



THE ASSISTANT SECRETARY OF COMMERCE
Washington, D.C. 20230

APR 20 1970

Dr. Joshua Lederberg
Professor of Genetics
Stanford University School of Medicine
Stanford, California 94305

Dear Dr. Lederberg:

We have gotten so many topics in our correspondence
the only way to sort them out is with numbers. So:

(1) RE: DENDRAL

Do you know that Ron Howard has a computer
program that draws and analyzes decision
trees rapidly and inexpensively? It can
do a few hundred nodes in very short time.
Problems of over 1,000 nodes have been
tackled.

(2) RE: RESOURCE DEMANDS BY THE U.S.

I shall look into the resources question.
It is time to check on the reality of the
statement "8% uses 50."

(3) RE: PURCHASING POWER BONDS

I shall seek expert advice.

(4) RE: THEORY OF RISK AND INSURANCE

This is a problem which Ron Howard can readily
comment upon. It requires some formal analysis
which I do not now have time to undertake, but
the broad features are reasonably clear to me.

- (a) The utility curves for the insurance company and the individual purchaser of insurance are not the same. The nonlinear utility curve appropriate for most people makes insurance purchasing worthwhile, even when the cost exceeds the expected value reckoned on a linear utility of money.
- (b) I believe there is a general weakness in all current approaches to decision analysis which I tried to overcome by the derivations in my book. The weakness lies in assuming values are fixed and not conditional. I believe the utility curve a man uses for his estate differs from that used for himself. (Witness use of trust funds, executors, etc.) The utility curve is conditional on being alive or dead!
- (c) The probabilities used by the different parties are not the same, and should not be if they have different knowledge.
- (d) The cost of risk assessment is too large for the average person to afford careful analysis. In the absence of individual analysis, who knows what is fair?

I'm pleased to continue to have your views.

Sincerely,


Myron Tribus