letters, University of Tokyo
Tohyama, Kazuyuki	Director, Tokyo Metropolitan Festival Hall

THE KYOTO PRIZE SCREENING COMMITTEE

1. ADVANCED TECHNOLOGY

Izumi, Osamu (Chairman)	Professor Emeritus, Tohoku University
Higashimura, Toshinobu	Professor, Faculty of Engineering, Kyoto University
Kawamura, Takao	Professor, Faculty of Engineering, University of Osaka Prefecture
Koizumi, Mitsue	Professor, Faculty of Science and Technology, Ryukoku University
Saegusa, Takeo	Professor Emeritus, Kyoto University
Taya, Minoru	Professor, Faculty of Engineering, Tohoku University
Yanagida, Hiroaki	Professor, Research Center for Advanced Science and Technology, University of Tokyo

2. BASIC SCIENCES

Hayakawa, Sachio (Chairman)	President, Nagoya University
Kogure, Tomokazu	Professor Emeritus, Kyoto University
Mizutani, Hitoshi	Professor, Institute of Space and Astronautical Science
Morimoto, Masaki	Professor, National Astronomical Observatory
Sato, Humitaka	Professor, Faculty of Science, Kyoto University
Ueda, Seiya	Professor, School of Marine Science and Technology, Tokai University
Yamamoto, Ryozauro	Professor, Faculty of Science, Kyoto University
Yasukawa, Katsumi	Professor, Faculty of Science, Kobe University

3. CREATIVE ARTS AND MORAL SCIENCES

Sato, Tadao (Chairman)	Chairman, Japan Film Pen Club
Nakagawa, Hisayasu	Professor, Faculty of Letters, Kyoto University
Odashima, Yushi	Professor, Faculty of Letters, University of Tokyo
Ozaki, Hirotsugu	Vice President, Japanese Centre International Theatre Institute
Takano, Etsuko	General Manager, Iwanami Hall
Togawa, Naoki	Cinema Critic
Yamamoto, Kikuo	Professor, Faculty of Letters, Waseda University
Yamazaki, Masakazu	Professor, Faculty of Letters, Osaka University

FOR FURTHER INFORMATION, PLEASE CONTACT

Seiichi Nagataka

Manager, Public Affairs
The Inamori Foundation

Address : 87 Kankoboko-cho, Shijodori-Muromachi-
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Telephone : 075-255-2688

Facsimile : 075-255-3360

.....OR.....

William L. Everitt

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Telephone: 619-576-2670

Facsimile: 619-492-1456

EVENTS SCHEDULE OF THE 1991 KYOTO PRIZES

1. WELCOME RECEPTION

DATE : November 9, Sat., 1991, Evening

PLACE : Hotel (to be decided)

A welcome dinner reception will be held for the honorable laureates.

2. PRIZE PRESENTATION CEREMONY

DATE : November 10, Sun., 1991, Afternoon

PLACE : Main Conference Hall

Kyoto International Conference Hall

The Kyoto Prizes will be presented to the laureates.

3. BANQUET

DATE : November 10, Sun., 1991, Evening

PLACE : Kyoto Takaragaike Prince Hotel

A celebratory dinner party will be held in honor of the laureates.

4. COMMEMORATIVE LECTURES

DATE : November 11, Mon., 1991, Afternoon

PLACE : Main Conference Hall

Kyoto International Conference Hall

The laureates will reveal their thoughts and feelings reflecting on their works to a public audience.

5. WORKSHOPS

DATE : November 12, Tues., 1991

PLACE : Kyoto International Conference Hall

The workshops will be held with the laureates and researchers of their specific fields in each category respectively.

FOR FURTHER INFORMATION, PLEASE CONTACT

Seiichi Nagataka

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.....OR.....

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"CORRESPONDENCE TRACKING"

TYPE: INFORMATION

DOCUMENT NUMBER: 9123133

ORIGINATOR: 02

STATUS C

DIRECTORATE STATUS

FROM: MCTAGUE, John P. and Wataru Mori: US-JAPAN JOINT HIGH LEVEL
ADVISORY PANEL

TO: DR. D.A. BROMLEY

DATE OF
CORRESPONDENCE: 06/15/91

SUBJECT: THE SUMMARY OF THE THIRD MEETING OF THE JOINT HIGH
LEVEL ADVISORY PANEL HELD APRIL 18-19, 1991 IN
HAKONE, JAPAN.

DIRECTORATE
ASSIGNED:

STAFF
ASSIGNED:

ACTION
REQUIRED:

STAFF
ACTION:

SENDER'S DUE DATE:

OSTP DUE DATE:
DATE COMPLETED:

STAFF DUE DATE
DATE COMPLETED/DEPT:

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INTERNATIONAL/POLICY

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OSTP RECEIVED: 08/01/91
DEPT RECEIVED:

FILE: P-INTERNATIONAL-JAPAN

U.S.-Japan
Joint High Level Advisory Panel
On Cooperation in Research and Development
In Science and Technology

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OFFICE OF THE
DIRECTOR

June 15, 1991

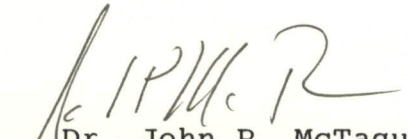
The Honorable D. Allan Bromley
Assistant to the President for
Science and Technology

Dear Dr. Bromley,

Attached is the Chairmen's Summary of the third meeting of the Joint High Level Advisory Panel, which was held April 18-19, 1991, in Hakone, Japan. The meeting was successful on a number of fronts, particularly in the frank exchange of views at a broad and high level.

We appreciate the opportunity to share our views with you in this highly important area and hope that you find our recommendations useful as you explore ways to expand bilateral science and technology cooperation at the third Joint High Level Committee meeting this Fall.

Sincerely,


Dr. John P. McTague
United States Co-Chairman


Dr. Wataru Mori
Japan Co-Chairman

CHAIRMEN'S SUMMARY
Joint High Level Advisory Panel

The Joint High Level Advisory Panel (JHLAP), under the U.S. - Japan Science and Technology Agreement, held its third meeting on April 18-19, 1991, in Hakone, Japan. The meeting was co-chaired on the U.S. side by Dr. John P. McTague, Vice President for Technical Affairs, Ford Motor Company, and on the Japanese side by Dr. Wataru Mori, Member of the Council for Science and Technology, the Prime Minister's Office. Agenda and list of participants is attached. The JHLAP noted that its charter is to identify issues of importance to the overall science and technology relationship, to recommend specific cooperative areas, mechanisms, and approaches for enhancing mutual access to S&T opportunities, and to review progress. The Panel also commented on a wide range of issues in a positive and constructive manner.

National Policies for Overall Science and Technology Relations

- o As a means for increasing mutual understanding, each side presented a report illustrating the role of the private sector in the development of S&T policy formulation. The presentation focused on advisory councils with private sector participation in each country, noting the importance of the Prime Minister's Council for S&T in Japan and the President's Council of Advisors in S&T in the United States.
- o Acknowledging the difficulty of defining basic research, the Panel discussed whether different modes of performing basic research in each country limited cooperation. The Panel also discussed the various categories and characteristics for cooperation, noting that modes of coordination and cooperation vary among them. The Panel reemphasized the importance of greater investment by each country in open basic research, especially at universities.

International Science and Technology Activities

Japanese Perspective

- o The Panel welcomed the presentation of the Japanese report "Toward the Globalization of Science and Technology". The U.S. side pointed out a number of common views, including the report's conclusion regarding the harmonization of intellectual property rights (IPR) in various countries. The Panel called for further discussion of IPR in technology intensive cooperation, including the harmonization of patent and copyright systems.
- o Regarding global environmental cooperation, the Panel suggested further bilateral exchange as a means for enhancing this cooperation. The U.S. side welcomed the

Japanese report "Basic Plan for R&D on Earth S&T" and agreed with the Japanese suggestion that cooperation was extremely effective in atmospheric studies but that improvement should be considered in the area of oceanographic studies.

- o The Japanese side presented a status report on the Human Frontier Science Program (HFSP) and stressed the need for a commitment by the participating countries so that the program can be established on a permanent basis. The Panelists agreed that the science associated with HFSP was very good.
- o As a follow-up to previous discussions on generic technologies, the Japanese side presented a survey involving university research on the subject.

U.S. Perspective

- o The U.S. side presented views on the OSTP report "U.S. Technology Policy," noting that it represented a significant shift in U.S. attitude toward technology policy. The U.S. side commented that this approach has been backed up by a number of private sector reports as well as congressional actions.
- o Regarding megascience cooperation, the Panel commented that the increasing cost of big science projects exceeds the ability of any one country to support them, and that this necessitates multilateral cooperation. Both sides agreed that large scale megascience should not drain resources from "small science" projects. Ideally, such megascience projects should be coordinated by all participants at an early stage. Examples of megascience cooperation discussed were the Superconducting Supercollider (SSC), the Human Genome Project, and the International Thermonuclear Experimental Reactor (ITER). Regarding the SSC, the Japanese side noted that discussions are currently being held among elementary particle physicists.
- o In response to the U.S. presentation on the Human Genome Project, the Japanese side informed the Panel that the Council for S&T has taken a lead role in coordinating Japanese research activities and is now ready to cooperate on a multilateral basis.
- o The Panel agreed that a greater degree of coordination of megascience projects is needed.

Mechanisms of Science and Technology Cooperation

- o The Panel welcomed the expansion of opportunities for researchers and students to work and study in Japan. One example discussed was the Summer Institute Program, which started last year with twenty-five U.S. graduate students and has expanded to fifty students this summer. The U.S. side positively noted the inclusion of private sector laboratories in the upcoming program.
- o The Japanese side presented data reflecting the numbers of researchers visiting each country, reflecting a positive trend. The Panel also recognized the substantial character of private sector exchanges.
- o The Panel commented on the expanded opportunities for cooperation in machine translation and noted the recent U.S. JTEC study team to Japan in this area. The Panel also welcomed the establishment of two reprographic rights organizations in Japan and the forthcoming unification of those organizations.

Areas of Cooperation

- o The Panel welcomed the initiative for multilateral cooperation in precompetitive research on Intelligent Manufacturing System (IMS), noting the November meeting and the distribution in April of a draft terms of reference for a feasibility study.
- o The Panel discussed the current status on cooperation under the S&T Agreement regarding geoscience, advanced materials, and life sciences. In discussing geoscience cooperation, it was noted that more encouragement for a "bottoms up" approach should be taken, recognizing however that in some cooperation, such as in databases, a "top down" approach is necessary. The Panel noted with satisfaction that a joint workshop of global change experts will be meeting in Japan this fall, in part a response to the 1990 JHLAP report.
- o In discussing life sciences, the U.S. side suggested that standardization of field tests of genetically modified plants would be a good area for further cooperation.
- o Regarding the Japanese initiative "New Information Processing Technologies (NIPT)," the U.S. side presented its views on what should be included on the NIPT agenda. The Panel appreciated the Japanese plan to conduct a feasibility study on NIPT in consultation with the U.S. government.

In summary, the Panel reiterated some of the themes of the meeting, namely that both sides conduct early consultation when pursuing cooperation; that when cooperation is pursued it be between equivalent entities; and that ongoing efforts to harmonize intellectual property rights be further encouraged.

"CORRESPONDENCE TRACKING"

TYPE: ACTION
ORIGINATOR: 02

DOCUMENT NUMBER: 9121774
DIRECTORATE STATUS

FROM: LEE, T.D.: COLUMBIA UNIVERSITY IN THE CITY OF NEW YORK

TO: DR. D.A. BROMLEY

DATE OF
CORRESPONDENCE: 06/14/91

SUBJECT: RE: DETECTOR COLLABORATION & SSC CONSTRUCTION
COLLABORATION. REQUEST TO FAX LEE A GOOD TIME THAT
HE MAY PHONE YOU REGARDING A PERSONAL CONFIDENTIAL
MESSAGE FROM NISHIKAWA.

