Dear Mr. Larson:

I read with interest your article in the September/October IEEE magazine Computer, "Computers in the Representative Process--Ill."

Here at Market Opinion Research we do political surveys for candidates, parties and the Detroit News Poll of Election Trends. For these we make considerable use of item analysis by computer to check voter responses to issue questions, crossbreaking them by candidate choice and various demographics. Thus, I can see that your ideas are highly practical from the standpoint that computers could readily do what you suggest. The initial task would be building up the data bank for tracking issues and congressional voting, etc., and getting both the interest and funding to do this!

Sincerely,
Barbara E. Bryant
Senior Analyst

Implementation will be difficult indeed. Most people are not aware of how little they know about the people they vote for. Those that are aware can go as far as complaining about it, but most are not inclined to convert their concern into constructive action. How do we get more people "turned on" about the problem of really knowing the voting record of the people that are supposed to represent us? The activities of the League of Women Voters are a heartening sign. Perhaps they represent a good starting point, to be enlarged to the League of Voters, or the National Informed Voters League I suggested. 

— HTL

Dear Editor:

Dr. Alvarez and Mr. Larson's discussion on computer aided medicine, is another case of each able to benefit from the other. Each person must realize that each other person is capable of constructive criticism. Dr. Alvarez has a good right to be leary of this new suggested field, but on the other hand Mr. Larson makes a definite point if you want to look past his suggested utopian outlook. Unfortunately for both men, if you give a person an inch they take a mile. Personal security in U.S. is a case in point. Why then, when a thing, the human animal doesn't know when to stop. I believe Dr. Alvarez is afraid of this same thing. He probably believes that most doctors will not do as Mr. Larson hopefully, and I'm afraid naively, believes could be done. Instead of using their basic common sense and good questioning techniques, doctors will tend to depend entirely on the computer usage. I believe Dr. Alvarez is correct in most respects. But I personally believe that these doctors who do what Dr. Alvarez fears most, are now those type of doctors who make wrong diagnoses continuously, and do not have the present capability of questioning their patients. Dr. Alvarez seems so capable of doing. Dr. Alvarez and his capable type will use the computer as Mr. Larson suggests, because they are capable of understanding what Mr. Larson is trying to do for the medical profession. Based on normal human nature, from which doctors are not divorced, it is unfortunate that most doctors will use the computer for diagnosis above and beyond their normal capacity for suggestions. The doctors will be wrong, but nature never made man perfect. That should not stop science from advancing; whether alone or in cooperation with each other.

Thus Dr. Alvarez and Mr. Larson are both right, to a degree. The computer should be used to aid the doctor in his diagnosis, but it should be limited to the point where doctors are made to still use their innate capabilities, to whatever degree they may be possessed. Let's not make the computer be a crutch for those capable doctors, or a replacement for those doctors who are not as capable.

Very truly yours,
Ivring Bayer

Mr. Bayer raises some proper warning signs which have troubled me too. What can we do about the incompetent doctors, against which society has little protection at present? I suggest that a record of their transactions and diagnoses in a computerized system, subject to review by properly constituted authorities, might cause them to move with greater care and accuracy. (A kind of medical audit trail.) Also, I feel that a well-configured system, capturing the combined wisdom of good doctors, can help weak doctors in a way that will more than offset their deadly ineptness. (I have in mind the type of computerized system in which excellent doctors control program design, wherein, given the subject matter and the logic of the practicing doctor's inputs, the program asks important questions of him, for his consideration in reaching a diagnosis.) Mr. Bayer properly points to potential serious misuse, already starting to occur. Computerized diagnosis will grow inexorably—the seeds are planted. How shall we protect the public from the potential misuse of our technology in this area—what mechanisms, organizations, reviews, and personal involvement are needed? As we slog along in this direction, we will sometimes stumble on the conduct of incompetent doctors and system designers. We will take a punch here and a catcall there from the cynics who will scoff at our efforts, and who will raise the spectre of disaster. But let's keep our eye on the goal of helping medical practice, augmenting the doctor's day-to-day efforts, ever seeking the effective combination of man and computer, each doing the part of the work each does best . . . . HTL

The following story is a very simple example of how useful information built into a computerized system can help a doctor do a better job. It is an excerpt from a panel discussion entitled Potential Implications, part of the Symposium on Computer Augmentation of Human Reasoning, held in June 1964 in Washington, D.C. The proceedings are reported in the book, Computer Augmentation of Human Reasoning, © 1965. Reprinted with permission of the publisher, Spartan Books, New York.

Baruch: May I tell a story? We were giving a demonstration and a physician, who shall remain nameless for obvious reasons as the story progresses, was demonstrating how this little hospital program we used enables the physician to order drugs and it checks him on certain things. If he orders an overdose it tells him about it. And he looked down the list of the drugs that were available and he said "I am a big man in Elavil." So he typed "Elavil," the machine typed back amitriptyline (it is going to be fun seeing what the stenotypist does with that). [Ed. note: She did very well.] Then it typed out right under that remark: "Do not use during or immediately after administration of aminokase inhibitor." And the doctor looked at the page and said, "Really?" At which time the pharmacist who was at the demonstration said, "Yes, really!" At which time the doctor said in a still small voice, "Jordan, why do you continue the demonstration, you have to make a telephone call." And I would be willing to bet that he learned more than punching a button.