

lines that come very close to those suggested by Harrison. Within certain limits, contributors can choose their own referees (from a list of 23 associate editors) but, having been chosen, these authorities must then accept *public* responsibility for the academic standard of the papers concerned.

Though we offer conventional (anonymous) refereeing to our authors as an alternative, more than half of them have avoided themselves of the more personal procedure. It is easy to understand their motives. Science in general, and physics in particular, has become a highly specialized pursuit, and the peer who is disinterested, but nevertheless capable of understanding the submitted paper, is almost nowhere to be found. The chances are overwhelmingly that a submitted paper, handled along traditional lines, would go to a direct professional rival. Nowhere do we suggest that bad faith is involved in conventional refereeing, but if bad faith is not, human nature certainly is, not to mention the increasingly competitive funding situation. In the circumstances, it is not surprising that authors prefer to deal with someone they know and trust. As long as the editors trust him or her also, and as long as the author-chosen referee acknowledges his/her responsibility in public (as formally noted on the title page of each paper: "Communicated by . . ."), the cause of science and the spirit of academe are served.

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Materials Research Bulletin
The Pennsylvania State University
1/25/77 University Park, Pennsylvania

Book-review complaint

I feel that it was very unfortunate that the profound and seminal book "Computer Power and Human Reason: From Judgment to Calculation," by Joseph Weizenbaum, was reviewed by John McCarthy, of the Stanford Artificial Intelligence Laboratory (January, page 68). This is because the work of McCarthy and other "artificial intelligencers" is discussed and severely criticized in the book. It's a clear case of letting the wolf tend the sheep.

This book received rave reviews in the *New York Review of Books* (which is where I discovered it) as well as in other influential review journals that normally do not touch anything technical, and also received recommendations from Lewis Mumford, Noam Chomsky, and many other intellectuals who may consider science as a less than sacred institution. But the book is not at all a debunker of science. It is a thoughtful exploration of what science is and ought to be in the computer field, and it should be widely read, especially by scientists.

Weizenbaum is also a computer pro-

fessional. But he is obviously worried by the enormous oversimplification of the multifaceted concept of "intelligence" by computer people. He argues that "an organism is defined, in large part, by the problems it faces. Man faces problems no machine could possibly be made to face. Man is not a machine . . . although man most certainly processes information, he does not necessarily process it in the way computers do."

McCarthy bitterly derides the book as being moralistic and against the "rationalist world-view that computer modelling reinforces." However, he and his fraternity are attacked in the book not only on moral grounds, but also as poor scientists. They start by denying that human beings possess any attributes that cannot be modelled by a computer, and then, because we solve mazes very much like computers (or rats), they conclude that operationally we are nothing but computers. To the objection that this kind of modelling cannot explain any of the important qualities that make us intelligent, or human, the answer of course is that there are no such qualities. So within the framework of the system, there is no possibility of attacking it. It not only cannot confront reality, but it denies reality. Such an internally closed system, Weizenbaum points out, is not science, since it cannot be disproven by facts. It is merely sophisticated magic.

I might add on my own that the oft-heard compromise statement that man is a computer, only a much more complex computer than any we know today, has no meaning at all (you can substitute "liverwurst sandwich" for "computer" in this statement).

Since the book is controversial, it should have been reviewed by someone knowledgeable but uninvolved. Then both sides could have their say in rebuttal. The subject is important enough to warrant the space. Certainly McCarthy has every right to be incensed by the point of view of the book, which makes an excellent case that his whole life's work, for all its impressive technical expertise, is essentially devoted to trivial aspects of an important problem. He also has every right to defend himself. But his remarks come in a section where the reader also has certain rights (namely, to an impartial review by a disinterested scientist), and so they are very out of place.

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2/3/77

Corrections

April, page 61—photo captions for Walter Kohn and Norton Lang were mistakenly reversed; Kohn is at far right, Lang adjacent.

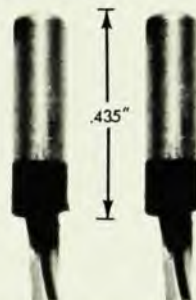
February, page 36—Caption to fig. 5 should read "... delivery costs would fall from \$2000-\$4000 per kg to \$40-\$120 per kg." □

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