DIRECTORATE
ASSIGNED: D. Allan Bromley

STAFF
ASSIGNED:

ACTION
REQUIRED: AS NECESSARY

STAFF
ACTION:

SENDER'S DUE DATE:

OSTP DUE DATE: 06/21/91

STAFF DUE DATE

DATE COMPLETED:

DATE COMPLETED/DEPT:

COPIES TO: INTERNATIONAL/POLICY
PHYSICAL SCIENCES
Ken Yale

WHITE HOUSE TRACKING #:

CONTACT PERSON: T.D. LEE

PHONE: FX 212/932-31 EXT:

REMARKS:

CLOSED

OSTP RECEIVED: 06/17/91
DEPT RECEIVED:

FILE: INTERNATIONAL & SPACE

Physical Sciences

Japan

Saken care

*Marion
Please call me
today*

9121774

Columbia University in the City of New York | New York, N.Y. 10027

DEPARTMENT OF PHYSICS

538 West 120th Street

June 14, 1991

Dr. D. Allan Bromley, Director
Office of Science and Technology Policy
Old Executive Office Building
17th Street and Pennsylvania Avenue, N.W.
Washington, D.C. 20506

OFFICE OF THE
DIRECTOR

91 JUN 17 11:19

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Dear Allan,

Just came back from Japan. I had two long conversations, one with Arima and the other with Nishikawa. Both are in favor of US-Japan collaboration on the SSC:

1) Detector collaboration--

Both regard the L* rejection as offering a new opportunity. A figure of about \$200,000,000 was mentioned and will be discussed at an important meeting today in Japan with Nishikawa as chairman. Arima thinks this will be successful and will mention it to the American Ambassador.

2) SSC construction collaboration--

Both believe this has to be done government-to-government at the highest level, with your involvement. Nishikawa has a personal confidential message which he asked me to transmit to you. Please fax me a good time that I may phone you. Except for Monday, the 17th, I will be in New York. My fax number is 212-932-3169.

Warmest regards

T.D.

T. D. Lee

6/21/91

"CORRESPONDENCE TRACKING"

TYPE: ACTION DOCUMENT NUMBER: 9121668
ORIGINATOR: 02 STATUS I DIRECTORATE STATUS

FROM: KISAKA, Takashi: EMBASSY OF JAPAN

TO: DR. D.A. BROMLEY

DATE OF
CORRESPONDENCE: 06/06/91

SUBJECT: FORWARDS A LETTER FROM AKIKO SANTO (Minister of
State for Science and Technology) REGARDING
CONTINUED EFFORTS TO ENSURE THAT THE NECESSARY
BUDGET FOR THE SPACE STATION PROGRAM WOULD BE
ALLOCATED & THAT THE U.S. WOULD IMPLEMENT THIS

DIRECTORATE STAFF
ASSIGNED: INTERNATIONAL/POLICY ASSIGNED:

ACTION STAFF
REQUIRED: FOR DAB SIGNATURE ACTION:

SENDER'S DUE DATE:
OSTP DUE DATE: 06/21/91 STAFF DUE DATE
DATE COMPLETED: DATE COMPLETED/DEPT: 7/1/91

COPIES TO: PHYSICAL SCIENCES
Ken Yale
D. Allan Bromley

WHITE HOUSE TRACKING #: CONTACT PERSON:
PHONE: EXT:
REMARKS:

CLOSED

OSTP RECEIVED: 06/07/91
DEPT RECEIVED:

FILE: P- INTERNATIONAL*SPACE
- Japan
Physical Sciences

912/668

EMBASSY OF JAPAN

2520 MASSACHUSETTS AVENUE, N.W.

WASHINGTON, D.C. 20008

(202) 939-6700

RECEIVED

91 JUN 7 All : 04

June 6, 1991

OFFICE OF THE
DIRECTOR

Dear Dr. Bromley:

I have the honor to transmit to you, enclosed herewith, a letter from Ms. Akiko Santo, Minister of State for Science and Technology.

Allow me to extend my warmest regards.

Sincerely yours,

Takashi Kisaka

Takashi Kisaka
Science Counselor

The Honorable D. Allan Bromley
Assistant to the President for
Science and Technology and Director
Office of Science and Technology Policy
Washington, D.C. 20506

SCIENCE AND TECHNOLOGY AGENCY

2-2-1 Kasumigaseki Chiyoda-ku, Tokyo Japan

May 27, 1991

Dr. D. Allan Bromley

Assistant to the President for Science and
Technology and Director
Office of Science and
Technology Policy
New Executive Office Building,
Washington, D.C. 20506
USA

Dear Dr. Bromley :

I was very surprised to learn the recent development in the U.S. Congress concerning the NASA Space Station Program budget. I can not help expressing our serious concern about this development.

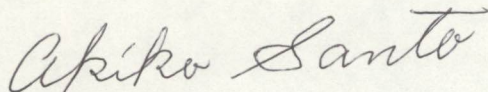
The Space Station Program was initiated in 1984 by the invitation of President Reagan, which was extended to friends and allies including Japan. Recognizing the importance of the Space Station, Japan decided to participate in this international endeavor by contributing the Japanese Experiment Module (JEM). In order to implement this, we have made diligent efforts in modifying our national space policy and in investing quite a large amount of budget and manpower to adequately promote JEM development. Although Japan is also facing stringent budgetary conditions in the field of science, technology and space, we have nonetheless been strenuously working to observe our international commitments as stipulated in the Intergovernmental Agreement on Space Station Cooperation (IGA) signed in September 1988 and accepted by the Japanese Government in September 1989 after securing its Diet approval. Should the program be canceled, all the efforts we have made so far would be nullified.

The Space Station restructuring was very intensively executed with immense efforts including the international partners' participation under a tightly limited schedule. Japan highly appreciates the results of this restructuring. NASA has reported to us that the restructured program meets the requirements established by the U.S. Congress last year and that the NASA's FY'92 budget request relating to the Space Station Program is formulated according to the budgetary profile indicated by the U.S. Congress last year. Therefore, it is very difficult for me to understand that the continuation of the Space Station Program is now being threatened by the recent decision made in the Appropriation Subcommittee of the Congress.

The Space Station Program is now regarded in Japan as a symbolic project of Japan-U.S. cooperation in the field of big science. Should a smooth implementation of this project be hampered by the budgetary difficulties of the U.S., I fear that doubt would inevitably grow on the credibility of the U.S. as a partner in international cooperation. I wish to point out that this issue could have a negative impact on the future cooperative relationship between Japan and the U.S. in science and technology in general.

I honestly hope that Japan will continue to work with the international partners including the U.S. for developing, utilizing and operating the Space Station. I would appreciate your continued efforts to ensure that the necessary budget for the Space Station Program would be allocated and that the U.S. would implement this program in accordance with its international commitments.

Sincerely,

A handwritten signature in cursive script, reading "Akiko Santo".

Akiko Santo

Minister of State for Science and Technology

EXECUTIVE OFFICE OF THE PRESIDENT
OFFICE OF SCIENCE AND TECHNOLOGY POLICY
WASHINGTON, D.C. 20506

May 30, 1991

Dear Mr. Chairman:

I want you to know of my deep concern over the recent decision by the House Appropriations Subcommittee on Veterans' Affairs, Housing and Urban Development and Independent Agencies to deny funding for the Space Station Freedom. Though this is but one step in a long budget process, unless it is reversed in a timely manner it has ominous implications for science and technology in the United States and for our international relations. I want to restate briefly the rationale for U.S. support of the Space Station, and outline the deleterious consequences its cancellation would have on our international relations, especially in international science and technology.

Space Station Freedom is important to answering critical scientific questions related to maintaining human life during manned space exploration. The research environment provided by it is absolutely essential for this crucial life sciences research. The Space Station also permits conduct of microgravity and other experiments of substantial scientific merit. Most important, canceling Freedom would throw our entire manned spaced program into disarray and, with it, the Nation's commitment to American leadership in space.

The international consequences of backing out of the program will be severe and will extend well beyond science and technology. We, at the Office of Science and Technology Policy, have been told on numerous occasions, by very senior representatives from Canada, Europe and Japan that, having renounced major components of their own domestic space programs in order to participate in this joint effort, failure to follow through on our commitments will confirm the United States as an unreliable partner. It will poison the well for future cooperation, not only in space but in other areas of science and technology, for the foreseeable future.

As you know, in 1988, the United States signed an Intergovernmental Agreement and a supporting Memorandum of Understanding involving nine European governments participating in the Space Station Program through the European Space Agency. After joining the program at our invitation, they have participated fully in the project, including the recent redesign. The Japanese and the Canadians have also signed the Intergovernmental Agreement and implementing Memoranda of Understanding covering their very substantial commitments. These foreign commitments total nearly \$8 billion and involve in excess of \$1 billion in sunk costs. Our partners have further agreed to share in the operating costs over a projected 30-year lifetime of the project.

Our international partners treat their participation in the 1988 Intergovernmental Agreement as a treaty obligation. Failure on our part to uphold our commitment, calling into question our reliability as a partner in international science and technology, would have a chilling effect on future cooperation in large-scale science projects, such as the Superconducting Supercollider, the Global Change Research Program, the Human Genome Program, thermonuclear fusion, and many others.

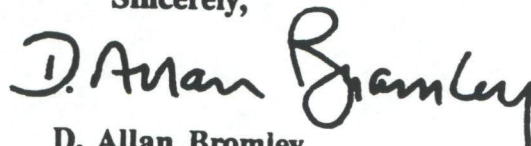
The Administration has already received strongly-worded letters from our Space Station partners. The Director-General of the European Space Agency states that the Space Station is an "unprecedented international effort in peaceful technological cooperation" and that the threatened discontinuance of funding "does great damage to credibility in U.S. international cooperative commitments."

Foreign Minister Nakayama, with whom I co-chair the Joint High-Level Committee of the U.S.-Japan Science and Technology Agreement, has just written to Secretary Baker and has asked him to make the best possible efforts to uphold U.S. commitments. He warns that "the credibility of the United States as a partner in any major big science effort would be inevitably damaged." In a personal representation from the Japanese embassy, it was made clear to me that the Space Station is the centerpiece of U.S.-Japan science and technology cooperation and that cancellation of Freedom would hinder future cooperation in all sciences. This was echoed in a letter from a university colleague who stated "cancellation of the Space Station would have a chilling effect on all areas of U.S.-Japan technical cooperation."

The Canadian Government has also expressed its concern. The Canadian Ambassador has written NASA Administrator Truly stating that the Space Station is a "test" of the ability of many countries to direct their efforts towards a common goal. In a letter to Secretary Baker the Ambassador continues that "If the United States were to withdraw from (the) Space Station, it would be a serious failure in establishing the collective confidence necessary for international cooperation in space and undermine the basis for future initiatives."

The United States has worked long and hard to build a community of nations to address common problems that only science can solve. These include issues involving the environment, health and space, as well as fundamental knowledge. If we do not fully meet our commitment for Space Station Freedom, U.S. leadership, and even our fundamental credibility in international science and technology is in danger. We cannot take such a risk with the future.

Sincerely,

A handwritten signature in dark ink, appearing to read "D. Allan Bromley". The signature is fluid and cursive, with the first name "D." and last name "Bromley" clearly distinguishable.

