REMARKS OF

SENATOR HUBERT H. HUMPHREY

ARMED FORCES COMMUNICATIONS AND ELECTRONIC ASSOCIATION

MAY 6, 1971

WASHINGTON, D.C.

A philosopher once said that the essence of human life is communication. I agree with him; the more perfectly people are able to communicate with each other also measures their cooperative success in fulfilling the promise of man. What a dismal world it would be if each of us were trapped inside his own skull; unable to communicate words of instruction, assent, dissent, sympathy, and love -- unable to know the feeling and the fact of our shared nature.

But, increasingly, as our society becomes ever more mobile, heterogeneous, more complex, - we are beginning to slip behind in our communications skills. Some of us are even tempted by the proposition that in our computerized society you don't have to think any more.

Well, that's just not the case, at least it can't be the case if we are going to plan and build a society that will be worth living in. Our electronic brains, if anything, are going to require people to think just that much more, and just that much faster and accurately.

There are some good ideas floating around, but the war has preempted much of the nation's brainpower. Too few of us are able to transcend the morbid fascination of death and destruction.

But even these few ideas are given short shrift. We don't seem to have the time or the patience to make a considered evaluation of these proposals; we are failing to communicate, but this failure is more than just neglecting to listen to those who envision what America can and must be like. It involves failing to accept the absolute imperative or coming to grips with what is wrong with the country and doing something about it.

"Futurology", as it has been called, need not be an academic exercise. It can be the launching point for pragmatists determined to build a better world.

The "games computers play" indicate that man might successfully make a mathematical model of a world of peace, of progress, of prosperity, of plenty.

Computers have enabled man to simulate voyages to the stars -- and, at last, in the Apollo programs, he will bring the scenario into reality. A decade of planning -- 1960 to 1970 -- has enabled us to reach this point -- to accomplish unprecedented goals in the physical and engineering sciences. Now we must plan in the next decade to use our emerging science and technology -- both physical and social -- in ways that uplift the human condition.

"Intellect annuls fate," Ralph Waldo Emerson wrote. The brain can nullify any form of human bondage -- bondage to fear, to disease, to premature death, to ignorance, to deprivation, to war.

The presence here today of so many distinguished scientists and technicans attests to our mutual desire to exchange the best within our capacity for the solution of common problems.

This cooperation in information science is not just a recent phenomenon. Thirteen years ago as Chairman of a U.S. Senate Sub-Committee, it was my privilege to be part of what might be termed the "first wave" of the information revolution.

I proposed at that time that we replace the "horse and buggy" techniques of manual indexing, abstracting, storage, retrieval and dissemination of information by setting up national and international electronic information networks. I suggested, too, a National Institute of Mathematics, together with other specialized Institutes in the physical sciences.

And I proposed a U.S. Department of Science -- not as a centralized monolith, but as a rational "home" for many widely-scattered research programs which did not have to be housed in mission-oriented cabinet departments, such as Defense.

Since then, enormous strides have been made in all areas of science and technology and in particular information science, and the pace of discovery has accelerated.

But the executive branch of the U.S. Government is just beginning to reorganize its widely dispersed science activities and it has yet to make significant use of systems engineering in fields other than military and space science.

Four years ago, when Fortune magazine looked at "The Road to 1977," it commended the systems approach as "the greatest advance in the art of government since the introduction nearly a hundred years ago of a civil service based on competence."

But the application of this approach in meeting the great domestic problems of our time has proceeded at snail's pace. The delay is usually attributed to the budgetary pinch -- another reason commonly given is the shortage of skilled, inter-disciplinary manpower (plenty available).

But the real problem is simply this -- the failure to set proper priorities.

I urge that the Congress and the executive branch mobilize task forces of systems engineers to come to grips -- in experimental pilot programs -- with each of the most pressing problems of our time, especially the crises in our nation's cities and rural areas.

Crises in such areas as crime, welfare, health care, and environmental pollution cannot be solved by the patchwork of narrow-minded specialists with tunnel vision.

Thus, the answer to the traffic congestion which paralyzes virtually every major city in our country today is not just to build more freeways or more parking lots, or install more traffic lights or recruit more policemen or give out more tickets, but to restate the overall problem in its fullest dimensions and examine every possible alternative and combination of alternatives -- their costs, their effectiveness -- in a bold and stream- lined system.

