A somewhat open letter to Nils J. Nilsson.

Dear Sir:

You asked for my opinion — expressed in a few paragraphs — about artificial intelligence. Here it is.

I consider automatic theorem proving a respectable branch of AI. The effort was non-trivial and honest, and a successfully constructed formal proof is a result of an undeniable solidity. Besides that, it has certainly been illuminating for those mathematicians that were unaware of the profound (but sensible) informality of most of their arguments. And that is about the best I can say of AI.

To my knowledge, AI has not revealed better ways of using our own minds; in this respect I consider all the work on recognition problems and on playing games absolutely irrelevant. Neither has AI assisted us in a better appreciation of our own minds. On the contrary, by describing machinery in anthropomorphic terms and man in mechanistic terms, it has only added to the confusion. To the artificial intelligentsia that argue "But we are only symbol manipulating machines, aren't we?" one can only answer "There is none so blind as them that won't see!". The analogy is so shallow that I can characterize an appeal to it only as typically medieval

thinking.

Viewing problem solving as "searching the solution space" may be appropriate in the context of its mechanical simulation, but not outside that context, and from all the efforts aimed at improving the search heuristics I expect therefore very little of significance beyond AI itself. The pragmatic nature of the quality criteria for heuristics makes the search for "better" heuristics an opportunistic game, for which I see no reason to expect that it will ever converge.

Finally, I know computing science as the prime example of a (cruelly) hard science — much less forgiving than mathematics in general_; it never entered my mind to consider AI, in all its softness, a branch of it.

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