D. Allan Bromley
Director

The Honorable Claiborne Pell
Chairman
Committee on Foreign Relations
United States Senate
Washington, D.C. 20510-6225

EXECUTIVE OFFICE OF THE PRESIDENT
OFFICE OF SCIENCE AND TECHNOLOGY POLICY
WASHINGTON, D.C. 20506

May 30, 1991

Dear Congressman Broomfield:

I want you to know of my deep concern over the recent decision by the House Appropriations Subcommittee on Veterans' Affairs, Housing and Urban Development and Independent Agencies to deny funding for the Space Station Freedom. Though this is but one step in a long budget process, unless it is reversed in a timely manner it has ominous implications for science and technology in the United States and for our international relations. I want to restate briefly the rationale for U.S. support of the Space Station, and outline the deleterious consequences its cancellation would have on our international relations, especially in international science and technology.

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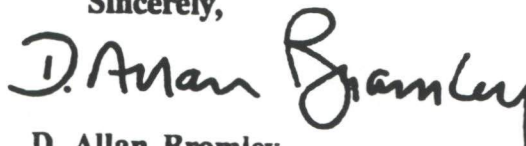
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The United States has worked long and hard to build a community of nations to address common problems that only science can solve. These include issues involving the environment, health and space, as well as fundamental knowledge. If we do not fully meet our commitment for Space Station Freedom, U.S. leadership, and even our fundamental credibility in international science and technology is in danger. We cannot take such a risk with the future.

Sincerely,

A handwritten signature in dark ink, appearing to read "D. Allan Bromley". The signature is fluid and cursive, with the first name "D. Allan" and the last name "Bromley" clearly distinguishable.

D. Allan Bromley
Director

The Honorable William S. Broomfield
Committee on Foreign Affairs
United States House of Representatives
Washington, D.C. 20515-6128

THE WHITE HOUSE

WASHINGTON

June 26, 1991

Dear Minister Santo,

I read with great interest your letter of May 27 in which you express concerns about the potential cancellation of the Space Station program. As you know, funding for Space Station Freedom has been reinstated in the House of Representatives. However, your concerns about the larger implications of Congressional actions on cooperative international science and technology projects are well taken.

The initial vote by a House Appropriations Subcommittee to deny funding for the Space Station was but one step in a long budget process. Your letter, and others from our international partners in Space Station Freedom, made clear the depth of foreign concerns about the fate of Space Station Freedom, as well as the larger consequences for international cooperation in science and technology. I met with Acting Ambassador Noboru who communicated your government's concerns, as did Dr. Funikawa, of the National Space Development Agency, who met with OSTP Associate Director, J. Thomas Ratchford.

The Administration has moved forcefully to insure budgetary support for the Space Station. Indicative of my personal concern, you should know that I wrote directly to the Chairmen and Ranking Minority Members of the House Foreign Affairs and Senate Foreign Relations Committees warning of the deleterious consequences of the subcommittee's actions and urging them to support the Space Station. You will find copies enclosed.

I am aware of the substantial contributions that Japan has made to Space Station Freedom, and the changes this dictated for Japan's domestic space program. Such contributions are highly valued. Please be assured that I will continue to follow the situation as we move through the budget process, and that I remain a strong supporter of the President's commitment to the Space Station.

Sincerely,



D. Allan Bromley
The Assistant to the President
for
Science and Technology

The Honorable Akiko Santo
Minister of State for Science and Technology
Science and Technology Agency
2-2-1 Kasumigaseki, Chiyoda-Ku
Tokyo, Japan

Enclosures

"CORRESPONDENCE TRACKING"

TYPE: INFORMATION DOCUMENT NUMBER: 9121819
ORIGINATOR: 02 STATUS C DIRECTORATE STATUS

FROM: INAMORI, Kazuo: KYOCERA CORPORATION

TO: DR. D.A. BROMLEY

DATE OF
CORRESPONDENCE: 06/03/91

SUBJECT: A THANK YOU FOR MEETING WITH INAMORI ON JAPAN'S NEW
FOREIGN POLICY.

DIRECTORATE STAFF
ASSIGNED: ASSIGNED:

ACTION STAFF
REQUIRED: ACTION:

SENDER'S DUE DATE:
OSTP DUE DATE: STAFF DUE DATE
DATE COMPLETED: DATE COMPLETED/DEPT:

COPIES TO: D. Allan Bromley
INTERNATIONAL/POLICY

WHITE HOUSE TRACKING #: CONTACT PERSON:
PHONE: EXT:
REMARKS:

OSTP RECEIVED: 06/21/91 FILE: INTERNATIONAL - JAPAN
DEPT RECEIVED:

9/2/819



KYOCERA

KYOCERA CORPORATION

5-22, Kitainoue-cho Higashino
Yamashina-ku, Kyoto 607 Japan
Phone : 075-592-3851
Telex : 5422-479

June 3, 1991

RECEIVED

91 JUN 21 A 8:41

OFFICE OF THE
DIRECTOR

Dr. Allan Bromley
Assistant to the President
for Science and Technology and
Director of the Office of Science
and Technology
The White House
Old Executive Office Building
17th St. and Pennsylvania Ave., N.W.
Room 358
Washington, D.C., U.S.A.

Dear Dr. Bromley,

Thank you very much for sharing the time with me despite of your very busy schedule. I have learned so much from you during our conversation that I will discuss with my subcommittee members on Japan's new foreign policy based on your valuable opinion.

I am sincerely hoping that my effort in the Provisional Council for the Promotion of Administrative Reform will contribute not only for Japanese but also for the people around the world.

I am looking forward to seeing you again in the future, especially when you will be in Japan next time.

Sincerely Yours,

Kazuo Inamori
Chairman
Kyocera Corporation

"CORRESPONDENCE TRACKING"

TYPE: INFORMATION

DOCUMENT NUMBER: 9121590

FROM: MORGAN, James C.: APPLIED MATERIALS

TO: Dr. D. Allan Bromley

DATE OF
CORRESPONDENCE: 05/28/91

SUBJECT: AN AUTOGRAPHED COPY OF THE BOOK, "CRACKING THE
JAPANESE MARKET- STRATEGIES FOR SUCCESS IN THE NEW
GLOBAL ECONOMY."

DIRECTORATE
ASSIGNED:

STAFF
ASSIGNED:

ACTION
REQUIRED:

STAFF
ACTION:

SENDER'S DUE DATE:

OSTP DUE DATE:

DATE COMPLETED:

DATE COMPLETED/DEPT:

COPIES TO: D. Allan Bromley
INTERNATIONAL/POLICY

WHITE HOUSE TRACKING #:

CONTACT PERSON:

REMARKS:

DATE RECEIVED: 06/03/91

FILE: INTERNATIONAL -JAPAN

APPLIED MATERIALS

RECEIVED

James C. Morgan
CHAIRMAN
CHIEF EXECUTIVE OFFICER

91 JUN 3 PM 12:35



OFFICE OF THE
DIRECTOR

May 28, 1991

The Honorable D. Allan Bromley
Assistant to the President for Science
and Technology
The White House
17th & Pennsylvania Avenue
Washington, DC 20500

Dear Allan:

I noticed we were sharing a common page in the Special Issue of *Fortune* entitled *The New American Century*, and realized that you had not received a personal copy of the book, *Cracking the Japanese Market - Strategies for Success in the New Global Economy*.

It appears that there is some progress being made on some of the issues we have been discussing on the NACS Committee. This, I believe, is due to your personal efforts.

I hope to see you soon.

Sincerely,

James C. Morgan

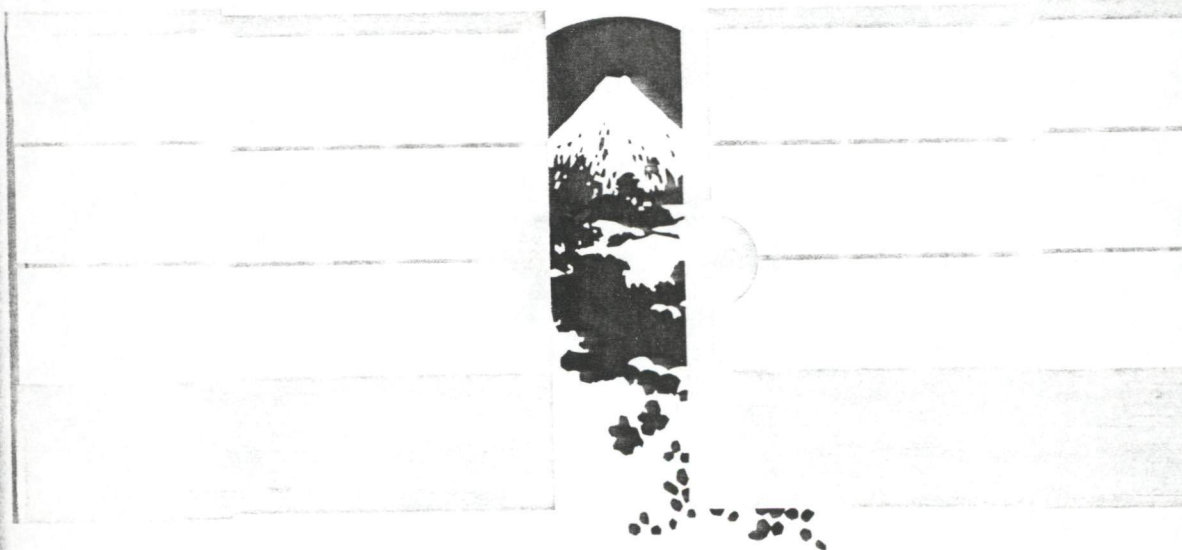
Enclosure

3050 Bowers Avenue
Santa Clara, California 95054
Phone: (408) 727-5555
Telex: 34-6332

Mailing Address:
Applied Materials, Inc.
P.O. Box 58039
Santa Clara, California 95052

CRACKING THE JAPANESE MARKET

STRATEGIES FOR SUCCESS IN THE NEW GLOBAL ECONOMY



**JAMES C. MORGAN &
J. JEFFREY MORGAN**

*reception
Logged*

"CORRESPONDENCE TRACKING"

TYPE: MEETING REQUEST

DOCUMENT NUMBER: 9121400

FROM: ERONY, Michael D.: ERONY, MCKIBBEN & ASSOCIATES

TO: DR. BROMLEY

DATE OF
CORRESPONDENCE: 05/09/91

SUBJECT: REQEUST TO MEETING 05/20/91 TO DISCUSS THE CONCEPT
OUTLINE ON THE U.S.-JAPAN ENVIRONMENTAL TECHNOLOGY
EXPOSITION: S.O.S.- STRATEGIC OPPORTUNITIES FOR
SURVIVAL.

ASSIGNED TO: INTERNATIONAL/POLICY

*BW
VS > copies given*

ACTION REQUIRED: AS NECESSARY

SENDER'S DUE DATE:

OSTP DUE DATE:

05/15/91

DATE COMPLETED:

5/16/91

COPIES TO: D. Allan Bromley

WHITE HOUSE TRACKING #:

CONTACT PERSON:

REMARKS: *after speaking to Sutton & Whyman, I referred
Mr. Erony to CEB via telephone.*

DATE RECEIVED: 05/13/91

FILE: MEETING REQUEST*INTERNAT'L - JAPAN

Erony, McKibben & Associates

A Professional Association

912400
91 MAY 13 AM 11:20

May 9, 1991

D. Allan Bromley, Ph.D.
Assistant to the President
for Science and Technology
The White House
Washington, D.C.
FAX: (202) 395-3261

OFFICE OF THE
DIRECTOR

Dear Dr. Bromley:

I would like to familiarize you with a concept to produce a conference-exposition entitled **U.S.-Japan Environmental Technology Exposition: Strategic Opportunities for Survival**.

The origin of this project stems from my recent participation in a conference on U.S. Industry Access to Japanese Science and Technology held this past March and co-sponsored by, among others, the Department of Commerce. At that time, I had the opportunity to meet a number of senior Japanese and U.S. government/industry participants who encouraged me to go forward with the development of the above-mentioned concept.