In fewer than half a dozen cities on the North American continent has there even been an attempt to apply a digital computer to overall traffic management. In only one -- Toronto, Ontario -- is there control over an entire metro- politan area.

By sheer necessity, our crowed skyways have applied systems technology at least to air traffic control. The number of airline passengers has more than tripled in 10 years -- it will double again by 1975 and triple by 1980. To move that many people, as well as baggage and general cargo efficiently and safely, is a monumental challenge to advanced systems technology.

Airline collisions and other crashes are the most dramatic illustrations of a failure within the system. But every day in other realms there are literally millions of other failures -- more subtle, less publicized, but often tragic in cost to society.

For example, we see a law enforcement and penal system which generally does not deter crime, which is so ineffective it solves only a small proportion of reported crimes. When criminals are caught, tried and convicted, the system is still almost totally ineffective in rehabilitating them.

Within the nation's ghettos, we see such inferior education that slum children fall further and further behind their more fortunate neighbors, and drop out of school at rates which doom vast numbers to life-long second-class existence.

We see welfare programs for the indigent which offer little or no incentive, much less means, to help break the cycle of dependence from generation to generation.

In the field of health, we see millions of patients fail victim to preventable disease or seek medical help long after the first symptoms appear. Grimly, they then thread their way through a maze of costly services, their chances of first-rate medical care dependent more on their bank account, their location and their luck on scientific research findings which pile up in a few modern University centers.

All the while, the overall quality of urban man's life deteriorates as the environment is ravaged by pollution, contamination and noise.

But to meet its own expanding responsibilities, the Congress should strengthen its resources for informed decision-making.

Computer technology can surely assist the Congress in mastering the over $200 billion budget, and in coping with society's interrelated problems which defy the traditional boundaries of Committee jurisdictions.

So, I look forward to the day when every Senator's and Congressman's office, as well as Congressional committees and subcommittees will have their own terminal connection to a Federal Information Bank. By teletypewriter, by light pen and video screen, the people's representatives will be able to draw instantaneously upon the deposits of facts which are needed for effective evaluation and decisions.

Another frontier of opportunity is the graphic, large-scale presentation of public problems. The Pentagon finds indispensible for purposes of command and control -- a "War Room" -- with giant blinking maps and moving symbols, fed by computers. So, too, the Congress should consider establishing a giant, computerized display, so that visitors from all over America might see -- at one glance -- the panoramic scope of changing problems and opportunities confronting the nation.

The same concept could be used at United Nations
Headquarters in the form of a "Peach Room" or "Development
Room". There, both diplomats and onlookers could grasp
in one view the enormous range of ever-changing problems --
security, economic, political and others facing mankind.

And in our own land, from grade school onward, we
should educate our children so they are at home with
inter-disciplinary, man-machine teamwork.

The classroom of tomorrow can be more than the site
of teaching machines and individualized instruction. It
can be a social laboratory in which student teams deal with
real-life problems of man and his environment.

Every part of society can be linked in an information
grid which transmits voices, data, pictures, live images,
diagrams. What is more, the communication can be two-way --
by dial and touch-tone telephone, television and especially
cable television with feedback buttons. The classroom, the
home, the office, the store, the factory, the bank are to-
morrow's input-output centers -- in ways we are only
beginning to develop.

To be sure, the future does not offer unmixed blessings.
Perils of monopoly or excessive power or infringement of
privacy do loom ahead, but so also do unprecedented promise
and hope and opportunity for building a better world.

And America could surely use what might be called
a "computer corps".   It would be composed of both skilled
manpower and computer time donated to voluntary agencies
and to social service institutions.

The existence of a computer corps would not in any
way relieve governments -- Federal, State or local -- of
the responsibility to pay their way in utilizing the new
technology.   Public research and development budgets in
human and environmental engineering will have to be in-
creased.

I am considering the feasibility of establishing a
"Humphrey Computer Corps".   We could mobilize task forces
of systems engineers and data input experts to develop
pilot programs for health, education, welfare, transpor-
tation, housing, urban-rural development, and environmental
protection.

