

# "Computer chess" and human chess

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Jurg Nievergelt mentioned in a lecture the following famous study by Richard Reti 1929(?)  
White: Kh8 Pc6; Black: Ka6 Ph5

White is to move and draw.

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_ _ _ _ _ WK
bk _ WP _ _ _
_ _ _ _ _ bp
_ _ _ _ _
_ _ _ _ _
_ _ _ _ _
_ _ _ _ _
```

With just the kings and two pawns on the board, any modern chess program will find the correct move quickly. However, to a human, at first white's situation looks hopeless. White can't prevent the black pawn from queening and he can't defend his own pawn from capture by the black king.

We give credit to a chess player who can get a draw for white.

Note that Reti's idea can be implemented on a 100 by 100 board, and humans will still solve the problem, but present programs will not. I'll bet that the problem could be solved honestly by a program on a computer of the 1960s once chess programs can reason better.

Click [here](#) for the idea of the a solution.

Chess can serve as a *Drosophila* for AI if AI researchers try to make a program that come up with the idea needed to solve the problem on a board of arbitrary size.

Conversely, AI will not advance to human level if AI researchers remain satisfied with brute force as a substitute for intelligence.

What motivated this example was the following. The author is omitted to protect the guilty.

One reason why games like chess and checkers were so attractive initially is surely that they were, at that time, seen as requiring (human) intelligence, perhaps even paradigmatic examples of tasks requiring intelligence. Grandmasters were right up there with Nobel prizewinners in the general cultural pantheon. It was thought that one had to be very clever in order to play chess well. Only a very small percentage of humans could do it, it required a lifetime's dedication and hard work, and it was clearly an intellectual skill. Now that machines can do it so well, being able to play chess at master and grandmaster levels is no longer seen as quite so indicative of "intelligence" (that elusive concept!).

Would anyone seriously argue that it is impossible for a computer to solve the Reti problem by other than brute force?

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