I am hoping your calendar will permit me the opportunity to discuss your reactions to the enclosed concept outline and the specific role which we hope you might play in relation to this event. I plan to be in Washington on Monday, May 20 and would appreciate the chance to stop by your office to discuss this with you.

You should know that Japan External Trade Organization (JETRO) executives have been approached with a similar version of the attached concept. They have responded favorably. At this time, they are polling individual Japanese private-sector organizations engaged in environmental technology manufacturing and joint venture activity with U.S. firms to establish their participation and financial sponsorship.

Clearly, this will be a "by-invitation-only" event designed to attract an elite group of between 100-150 senior government and industry executives. Participants will be those interested in moving forward to engage in bi-lateral strategic alliances in environmental technology and case-study discussions concerning current and future innovative applications in that area.

I look forward to your reactions and thank you for your interest and consideration of the concept.

Sincerely yours,

Michael D. Erony, Ph.D.

Michael D. Erony, Principal
6230 N. San Gabriel Blvd. - Suite #21
San Gabriel, California 91775
Telephone: (818) 285-8492
Facsimile: (818) 287-0222

W. Mark McKibben, Principal
10018 Nevada Avenue
Chatsworth, California 91311
Telephone: (818) 998-1661
Facsimile: (818) 998-2073

Concept Outline Submitted to
Office of Science and Technology
The White House

For

The U.S. - Japan Environmental Technology
Exposition:

S.O.S. - Strategic Opportunities for Survival

Presented By

Erony, McKibben & Associates

Erony, McKibben & Associates

S.O.S. - Strategic Opportunities for Survival

U.S. - Japan Environmental Technology Exposition: S.O.S. - Strategic Opportunities for Survival

[A] THE MISSION:

Erony, McKibben & Associates is a consulting group with over 60 years of accumulated expertise in the development and implementation of educational programs, seminars, conferences, public policy and government relations. Information technology management and business development project activity for the global communications industry have been the major thrust of our operations. It is for this purpose that we are pleased to submit a proposal to develop a U.S. - Japan Environmental Technology Exposition. The Exposition will have the following primary objectives:

[A.0] Develop the first in a series of regional events designed to promote the mutual sale of environmental technology to both U.S. and Japanese corporate executives and government officers.

[A.1] Stimulate marketing opportunities for U.S. and Japanese corporate/government participants in environmental technology by structuring opportunities for joint ventures, technology transfers, research and development and the import/export of products and services.

[A.2] Provide an on-going forum to inform high-level U.S./Japanese corporate and governmental decision makers of potential strategic alliances in a variety of environmental technologies.

[A.3] Promote U.S./Japanese corporate image-building by meeting the marketing goals and objectives of individual corporate conference participants.

[A.4] Contribute to fostering a more productive and effective U.S./Japanese trade relationship.

[A.5] Facilitate the implementation of previous public policy initiatives undertaken by U.S. and Japanese agencies and organizations through structured information exchange opportunities. (This could be accomplished through panels, round-table discussions and business consultations.)

[A.6] Feature and incorporate state-of-the-art broadcast/long distance education technology to bring U.S./Japanese corporate and government conference activity to a broader professional and public audience.

[B] THE UNDERLYING LOGIC:

The U.S. and Japan have a tendency to look at economic, trade and global policy issues in terms of what divides us rather than to seek out common interests. The people of both countries have mutual global environmental concerns. The quality of life is in jeopardy and may be in significant decline due to inefficiencies and

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S.O.S. - Strategic Opportunities for Survival

waste in our use of resources, products and services. These factors offer a unique opportunity to emphasize the ties that bind, rather than irritants that divide.

The U.S. and Japan can respond constructively by developing an on-going series of conferences/expositions which bring together a select number of the key U.S./Japanese government decision makers. The focus would be to forge and implement strategic alliances. These can be accomplished through information exchange, joint ventures, research and development collaborations, partnering and equity investment in our bilateral environmental technologies.

The time is right for such exchanges as illustrated by two recent events. The first was a conference on U.S. industry access to Japanese science and technology which was jointly sponsored by the U.S. Department of Commerce's Technology Administration, the White House Office of Science and Technology Policy and the U.S. Department of State. Their motivation was Japan's growing role as innovator and manufacturer of new technologies. U.S. government policy is rapidly forcing change upon manufacturers in this country. It is now vital to their *very survival* for U.S. companies to monitor, understand and enlist Japanese scientific and technological developments in a range of industries, in general, and environmental technology, in particular.

The second event occurred in the global environmental policy arena. A meeting hosted by the International Chamber of Commerce, which was attended by 700 business leaders, convened in Rotterdam, Holland, in April of 1991. Forty-seven U.S. firms joined 103 other companies as signatories to an agreement to pursue sustained development and to make environmental management a high corporate priority. Notably absent, however, were the banks, which finance business investment, and insurance companies, which guarantee against financial loss from environmental disasters. These companies must be involved in the U.S./Japan Environmental Technology Exposition.

[C] THE CONFERENCE PARTICIPANTS:

The U.S./Japan Environmental Technology Exposition (**Strategic Opportunities for Survival or S.O.S.**) will attract participants from among the elite U.S./Japanese senior executive corps. Senior executives would include Presidents/CEOs, Chief Financial Officers, Executive Vice Presidents, Directors of International Business Development, Corporate Strategists, Marketing and Sales Executives. A preliminary list of U.S. and Japanese-based government agencies and corporations follows:

Initial List of Japanese Government Agencies and Organizations

Consulate General of Japan
JETRO
MITI (AIST)
Indus. Pollution Control Assoc
NEC America, Inc.
Mitsubishi Corp. (Trading)
Toshiba
C. Itoh (Trading)
Tohoku Electric Power

Nissan Motor Co., USA
Mazda R&D of North America
Toyota Motor Co., USA
Fuji Electric Corp. of America
Japan Environmental Agency
NEDO
MITI (ANRE)
NEC - Tokyo
Japan Airlines

Mitsubishi Motors Co.
Fujita (construction)
Hitachi
Nissho-Iwai (trading)
Nissan R&D
Fuji Electric Corp.
Toyota Technical Center

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S.O.S. - Strategic Opportunities for Survival

Initial List of U.S. Government Agencies and Organizations

The White House

U.S. Department of Commerce (USDOC)

Environmental Protection Agency (EPA)

U.S. Department of State (USDS)

Southern California Air Quality Management District (SCAQMD)

California State Government agencies

Utility companies (Department of Water and Power, Southern California Edison, Southern California Gas)

Disaster Preparation Agencies

Corporate representatives from the banking, insurance, oil, chemical and telecommunications industries

U.S. organizations that are currently engaged in joint research and development and joint ventures with Japanese companies in the U.S.

[D] DESIRED WHITE HOUSE PARTICIPATION:

Erony, McKibben & Associates believes that your endorsement for the U.S. - Japan Environmental Technology Exposition: *S.O.S.* Project is essential. Specifically, we ask that you participate in the following ways:

[D.0] Provide a written letter of endorsement for the U.S./Japan Environmental Technology Exposition: *SOS* Project.

[D.1] Sponsor meetings with potentially-interested U.S. businesses as appropriate.

[D.2] Provide exposition production staff with personal introductions to U.S. corporations for individual presentations.

[D.3] Identify U.S. companies that are involved with or anticipating joint venture activity with Japanese corporations in the R&D, environmental projects areas. (i.e. Mitsubishi and American Capital Research, Fairfax, VA, a joint venture engaged in bidding for domestic/foreign contracts for the air pollution control program for Taiwan, Boston Harbor, etc.)

[E] THE CONFERENCE CONTENT:

[E.0] **Erony, McKibben & Associates** will organize and produce a two-day conference and exposition at a hotel/resort complex in a location to be determined. Exhibit space for U.S. and Japanese corporate/government exhibitors will be available.

Erony, McKibben & Associates

S.O.S. - Strategic Opportunities for Survival

[E.1] Conference organization will include two days of educational presentations, panel discussions, round-tables and exposition.

Pre-Activities: The evening prior to the event will feature an "Environmentally-Safe" Reception and Networking Session.

Day One: The first day will provide a plenary session in the morning, followed by luncheon with a keynote speaker. Exhibits will be open in the afternoon followed by breakout sessions featuring panel and roundtable discussions, workshops and debates. A dinner highlighting the new technologies discussed during the educational sessions will close out the day.

Day Two: Morning exhibits and demonstrations will be followed by a "Power Lunch" program to promote opportunities for business contacts and discussions. A plenary session with heavy-weight speakers will conclude the conference at 5:00 p.m.

A spouse program will be available.

[E.2] Conference Proceedings will be bound for distribution and will be available to all registrants. The contents will include all speaker presentations, papers and graphics.

[F] THE BENEFITS:

[F.0] Significant U.S./Japanese business activity in environmental technology will be generated by the event.

[F.1] The initial pilot conference will be repeated on a regional basis successively over a two-year time period.

[F.2] The U.S./Japanese sponsors will achieve a high-level, positive profile through a combination of media (radio/TV talk show activity, press interviews, cable/satellite coverage) and business consultations. It is our goal to help those sponsors to achieve their marketing goals in the U.S.

[F.3] New or consolidated bilateral environmental public policy structures, activities and linkages will result as an outgrowth of discussion held in the course of the exposition.

[G] THE CONFERENCE EVALUATION:

[G.0] A written evaluation will be completed by registrants during the conference.

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S.O.S. - Strategic Opportunities for Survival

[G.1] A tracking mechanism (questionnaire) will be developed and mailed to all registrants following the conference to assess the nature of business activities undertaken with U.S./Japanese companies.

[G.2] A conference report will be authored by Exposition Staff and the Conference Steering Committee summarizing all registrants' evaluations and returned questionnaires. The report will serve as a planning tool for future events and be presented to the Conference Sponsors for their information and follow-up.

[H] CONCLUSION:

It is our belief that the 1988 Science and Technology Agreement between the U.S. and Japan has not been utilized effectively. It is our purpose to provide a solid vehicle for the disbursement of information and business opportunities in the environmental arena between the two countries. In the process, we will also assist U.S./Japanese corporations to achieve their marketing goals. It is important to keep in mind that the evolving environmental mandates placed upon U.S. corporations by our government make the timing and need for such a conference even more critical.

Strategic Opportunities for Survival is distinctive in that it focuses on the Japanese experience in deploying environmental technology and provides a unique forum for promoting U.S./Japanese business alliances.

Erony, McKibben & Associates

A Professional Association

FAX COVER SHEET

DATE: May 10, 1991

PLEASE DELIVER TO: Ms. Damar Hawkins

THIS MESSAGE IS FROM: Mark McKibben

NUMBER OF PAGES TO FOLLOW THIS COVER SHEET:

PLEASE ☎ (818) 998-1544 IF TRANSMISSION IS NOT LEGIBLE.

MESSAGE TEXT:

Dear Ms. Hawkins:

I apologize for the poor quality on our last fax. Please let me know if there are any pages that don't come through.

Thank you.

Sincerely,



W. Mark McKibben

MS
Assigned to R. [unclear]
n/A
du
5/10

Erony, McKibben & Associates

A Professional Association

RECEIVED

May 9, 1991

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Nissan Motor Co., USA
Mazda R&D of North America
Toyota Motor Co., USA
Fuji Electric Corp. of America
Japan Environmental Agency
NEDO
MITI (ANRE)
NEC - Tokyo
Japan Airlines

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Strategic Opportunities for Survival is distinctive in that it focuses on the Japanese experience in deploying environmental technology and provides a unique forum for promoting U.S./Japanese business alliances.

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A Professional Association

MICHAEL D. ERONY, PH.D. - A PROFESSIONAL PROFILE

Michael D. Erony has amassed 20 years of expertise providing and partnering business relationships, joint ventures and executive development training programs for top-level government, corporate and academic leaders from the United States and the Pacific Rim nations, and Japan in particular.