Systems engineers along with soci logists, psycho-
logists, economists, and other subject matter experts, must
work together to present viable planning and programming
alternatives to policy makers.   It must be done and done
soon.

No city or state in the nation is today investing as
much as 1% of its budget in research and development -- a
statistic which would be intolerable in any modern corporation
instead, the cities keep applying band-aids to their social
cancers.

"Miracle" cures are not possible, but definite improvements are not only feasible but crucial.

Ask a computer what man's future will be and it may well reply, "The future is what you -- and I -- make it."

Let us reach for the stars in human goals -- just as we have reached the stars in physical conquest.

Five years ago, Norbert Wiener said, "The future offers very little hope for those who expect that our new mechanical slaves will offer us a world in which we may rest from thinking."

Thinking -- boldy, clearly, systematically -- and bringing our thoughts into reality -- must be our program for tomorrow.

#   #   #

X Mr Belcher
(Conduct election)

(President Johnson told me)

(Pres Catucci)

President
Mr Sutter –

8 yrs Ago I was here –
back again
Then Senior Senator
now Junior "

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1 Microphone,

Dr Foster
(Invocation)

Give the
Benediction

A PHILOSOPHER ONCE SAID THAT THE ESSENCE OF HUMAN

LIFE IS COMMUNICATION, I AGREE WITH HIM. THE MORE

PERFECTLY PEOPLE ARE ABLE TO COMMUNICATE WITH EACH

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SKULL, UNABLE TO COMMUNICATE WORDS OF INSTRUCTION,

ASSENT, DISSENT, SYMPATHY, AND LOVE -- UNABLE TO KNOW

THE FEELING AND THE FACT OF OUR SHARED NATURE. ~~THE~~

~~THOUGHT IS ALMOST MORE THAN ONE CAN BEAR TO CONTEMPLATE.~~

- 1 -

927

BUT, INCREASINGLY, AS OUR SOCIETY BECOMES EVER

MORE MOBILE, HETEROGENEOUS, ~~TECHNOLOGIZED~~ more, COMPLEX, —

WE ARE BEGINNING TO SLIP BEHIND IN OUR COMMUNICATIONS

SKILLS, SOME OF US ARE ~~SUCCUMBING TO THE~~ ever TEMPTed by the

PROPOSITION THAT IN OUR COMPUTERIZED SOCIETY YOU DON'T

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WELL, THAT'S JUST NOT THE CASE. AT LEAST IT can't

BE THE CASE IF WE ARE GOING TO PLAN AND BUILD A SOCIETY

THAT WILL BE WORTH LIVING IN. OUR ELECTRONIC BRAINS,

IF ANYTHING, ARE GOING TO REQUIRE PEOPLE TO THINK JUST

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IF WE ARE GOING TO KEEP AHEAD OF THE ROBOTS, WE ARE GOING

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SERVE THE CAUSE OF MANKIND.

- 2 -

928

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929

R E M A R K S

THE HONORABLE HUBERT H. HUMPHREY

~~THE WASHINGTON D.C. CHAPTER~~

~~SOCIETY FOR INFORMATION DISPLAY~~

WASHINGTON, D.C.

~~MAY 27, 1969~~

Communication

about 8 yrs ago
spoke to this
group —
back Again
Recycle

~~We are here today to share in inventing a better~~
~~future for mankind.~~

"Futurology", as it has been called, need not be an

academic exercise.   It can be the launching point for

pragmatists determined to build a better world.

The "games computers play" indicate that man might

successfully make a mathematical model of a world of peace,

of progress, of prosperity, of plenty.

Space Science brings our neighborhood

Computers have enabled man to simulate voyages

to the stars -- and, at last, in Apollo 11, he will bring the

scenario into reality. A decade of planning -- 1960 to 1970 --

has enabled us to reach this point -- to accomplish

unprecedented goals in the physical and engineering sciences.

Now we must plan in the next decade to use our emerging

science and technology -- both physical and social -- in

ways that uplift the human condition.

"Intellect annuls fate," Ralph Waldo Emerson wrote.

The brain can nullify any form of human bondage --

bondage to fear, to disease, to premature death, to ignorance,

to deprivation, to war.