His extensive background in government relations, public affairs and with corporate clients in these countries has led a number of organizations and government agencies to seek out his consultation. Included among them are the U.S. Joint Economic Committee of Congress, Ministries and government agencies of the U.S., Japan, South Korea, ASEAN countries, The World Bank, Mitsui Bank-Research Institute, Fuji Corporation, The Japan Technology Transfer Association, The Japan Satellite University Consortium, Bell Atlantic International, Northern Telecom, Bell South and NYNEX.

In 1989, Dr. Erony created **Erony & Associates** to provide management services to information technology providers and users in the U.S. and Pacific Rim region. Most recently, sixteen companies of the **Mitsubishi Group** retained his firm to develop information-exchange and business development opportunities with U.S. academic and business organizations in strategic information systems, information engineering, computer integrated manufacturing and office systems areas.

Dr. Erony became **Assistant Director of Program Development for the Center for Telecommunications Management (CTM) - School of Business Administration at the University of Southern California** in January, 1988. He lectured in the Center's executive education programs and managed a multi-million dollar research and executive development program expansion campaign for managers in the global telecom industry. He is now **Senior Advisor to the Center in Research and Program Development**.

Prior to 1988, Dr. Erony was a **Fulbright Research Fellow at The University of Tokyo**, completing his doctoral dissertation research on the privatization of **Nippon Telephone and Telegraph Corporation, Inc.** He is presently completing a book on the subject.

Dr. Erony's experience in the Pacific Rim, combined with his facility in the Japanese language, led to his appointment in 1985 as the **first foreign internal consultant to the Institute of Administrative Management (Prime Minister's Office - Government of Japan)** and the **Corporate Planning and Strategy Headquarters of Nippon Telephone and Telegraph Corporation**. He advised both agencies on models of privatization and the evaluation of the process for Japan's government and corporate leadership.

Listed in **Who's Who in California** since 1986, he has served as **Program Director of the International Public Administration Center-University of Southern California (1984)** and as **Assistant to the Director of the Joint USC/UCLA East Asian Studies Center (1982-1984)**. He is an alumnus of the **Los Angeles CORO Public Affairs Fellows Program, Class of 1980**.

Numerous professional memberships include: **Counselor to the Asiatic Society of Japan**, **The International House of Japan**, **Association of Japanese Business Studies**, **Association of Asian Studies**, **Phi Alpha Alpha (National Honorary Professional Fraternity - Public Administration)**, the **Pacific Telecommunications Council-Honolulu**, the **L.A. Chapter of the Japan-American Society**, and the **5:01 Club**.

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Facsimile: (818) 998-2073

McKibben Consulting

International Telecommunications Specialists

CAROL F. MCKIBBEN - A PROFESSIONAL PROFILE

Carol F. McKibben joined **McKibben Consulting**, a project management and communications consulting firm, on May 1, 1991. Her diverse background provides the firm with 28 years of experience in **advertising, marketing, public relations, business management, writing, publishing, education** through both teaching and curriculum creation and coordination, and **event and meeting planning**.

Previous to becoming a senior partner with **McKibben Consulting**, she was **Vice-President/Publisher** of **Special Events** magazine at **Miramar Publishing Company** in Los Angeles. She began in 1982 as **Director of Market Development**, sourcing and implementing new profit centers and instituting marketing and management systems for the rapidly-growing company and its trade publication properties. In 1984, she took over as **associate publisher/editor** of **Special Events**, a recent start-up, and undertook the development of an exposition and conference for the yet-to-be-defined special events industry. Over the next seven years, McKibben planned, organized, promoted and managed every detail for both, taking them both from ground zero to multi-million-dollar properties.

In the process, the magazine became the business bible of its industry, and the convention served as the catalyst that identified and united the multiple-billion-dollar special events industry. **The Special Event**, the annual trade show and conference, has become the standard by which special events and meeting professionals work. It is attended by approximately 3,500 leading event and meeting professionals and provides them with new creative ideas, methodology and information for the ensuing year through exhibits, events and some 55 educational sessions. McKibben additionally is a founding member of the industry's association, **The International Special Events Society (ISES)**, and one of its two honorary lifetime members.

McKibben has become noted for her team building and management skills in business and is a **frequent speaker** addressing management, marketing and the event market at a variety of associations and meetings. Her **column**, which continues in **Special Events** magazine, is read by more than 30,000 professionals monthly. She, additionally, continues as the **educational director** for the magazine's convention.

Before beginning her career in the publishing and events industries, Carol McKibben worked as a **free-lance writer, editor, marketer and teacher**. She taught both creative writing and mass communications on the college and high school levels for ten years. She is one of eight who wrote and piloted the **Orange County, Florida, educational program for Gifted and Talented Students** which was permanently adopted by that state. She developed both a **journalism program** for **Groveton High School**, Alexandria, Virginia, and an **educational forum** between students and journalists for the **Alexandria School System**. She has a **B.A. in English and Journalism** and a **Master of Arts in Teaching**.

Memberships include the **Western Publishers' Association**, **The International Special Events Society**, **the National Association of Exposition Managers**, **The American Marketing Association** and **Meeting Planners International**. She is the recipient of **The President's Award for Outstanding Service** to the special events industry presented by ISES in 1988 and is listed in the **Who's Who of American Women in Business**.

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McKibben Consulting

International Telecommunications Specialists

W. MARK MCKIBBEN - A PROFESSIONAL PROFILE

In 1984, W. Mark McKibben launched his own consulting firm after leaving his position as **Senior Vice President of Engineering and Operations** for **Wold Communications**. Over the ensuing years, **McKibben Consulting** has amassed the resources to provide multi-national companies with a broad range of business development and information technology project management services. The firm specializes in delivering expert, practical advice to clients attempting to balance complex technological, regulatory and business management requirements.

Before founding his own company, McKibben was responsible for the construction and operation of the facilities of **Wold Communications, Inc.**, a Los Angeles-based satellite communications common-carrier. (Wold and Bonneville Satellite Communications have since merged to become **Keystone Communications**.) One of McKibben's initial exploits at Wold was to deploy the broadcast industry's first satellite television uplink truck in spring of 1980.

During his tenure at Wold, McKibben built an array of television and radio technical operations centers, master satellite earth stations, microwave systems, and transportable uplinks. These multi-million-dollar facilities formed the backbone of an extensive nationwide telecommunications network . . . providing literally millions of transmission hours to companies such as: CBS; ABC; NBC; CNN; ESPN; The Disney Channels; Select TV; hundreds of television and radio stations; and, thousands of cable-related companies.

Wold Communications pioneered syndicated television programs via satellite with Paramount's *Entertainment Tonight* show. McKibben established the **Wold Satellite Network** . . . linking, for the first time, all U.S. independent and network TV stations so that *Entertainment Tonight* could be delivered within minutes after the show's production. *Wheel of Fortune* and *Jeopardy* were among many shows to appear shortly thereafter on this trail-blazing network. Wold set the industry standards for satellite-delivered, syndicated television programming.

Before Wold, McKibben was the **Assistant Director of Satellite and Corporate Engineering** for the **Mutual Broadcasting System**. In 1978-79, he implemented the first *satellite-only*, commercial radio-network distribution system. This innovative \$12-million system gave Mutual the ability to deliver live programming (such as *The Larry King Show*) to over 1,000 radio stations simultaneously with incredible clarity.

McKibben's career path began in radio during the early 1970s. After several years as an on-air announcer, he made a transition into the broadcast-engineering arena. Before accepting the position at the **Mutual Broadcasting System**, McKibben served as **Director of Engineering and Operations** for several broadcast facilities in Florida including: **WKIS-Orlando** and **WRMF-Titusville**. McKibben designed and built the facilities of **WPLP-Pinellas Park/Clearwater**, Florida . . . as well as several sound recording studios in that area.

McKibben has achieved a very high satellite industry profile and maintains countless contacts. He is the president of the LA Chapter (and serves on the international Board of Directors) of the **Society of Satellite Professionals International (SSPI)**. He is an active member of both the **Society of Broadcast Engineers (SBE)** and the **Society of Motion Picture and Television Engineers (SMPTE)**. The **National Association of Radio and Television Engineers (NARTE)** has certified McKibben as a *Class 1 Engineer* with *Master* level endorsements in both RF and non-RF radiation subcategories (the highest grade available). He has held a **Federal Communications Commission** license since 1971 and, in 1985, was granted a *Lifetime General Class Radiotelephone* license . . . now the FCC's highest license grade.

W. Mark McKibben, Senior Partner
Telephone: (818) 998-1661
Facsimile: (818) 998-2073

McKibben Consulting
10018 Nevada Avenue
Chatsworth, California 91311

Erony, McKibben & Associates

A Professional Association

ALAN GERSHMAN - A PROFESSIONAL PROFILE

Alan Gershman brings to the **Strategic Opportunities for Survival (S.O.S.)** conference/exhibition proposal more than 25 years of experience in the **political, governmental, and community affairs dynamics of the State of California and the City of Los Angeles.**

More recently, Mr. Gershman has served as **consultant and/or marketing advisor** for public and private sector clients on **environmental/conservation issues, products and educational/conference programs.**

Mr. Gershman was a member of the **Los Angeles Board of Education (1981-1989)**, elected to represent all of the Westside of the City. Prior to and during these years, he was the **manager of governmental and community affairs** for **GTE - California**, and served as a **consultant** to the **President and other executives** of this major California telecommunications company.

Gershman's previous experiences include: **Legislative Analyst for the Los Angeles City Council**, working primarily on city planning and budget issues; **Chief Deputy to Councilman David Cunningham** of the **City's Tenth Council District**; **Consultant to committees of the California State Assembly**; **advisor to then-Assemblywoman, now-Secretary of State, March Fong Eu**; and, **consultant to the California Center for Education in State Government.**

Gershman has extensive contacts and working relationships with business, political, governmental, educational and community leaders and organizations both in Los Angeles and throughout California.

Alan Gershman holds a **Bachelor's Degree in Social Studies and English**, and **Master's Degree in American Studies**, and **lifetime teaching credential and administrative credential** from **California State University of Los Angeles**. He is a graduate of the **Coro Foundation Fellowship in Public Affairs (Los Angeles.)** He is the recipient of numerous awards and honorary designations; and, continues active participation in many community/civic organizations, particularly those serving youth.

Michael D. Erony, Principal
6230 N. San Gabriel Blvd. - Suite #21
San Gabriel, California 91775
Telephone: (818) 285-8492
Facsimile: (818) 287-0222

W. Mark McKibben, Principal
10018 Nevada Avenue
Chatsworth, California 91311
Telephone: (818) 998-1661
Facsimile: (818) 998-2073

To: JTR
The US-Japan
semiconductor agreement
was successfully
concluded. Bill
Whymann would
know details.
Glen

Document Originally
Attached to
Following Page

personal

United States Department of State

*Under Secretary of State
for Economic Affairs*

Washington, D.C. 20520

April 9, 1991

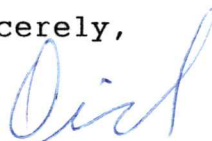
Dear Allan:

I want to draw to your attention a draft provision in the bracketed text of a new US-Japan Semiconductor Arrangement submitted by the Japanese. It calls for "full and equitable access for foreign companies to patents resulting from government-sponsored research and development in this area..." As I interpret this, Japanese companies would have access to patents of SEMATECH, government labs, and university research conducted with government funds.

This provision would benefit Japanese interests at US expense, and it does not appear to be appropriate for a semiconductor arrangement whose purpose is to prevent Japanese dumping of semiconductors and to provide access to the Japanese market for US producers.

Will you give some thought to this and weigh in with USTR? The next round of negotiations is scheduled for April 18-19 in Tokyo with AUSTR Don Phillips leading the delegation.

Sincerely,



Richard T. McCormack

The Honorable
D. Allan Bromley,
Assistant to the President for Science
and Technology,
Old Executive Office Building, Room 360,
Washington, D.,C. 20506.

8
2023933911 STR Washington 04/04/91 1745

Semiconductor Industry Association]/[The Government of Japan will encourage the International Semiconductor Cooperation Center, the User's Committee of Foreign Semiconductors of the Electronic Industries Association of Japan, and other related organizations) to play a central role in organizing such activities as seminars; exhibitions; study and research by joint committees and task forces; and trade missions. (The Government of the United States of America will encourage the Semiconductor Industry Association and other related organizations to play a central role in organizing the above activities.)

These activities should be aimed at (a) promoting increased information exchange and mutual understanding and (b) leading to increased market access (opportunities) for foreign suppliers. (no)
The two Governments support these activities.

DES 11/2
[9. The Governments of Japan and the United States of America reaffirm their determination that there should be full and equitable access for foreign companies to patents resulting from government-sponsored research and development in this area, and the two Governments have every intention to refrain from policies or programs which stimulate inordinate increases in semiconductor production capacity.] [See U.S. paragraph #10 in the General Provisions.]

[10. In measuring progress towards improving market access under this Arrangement, the key factor to be examined by the Governments of Japan and the United States of America will be the foreign share of the Japanese market as it relates to the U.S. industry expectation and the provisions of paragraph 3 of this section. In addition, the two governments should take into consideration such elements as:

- a. increased numbers and anticipated value of foreign semiconductor design-ins as compared with market growth; and -
- b. increased numbers of long-term buyer-seller relationships between foreign suppliers and Japanese semiconductor users;

The purpose of these reviews is to identify areas impeding market access and to correct any deficiencies in the efforts being made.]

[11. In reviewing market growth and sales of foreign capital-affiliated semiconductors, both governments agree to support and use the statistical system outlined in Annex C.]

Methodology?

logged

"CORRESPONDENCE TRACKING"

TYPE: ACTION

DOCUMENT NUMBER: 9121017

FROM: ARMACOST, Michael H.: AMBASSADOR OF THE U.S.A., TOKYO

TO: DR. BROMLEY

DATE OF
CORRESPONDENCE: 03/22/91

SUBJECT: CONCERN OVER POSSIBLE ECONOMIC & POLITICAL REACTIONS
IN THE U.S. TO THE INVESTMENT BY JAPANESE FIRMS IN
RESEARCH FACILITIES IN OR WITH U.S. UNIVERSITIES.

ASSIGNED TO: Thomas Ratchford BW

ACTION REQUIRED: FOR DAB SIGNATURE

SENDER'S DUE DATE: OSTP DUE DATE: 04/19/91

DATE COMPLETED: -----

COPIES TO: D. Allan Bromley
Dr. Phillips

WHITE HOUSE TRACKING #:

CONTACT PERSON:

REMARKS:

DATE RECEIVED: 04/05/91

FILE: INTERNATIONAL - JAPAN

9/2/017

THE WHITE HOUSE
WASHINGTON

April 23, 1991

Dear Ambassador:

I appreciate your concern and interest in the issue of Japanese support for research at U.S. universities. I agree that in the public debate, the Japanese are receiving two different signals: the "U.S." wants the Japanese to support basic research in the United States but, at the same time, there is growing concern about the impact of the Japanese role in the U.S. research community on U.S. economic competitiveness. The former view has been expressed by Frank Press at the National Academy of Sciences' 1990 Annual Meeting. The latter view is expressed by Pat Choate and Ronald Morse at the Economic Strategy Institute.

As you point out, there is tension between these two arguments, though I believe they are not entirely inconsistent. The different actors behind and dimensions to the question of foreign support for U.S. university research produce these complications. Among these are the role of foreign governments in guiding this support; whether the research is focused on areas of significant commercial potential and grouped in "critical technologies;" the nature of the research: is it basic or more applied; the effect of such support on the participation of U.S. companies in university programs such as industrial liaison programs; and the special access which the funding organization often receives in terms of pre-publication review or special licensing and patenting privileges. In addition, the plurality and decentralization of the U.S. university and research community produces a cacophony of conflicting voices which represents many diverse viewpoints.

While there has been no "comprehensive and systematic study" as you suggest, there has been considerable work done on the issue. In particular, the General Accounting Office, at the request of Senator Bentsen, performed two studies. The first is on foreign firms' and governments' sponsorship of research in U.S. universities. The second is a related study on foreign sponsorship of research and development in areas of commercial importance at Federal laboratories. I enclose both these studies for your perusal. In addition, the National Science Board formed a committee which examined foreign involvement in U.S. universities. This study goes beyond the issue of foreign funding of research and looks at the role of foreign students, foreign support of foundations and other questions. I include this study as well.

I am concerned, as you are, that there is significant potential for backlash in Congress against the Japanese or against the rich tradition of academic freedom which has been so important to nurturing scientific endeavor at our universities. I agree that a backlash against either would be harmful to the interests of the United States.

Ambassador Michael H. Armacost

April 22, 1991

Page two

To pursue the question further, I have set up a small group to examine the general question of foreign involvement in the U.S. university and research community. I will, of course, share any conclusions which may result.

I plan to come to Tokyo to co-chair the Joint High Level Committee Meeting of the U.S.-Japan Science and Technology Agreement, scheduled for October 17 and 18. I look forward to discussing this and other issues with you at that time. In the meantime, please do not hesitate to contact me or my Associate Director for Policy and International Affairs, J. Thomas Ratchford, with interim comments or questions.

Just last night I met with a group of fifty U.S. graduate students in science and engineering who are going to Japan. They will spend eight weeks this summer doing research in Japanese government and industry laboratories under a National Science Foundation-Science and Technology Agency program. I understand that last year, the first of the program, the group visited the embassy and that you have been very supportive of the program.

I hope we can do more of this kind of constructive action in the future and I am interested to hear your views on ways in which we can strengthen science and technology cooperation with Japan and further U.S.-Japan relations.

Sincerely,



D. Allan Bromley
The Assistant to the President
for
Science and Technology

Enclosures

Ambassador Michael H. Armacost
Embassy of the United States of America in Japan
APO San Francisco 96503

*I enclose with pleasure your
summer appearance with the
Director of USC Inc a few
years ago.*
2003



912/017
RECEIVED

AMBASSADOR OF
THE UNITED STATES OF AMERICA
TOKYO

91 APR 5 P4:43

March 22, 1991

OFFICE OF THE
DIRECTOR

D. Allan Bromley, Director
Office of Science and Technology Policy
Executive Office of the President
Washington, DC 20506

Dear Professor Bromley:

I am increasingly concerned over the possible economic and political reaction in the U.S. to the investment by Japanese firms in research facilities in or connected with U.S. universities. On the one hand, the President of the National Academy of Sciences Frank Press has urged the Japanese to support basic research in the United States. As if to respond to Dr. Press, Japanese companies have taken out advertisement supplements in Scientific American calling attention to their support for research facilities in the United States.

On the other hand, the New York Times has carried criticisms of the Japanese investments in U.S. basic research for gathering up the best U.S. scientific talent to promote Japanese technological advances. M.I.T. was so stung by the criticisms in the Congress and in the media of its contract to help establish a Media Lab in Japan that the university has created a faculty study group to "reflect on the conflict between the obligations of the university to the nation and to the larger international community" and to recommend a course of action. In a recent not fully evaluated report, the Japanese government is all but accused of encouraging Japanese firms to tap U.S. basic research and gain total control of the applications.

While we continue to see scattered reports in the press about this issue, we know of no comprehensive and systematic study of the investment by Japanese firms in university research facilities and of the potential impact on U.S. competitiveness. We do not know, for example, to what extent this investment produces proprietary information and patents of commercial value to the Japanese investor. Yet, our sense here is that there is a significant potential for a backlash in Congress either against the Japanese or against the traditional freedom enjoyed by our universities. In either case -- and both could eventuate -- the result could be unfortunate for the U.S.-Japan relationship and for academic freedom.

I raised this general issue a few days ago with the Chief Executive Officer of Toshiba, Joichi Aoi, and his senior staff. They responded by describing the cooperative arrangement between Toshiba and the Cavendish Laboratory at Cambridge under which the results of collaborative research are open and published. (Interest was expressed also in developing a similar cooperative arrangement with an American university.)

This could be the direction in which we should quietly steer the Japanese; namely, that Japanese firms and government agencies should confine their investment in U.S. universities to open and publishable basic research in which any patent rights would be jointly owned -- although it is hard to imagine Cavendish outpacing Toshiba to the market place. This approach would meet only one aspect of our competitiveness concern, but at least it seems like a reasonable and defensible position.

I look forward to discussing this and other issues in the U.S.-Japan relationship when you come here next autumn for the high-level meeting on scientific and technological cooperation. In the meantime any enlightenment you can shed will be greatly appreciated.

Sincerely,

A handwritten signature in dark ink, appearing to read "Michael H. Armacost". The signature is fluid and cursive, with a large, sweeping flourish at the end.

Michael H. Armacost

"CORRESPONDENCE TRACKING"

TYPE: INFORMATION

DOCUMENT NUMBER: 9120793

FROM: MORI, Wataru: COUNCIL FOR SCIENCES & TECHNOLOGY, JAPAN

TO: DR. BROMLEY

DATE OF
CORRESPONDENCE: 03/12/91

SUBJECT: A COPY OF THE FULL TEXT OF MORI'S PRESENTATION AT
THE SYMPOSIUM IN AAAS ANNUAL MEETING.

ASSIGNED TO:

ACTION REQUIRED:

SENDER'S DUE DATE:

OSTP DUE DATE:

DATE COMPLETED:

COPIES TO: D. Allan Bromley
Thomas Ratchford

WHITE HOUSE TRACKING #:

CONTACT PERSON:

REMARKS:

DATE RECEIVED: 03/18/91

FILE: INTERNATIONAL - Japan

9120793

RECEIVED
COUNCIL FOR SCIENCE AND TECHNOLOGY
PRIME MINISTER'S OFFICE, JAPAN

Kasumigaseki 2/2/1, Chiyoda-ku, Tokyo 100 JAPAN
Phone: (81) (3) 3581 5271, Fax: (81) (3) 3581 3079

OFFICE OF THE
DIRECTOR
March 12, 1991

Dr. D. Allan Bromley
Assistant to the President
for Science and Technology
The White House
Washington

Dear Dr. Bromley:

The first meeting of "Carnegie Group" held at Seven Springs Center was a great success. And it was also very fruitful for me personally.

Although the meeting has just started, I believe it will internationally play a very important role in S&T policy, in the very near future.

I am enclosing a copy of the full text of my presentation at the symposium in AAAS Annual Meeting. This is also the one which I explained at the meeting in Seven Springs. Please use it for your information, and if necessary, use it as a material for the meeting.

I am looking forward to meeting you in October, or even before.

Sincerely yours,

Wataru Mori

Wataru Mori
Council for Science and Technology

Role of the Council for Science and Technology and Policy Issues in Japan

Wataru Mori

Council for Science and Technology, Japan

Thank you Mr.Chairman. I feel very much grateful to you and members of Organizing Committee for giving me the opportunity to present my experiences in works as a member of the Council for Science and Technology in Japan. Today, I would like to speak the policy making mechanism and some policy issues in Japan, through the explanation of the outline of the Council's activities.