Communication = Knowledge
Knowledge without commitment is
wasteful
commitment without knowledge
is Dangerous

93

The presence here today of so many distinguished

scientists and technicians ~~from overseas~~ attests to our

mutual desire to exchange the best within our capacity

for the solution of common probems.

+ This ~~international~~ cooperation in information science

is not just a recent phenomenon. *thirteen* ~~Eleven~~ years ago as

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pace. The delay is usually attributed to the budgetary pinch --

another reason commonly given is the shortage of skilled,

inter-disciplinary manpower. *(plenty available)*

unemployed
professional
man power

But the real problem is simply this -- the failure to

set proper priorities. — *Govt no program — no planning*
Congress.. - no Nat. Growth
Policy

/ I urge that the Congress and the executive branch

mobilize task forces of systems engineers to come to grips --

in experimental pilot programs -- with each of the most pressing

problems of our time, especially the crises in our nation's

cities. *+ Rural areas.*

Use of our aero-space
Personnel -

Crises in such areas as crime, welfare, health care,

and environmental pollution cannot be solved by the patchwork

of narrow-minded specialists with tunnel vision.

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936

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way through a maze of costly services, their chances of first-rate

medical care dependent more on their bank account, their

location and their luck than on scientific research findings

which pile up in a few modern University centers.

Rural america
Population growth

70% - 2% land
Ⓧ no nat. Growth Policy
where + How to Lies

All the while, the overall quality of urban man's
life deteriorates as the environment is ravaged by pollution,
contamination and noise. —

It is for good reason that the Congress has received
proposals for an Ecological Commission to study systematic
redress of environmental imbalances.

But to meet its own expanding responsibilities, the
Congress should strengthen its resources for informed
decision-making.

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The same concept could be ~~applied~~ _used_ at United Nations Headquarters in the form of a "Peace Room" — _"Development Room"_. There, both diplomats and onlookers could grasp in one view the enormous range of ever-changing problems -- security, economic, political and others facing mankind.

and In our own land, from grade school onward, we should educate our children so they are at home with inter-disciplinary man-machine teamwork.

The classroom of tomorrow can be more than the site of teaching machines and individualized instruction. It can be a social laboratory in which student teams deal with real-life problems of man and his environment.

✓ closed circuit telecasting
✓ communication satellites

"Pope Paul "Develop room for Peace"

940

001659

I AM CONSIDERING THE FEASIBILITY OF ESTABLISHING A

"HUMPHREY COMPUTER CORPS," WE COULD MOBILIZE TASK

FORCES OF SYSTEMS ENGINEERS AND DATA INPUT EXPERTS

TO DEVELOP PILOT PROGRAMS FOR HEALTH, EDUCATION,

WELFARE, TRANSPORTATION, HOUSING, URBAN-RURAL DE-

VELOPMENT, AND ENVIRONMENTAL PROTECTION.

SYSTEMS ENGINEERS ALONG WITH SOCIALOGISTS, PSYCHO-

LOGISTS, ECONOMISTS, AND OTHER SUBJECT MATTER EXPERTS,

MUST WORK TOGETHER TO PRESENT VIABLE PLANNING AND PRO-

GRAMMING ALTERNATIVES TO POLICY MAKERS, IT MUST BE

DONE AND DONE SOON.

SOCIETY INCREASINGLY IN CONNECTED BY COMMUNICATION

LINKAGES.

- 11 -

94(

Every part of society can be linked in an information

grid which transmits voices, data, pictures, live images,

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and opportunity for building a better world.

942

The impetus to achieve great goals from the judicious use of software and hardware should come in large part from you -- the pacesetters in information science.

I urge, therefore, that each and every professional and technical organization which is represented here, organize a task force with the responsibility to help interpret and apply information science to the solution of society's ills.

and America could surely use what might be called a "computer corps." It would be composed of both skilled manpower and computer time donated to voluntary agencies and to social service institutions.

The existence of a computer corps would not in any way relieve governments -- Federal, State or local -- of the responsibility to pay their way in utilizing the new technology. Public research and development budgets in human and environmental engineering will have to be increased.

943

001662

n State

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944

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945