The Council for Science and Technology was established in the Prime Minister's Office in 1959 as the supreme deliberative organization for science and technology policy in Japan. (OHP, please) The main purpose of the Council's establishment is comprehensive coordination of the policies carried out, rather independently each other, by ministries and administrative agencies related to science and technology. And its actual task is to provide advices to the Prime Minister on, the first, establishing basic and general science and technology policy, the second, setting the long-term goal of R&D, and the third, formulating basic plan for R&D toward such goal. The Council recommends at the request of the Prime Minister, or suggests to him on its own initiative. In particularly, its establishment law provides that the Prime Minister must respect recommendations and suggestions of the Council.

The Council is unique in its members. (next OHP please) It is chaired by the Prime Minister Kaifu himself. And it is composed of 10 other

members. Minister of State for Science and Technology, Minister of Education, Science and Culture, Minister of Finance, Minister of State for Economic Planning, and President of Science Council of Japan, become the member of the Council *ex officio*. Other 5 members are appointed among prominent experts, and Mr. Osawa and I are working full-time and other 3 are part-time members. In the plenary meeting which is held two or three times a year, other science-and-technology-related Cabinet ministers may participate, if necessary. So, usually, some other ministers such as Minister of International Trade and Industry, Minister of International Affairs, participate in the meeting as temporary members. The expert members are appointed by the Prime Minister with the approval of the Diet. As this composition shows, the Council has the nature as both an advisory body to the Prime Minister on one hand, and a meeting of science-and-technology-related Cabinet ministers on the other. The participation of the ministers concerned, contributes toward enriching the deliberation in the Council as well as realizing its recommendations. In other words, it may be said that the Council has two characters, personal and organizational. This may be a good example that Japanese has a tendency rather to prefer organization to individual. Especially, in regarding to the realization of recommendations, this composition works very well. However, such a composition also has weakness, since the minister members hesitate to write concrete measure for promotion of science and technology clearly, sometimes. However, unless the ministers concerned put a recommendation into practice, it would be nothing but pie in the sky. Giving much attention to this point, it will be further necessary to make a recommendation and a suggestion more practicable in the future.

The plenary meeting of the Council is held only twice or three times a year, as I said. The minister members are very busy, which is one of the reasons of such small frequency of the meeting. In order to supplement this point, the Committee on Policy Matters is organized. (next OHP please) Namely, in order to ensure more timely and more flexible activities of the Council, the Committee on Policy Matters has been organized as a standing committee in charge of practical works of the Council. The Committee is composed of 14 members. It is composed of the 6 expert members of the plenary meeting and other 8 experts from private sectors and universities. It usually holds meetings twice a month. The Committee, thus, enables the Council to work full-time.

Now, I would like to explain the organization of the Council. (next OHP please) The Council has the plenary meeting, the Committee on Policy Matters, and other 6 panels. For example, the Panel on General Planning is in charge of the recommendation on basic and comprehensive policy. And, in the Panel on Research Objectives, basic plan for R&D in each specific field, is discussed. Furthermore, on formulating a recommendation, an *ad-hoc* sub-panel composed of experts in accordance with the issue, is organized for discussion. In order to cope with recent international issues, another *Ad-hoc* Committee on International Affairs has been established since 1987. Last month, this *Ad-hoc* Committee submitted to the plenary meeting, a report entitled "Toward Globalization of Science and Technology". The Council has submitted 17 recommendations and 9 suggestions so far to the Prime Minister, and published many reports for 30 years. More than 600 experts take part in formulating recommendations a year.

Next, I would like to explain the process of policy-decision-making in Japan, taking the case of a recommendation entitled "the General Guideline for Science and Technology Policy" as an example. (next OHP please)

The first step, although there are some cases that the Council submits a suggestion to the Prime Minister on its own judgment, usually the Prime Minister requests a recommendation. In the case of the General Guideline, the Council submitted the Recommendation number 11 to the Prime Minister after one year and eight months discussion. However, because the contents of this Recommendation number 11 was so wide and detailed, that the Council discussed further the items important administratively. Then, the Council submitted such an essence of the Recommendation number 11 as another recommendation, number 12, under the title "General Guideline for Science and Technology Policy", to the Prime Minister. In view of its importance, the Cabinet meeting approved specially this Recommendation number 12. Since then, the government has promoted science and technology policy based on this recommendation, considering it like the Bible. In this case, the recommendation of the Council was approved by the Cabinet meeting just as it was and there was no revision. I think this fact is very important on considering the role of the advisory organization. As I mentioned before, the unique composition of members of the Council makes a recommendation more practicable, but on the other hand, the government may show prudent behavior in the process of formulating a recommendation. Therefore, it is very important to take a moderate course, or to have good balance, between the organization and the individual, and this point should be the role of us, expert members of the Council, I believe.

We have a grant-system called "Special Coordination Fund for Promotion of Science and Technology" which is allocated for inter-

ministerial comprehensive researches in Japan. This fund has smoothly been increasing since its establishment in 1981, and now in FY 1990, it is more than 10 billion yen. The Council has authority to make decision how to use this fund. I think, this sort of authority is also quite meaningful for the effectiveness of coordination function of the Council.

I have explained the activities of the Council for Science and Technology. Now, I would like to make a few comments about the future issues of advisory body through the view of current situation around science and technology in Japan.

Recently, the contribution of science and technology to economy, society and politics has become greater than ever before. And furthermore, it is the fact that science and technology itself has become more complicated, extensive and globalized. Especially, in view of increased complicatedness of science and technology in itself and its enormously large scale, public understanding as well as consensus among researchers has become one of the most important factors for promotion of science and technology. In connection with this situation, I think, the role of science advisory body is becoming more and more, and further, important.

As well as other policies, the science and technology policy won't be accomplished without getting public consensus widely domestic and international. The international situation around Japan has been changing very rapidly. And of course, the importance of the international cooperation in the field of science and technology has been increasing, too, with globalization of science and technology. The Council has started to discuss "the new general guideline for science and technology policy toward coming 21st century". In June last year, the Prime Minister requested the

council to discuss this issue from the view-point that the new general guideline toward the next century should be the one enough to cope with the rapid changes of the recent international situation around science and technology. I hope, many policy issues in Japan will be clarified and solved during this discussion.

Many policy issues would not be overcome unless public consensus is widely obtained. I think, we also have to make stress further on this point in the process of the policy decision making. Especially, as to the discussion on public consensus in Japan, it is my impression that we have so far discussed science and technology policy only within the scientific community and among the policy makers concerned. According to the increase of the importance of science and technology in society, in the future, we will have to discuss science and technology policy much more widely, taking into account the feeling of whole society. It seems to be quite necessary for the Council to make further effort to promote public participation in its discussion, also from this view-point.

That, I would like to end my presentation. Thank you.

The Council for Science and Technology

Establishment : 1959;

Supreme Deliberative Organization for
S&T Policy

Purpose :

Inter-ministerial Coordination

Task : Advice to the Prime Minister on;

- Basic and Comprehensive Policy
- the Long-term Goal of R&D
- R&D Plan

Member of the Council

[*ex officio*]

Prime Minister : Chairman

Minister of State for Science and Technology

Minister of Education, Science and Culture

Minister of Finance

Minister of State for Economic Planning

President of the Science Council of Japan

[full-time]

Wataru MORI

Ex-President of University of Tokyo

Hiroyuki OSAWA

Ex-Vice Minister for Science and Technology

[part-time]

Yasusada KITAHARA

Advisor to the President of Nippon Telegraph and

Telephone Corporation

Shoichi SABA

Advisor to the Board of Toshiba Corporation

Kiyoji MORII

President of The Kansai Electric Power Co. Inc

Committee on Policy Matter

Wataru MORI, Chairman

Member of the C.S.T

Hiroyuki OSAWA

Member of the C.S.T

Jiro KONDO

Member of the C.S.T

Yasusada KITAHARA

Member of the C.S.T

Shoichi SABA

Member of the C.S.T

Kiyoji MORII

Member of the C.S.T

Yotaro IIDA

Chairman, Mitsubishi Heavy Industries Ltd

Kozo IIZUKA

Vice President, Japan Society for the Promotion of Machine Industry

Yoshikazu ITO

Chairman of the Board, TORAY Industries Inc

Hiroshi INOSE

Director General, National Center for Science Information System

Kunihei KISHI

Executive Director, Bio-oriented Technology Research Advancement
Institutions

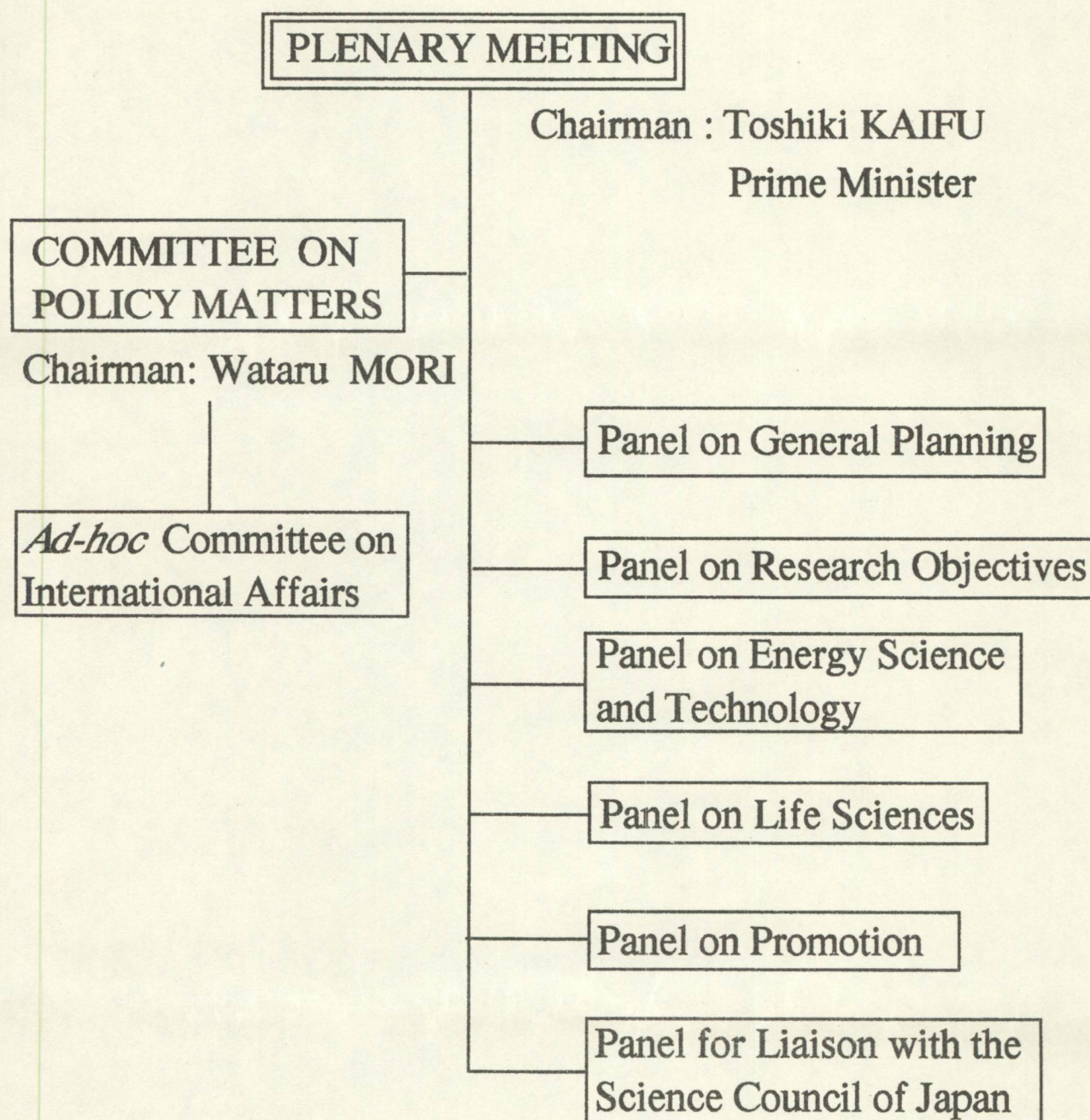
Ikuzo TANAKA

Ex-President, Tokyo Institute of Technology

Hiromichi MIYAZAKI

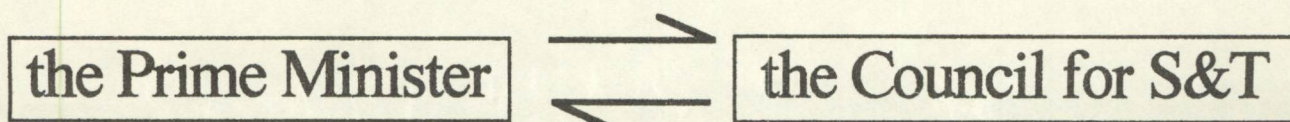
Advisor, Dai-ichi Kangyo Bank Ltd

Organization

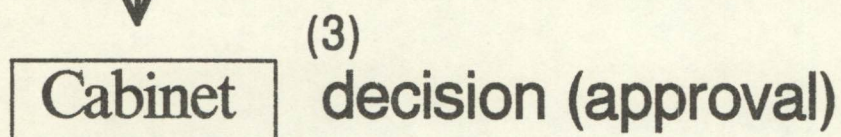


Policy Decision

(1) request



(2) recommendation



General Guideline for S&T Policy

THE WHITE HOUSE

WASHINGTON

April 4, 1991

Dear Wataru:

Under separate cover I am sending you a very large bundle of documents flowing from our meeting in Mt. Kisco.

I very much appreciate your sending the photographs taken at that time. They provide an excellent memento of the occasion and I had been somewhat sorry that we had not arranged to have a photographer present for this somewhat historic occasion.

As you will find in the material sent separately, the Carnegie Commission has graciously agreed to host our meeting again this autumn at Mt. Kisco and I am hoping that we can arrange a time that will make it possible for all members of the Carnegie Group to attend.

Let me also thank you for sending me a copy of your excellent presentation to the AAAS annual meeting. I had enjoyed it when I heard at the meeting and am delighted to have this hard copy, particularly with the copies of your viewgraphs.

It was indeed a pleasure getting to know you at Mt. Kisco and I look forward to our meeting again in this autumn, if not before.

With warmest best wishes,

Sincerely yours,



D. Allan Bromley
Assistant to the President
for
Science and Technology

Professor Wataru Mori
Council for Science and Technology
Office of the Prime Minister of Japan
Kasumigaseki 2/2/1
Chiyoda-ku, Tokyo 100
Japan

"INVITATION FOR DR. BROMLEY"

TYPE: INVITATION

DOCUMENT NUMBER: 9120435

SPEECH: YES NO

FROM: HAZELRIGG, GEORGE AND PAUL HERER

DATE OF EVENT: 03/08/91

LOCATION OF EVENT: THE NATIONAL SCIENCE FOUNDATION, ROOM 540.

TIME OF EVENT: 09:30AM

SUBJECT: INVITATION TO A WORKSHOP ON JAPANESE R & D IN
MACHINE TRANSLATION.

RSVP: 02/22/91

CONTACT PERSON: BOB WILLIAMS

CONTACT NUMBER: 301/323-1010

INVITATION ACCEPTED? YES NO

COPIES TO:

Thomas Ratchford

REMARKS:

2/22/91 - Regretted to Bob Williams!

mn

DATE OF LETTER: 02/14/91

DATE RECEIVED: 02/19/91

FILE: INTERNATIONAL-JAPAN

9120435

NATIONAL SCIENCE FOUNDATION

1800 G STREET, N.W.
WASHINGTON, D.C. 20550

RECEIVED

February 14, 1991

91 FEB 19 AM: 03

D. Allan Bromely
Assist. to Pres. for
Science & Technology
OEOB - Room 360
Washington, DC 20500

OFFICE OF THE
DIRECTOR

Dear Mr. Bromely:

I am pleased to invite you to a workshop on Japanese research and development in Machine Translation. The workshop will be held on March 8, 1991 at the National Science Foundation, 1800 G Street N.W., Washington DC, Room 540.

With support from the National Science Foundation, the Department of Commerce, and DARPA, the Japanese Technology Evaluation Center (JTEC) has organized a distinguished panel of Machine Translation experts. They have studied the recent literature and have just returned from an extensive tour of Japanese institutions and facilities. Their findings can help government and industry determine policies for research. The purpose of the workshop is to discuss the preliminary findings of the Panel with members of the policy community to help finalize the Panel's report. A draft agenda, a list of Panel members, and a list of organizations and facilities visited are enclosed.

The room capacity is limited (Room 540--the boardroom of the National Science Board), so the workshop is by invitation only. Please RSVP using the enclosed form or notify us by fax (301-532-5123).

I hope to see you at the workshop. Please call Bob Williams at 301-323-1010 ext. 2855 if you need more information.

Sincerely yours,

George Hazelrigg
George Hazelrigg

Paul Herer
Paul Herer

JTEC Machine Translation Workshop

March 8, 1991

National Science Foundation
1800 G Street, NW, Washington, DC, Room 540

DRAFT AGENDA

9:30	Registration	
10:00	Welcome to NSF	
10:10	Review of JTEC	
10:20	Foreword	Clark
10:30	Overview	Carbonell
11:00	Panel Member Presentations Begin	
12:00	Lunch (served in meeting room)	
1:00	Presentations Resume	
	Japanese MT: The State of the Art	Carbonell
	Technical Infrastructure	Johnson
	Languages and Application Domains	Wayne
	Knowledge Sources	Wilks
	Life Cycle of MT Systems	Tomita
	The User Perspective	Vasconcellos
	Quality	Satoh
	Comparison With U.S./Europe	Wilks
	R&D Efforts	Rich
	Future Directions	Rich
3:30	Summary	Carbonell
4:00	Open Discussion	
5:00	Adjournment	

MACHINE TRANSLATION PANEL

Dr. Jaime Carbonell

Director, Center for Machine Translation
Professor, Center for Computer Science
Carnegie Mellon University
Pittsburgh, PA 15213

Dr. David E. Johnson

Research Scientist
Mathematical Sciences Department
IBM Research
Yorktown Heights, NY 10598

Dr. Elaine Rich

Director, AI LAb
MCC
3500 West Balcones Center Dr.
Austin, TX 78759

Dr. Masaru Tomita

Assistant Professor
School of Computer Science
Carnegie Mellon University
Pittsburgh, PA 15213

Dr. Muriel Vasconcellos

Chief, Translation and Terminology
Pan American Health Organization
525 23rd Street, N.W.
Washington, D.C. 20037

Dr. Yorick Wilks

Director
Computing Research Laboratory
Box 3CRL, NMSU
Las Cruces, NM 88001

MACHINE TRANSLATION PANEL

LIST OF SITES VISITED

Sanyo Electric Co.
Osaka

Oki Electric
Kansai Lab

Matsushita Electric
Osaka

Sharp System Products
Nara

ATR, Inc.
Kyoto

JICST
Tokyo

NEC
Tokyo

Bravice International, Inc.
Tokyo

NTT Yokosuka R&D Center
Yokosuka

Ricoh, Inc.
Yokohama

Toshiba R&D Center
Kawasaki

CICC
Tokyo

Fujitsu
Kawasaki

IBM Tokyo R&D Center
Tokyo

Hitachi
Omori

Electronic Dictionary Research
Institute
Tokyo

ICOT
Tokyo

Inter Group, Inc.
Tokyo

IBS, Inc.
Tokyo

Fuji Electric
Tokyo

NHK R&D
Seijogahama

MITI
Tokyo

JEIDA
Tokyo

JTEC MACHINE TRANSLATION WORKSHOP
INVITATION RESPONSE MEMO

To:

JTEC/Computer Science
Loyola College
4501 N. Charles St.
Baltimore, Maryland 21210

ATTN: Machine Translation

From:

Subject: Invitation to JTEC Machine Translation Workshop (3-8-91)

YES NO I will attend the workshop on
Machine Translation

YES NO My substitute

will attend

"CORRESPONDENCE TRACKING"

TYPE: INFORMATION

DOCUMENT NUMBER: 9120773

FROM: SANTO, Akiko: MINISTER OF STATE FOR SCIENCE & TECHNOLOGY, JAPAN

TO: DR. BROMLEY

DATE OF
CORRESPONDENCE: 03/08/91

SUBJECT: A THANK YOU FOR WRITING TO EXPRESS YOUR
CONGRATULATIONS ON SANTO'S APPOINTMENT.

ASSIGNED TO:

ACTION REQUIRED:

SENDER'S DUE DATE:

OSTP DUE DATE:

DATE COMPLETED:

COPIES TO: D. Allan Bromley
Thomas Ratchford

WHITE HOUSE TRACKING #:

CONTACT PERSON:

REMARKS:

DATE RECEIVED: 03/18/91

FILE: INTERNATIONAL*TKU

Japan

RECEIVED

91 MAR 18 AM 11:41

OFFICE OF THE
DIRECTOR

SCIENCE AND TECHNOLOGY AGENCY
TOKYO, JAPAN

March 8, 1991

Dear Dr. Bromley:

It was very kind of you to write and express your congratulations on my appointment as Minister of State for Science and Technology.

I look forward to working closely with you to enhance U.S.-Japan cooperation in Science and Technology, and believe that our close communication and cooperation of the scientific and technological collaboration between the U.S. and Japan will contribute to welfare and prosperity of all of the world.

I also look forward to seeing you at the Joint High Level Committee meeting this fall.

With my thanks and best wishes.

Sincerely,



Akiko Santo

Minister of State for
Science and Technology

His Excellency
Dr. D. Allan Bromley
Assistant to the President
for Science and Technology
Office of Science and Technology Policy
Executive Office of The President
Washington, D.C. 20506, U.S.A.

"CORRESPONDENCE TRACKING"

TYPE: ACTION

DOCUMENT NUMBER: 9120013

FROM: GERALD PETERS, PRESIDENT

TO: DR. BROMLEY

DATE OF
CORRESPONDENCE: 01/01/91

SUBJECT: JAPANESE TRANSLATION SERVICE

ASSIGNED TO: Thomas Ratchford

ACTION REQUIRED: DIRECT REPLY

SENDER'S DUE DATE:

OSTP DUE DATE:

DATE COMPLETED:

COPIES TO: D. Allan Bromley
Ken Yale

WHITE HOUSE TRACKING #:

CONTACT PERSON:

REMARKS:

DATE RECEIVED:

~~FILE:~~ international - JAPAN

*Pat: This is
an original &
we are supposed
to keep it.
DAB doesn't
need to
see this*



Japanese Translation Team

RR 2, Box 909
Canaan, NH 03741
TEL/FAX (603) 523-9656

January 1, 1991

9120013

Mr. Allen Bromley
Assistant to the President for Science and Technology
White House
1600 Pennsylvania Avenue NW
Washington, DC 20500

Dear Mr. Bromley:

The Japanese Translation Team, located near Dartmouth College in Canaan, New Hampshire, specializes in high-quality translations to and from Japanese. JTT's staff of native-speakers has many years of experience translating instruction manuals, patents, contracts, financial reports, sales literature, and other technical and promotional material.

We are absolutely dedicated to providing our clients with the best service: prompt, faithful, well-written translations; so important in today's international economy.

Call our office today for rates or to get a free estimate by fax.

Sincerely,

Gerald Peters, President
JAPANESE TRANSLATION TEAM



*Specializing in high-quality translations
to and from Japanese*

Gerald T. Peters
President

Japanese Translation Team

RR 2, Box 909
Canaan, NH 03741
TEL/FAX (603) 523-9656