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TOWARDS PERFECTION

Many chess-players have a passion for perfection. During a game, they can be thrilled by the excitement of a tactical scrimmage or fascinated by the clash of strategies in a positional life-or-death struggle. After a game, they all look for the best continuations in the crucial positions of the game. For some, the post-mortem analysis is as important as the game itself. Grandmasters elaborate upon this idea when they write a tournament book, such as New York 1924, New York 1927, Groningen 1946, and Zurich 1953. With the arrival of computers, new desires for perfection were developed. For example, in his trilogy on endgames Grandmaster John Nunn focussed on endgame studies. Grandmaster Jan Timman recently showed that cooked studies could be repaired with the help of a computer; the book is a pleasure to read. Timman did his work using heuristics, but he should have been encouraged to develop a research methodology.

The step from endgames and studies to the full game is large. Currently, we live in the interregnum where computers have outclassed the human World Champions, but still do not play a perfect game. Clearly, they are on their way to perfection as can be seen from the results of the 19th WCCC in Tilburg, the Netherlands, that are produced by Ken Regan. He extrapolated the Elo scores from a first analysis (i.e., a single principal variation) of the games. In the tournament, nine programs participated and the average playing strength was estimated to be 3100 Elo points, where the 2011 World Champion JUNIOR (and PANDIX) were running at over 3250 Elo points. Anand's Elo rating is somewhat above 2800.

There are many types of perfection. In endgames we know the discrepancy between the distance to mate (DTM) and the distance to conversion (DTC). From Victor Allis' (1994) research we remember the difference between ultra-weakly solved (e.g., Hex), weakly solved (e.g., GoMoku), and strongly solved (chess endgames). In this issue of the Journal, we learn of Monte-Carlo perfection. Ingo Althöfer takes us on a fascinating trip with many new games, one of them invented by himself. The games have a stochastic characteristic, viz. a random-turn order: a fair coin flip decides which player acts on the next move. A whole class of such random-turn games is proven to be Monte-Carlo perfect (for the precise definitions we refer to the article).

The second contribution of this Journal is a story on its own. It reports on a competition among scientists, on collaborations, and on exchanges of ideas and software. "Searching for the truth" would have been a nice title,

since it deals with the open question whether a Sudoku puzzle exists with 16 clues that is still a valid puzzle, i.e., it is solved by a unique complete grid. Halfway through 2011 we received a manuscript titled “An Efficient Approach to Solving the Minimum Sudoku Problem” by H-H. Lin and I-C. Wu. We sent it out to three referees and after some improvements, the Editorial Board decided to publish the article. Then, all of a sudden we were informed that Gary McGuire and his colleagues (University College Dublin) had solved this problem by exhaustive enumeration on January 1, 2012. We decided to publish the above mentioned article and requested the authors to add a paragraph called STOP PRESS and to check the contents for inconsistencies with respect to the new findings. The article is a joy to read and shows that Lin and Wu have a close cooperation with McGuire et al. The Editorial Board of the *ICGA Journal* congratulates McGuire and his team for their results.

Moreover, your Editor is pleased to communicate that the game Ricochet Robots is strongly solved by Yibo Chen, Wee-Chong Oon, and Wenbin Zhu (see pp. 223-226) and that the game Ms Pac-Man is still interesting after so many years (see pp. 209-222). With all these scientific articles (three articles + one note), we faced a situation in which we were pressed for space. Therefore we postponed the reports on the 16th Computer Olympiad and the 13th Advances in Computer Games Conference to the March 2012 issue. Finally, we publish the obituaries of two great men of our community, John McCarthy and Dennis Ritchie, who both passed away in the fall of 2011. The games community is grateful to them for their contributions.

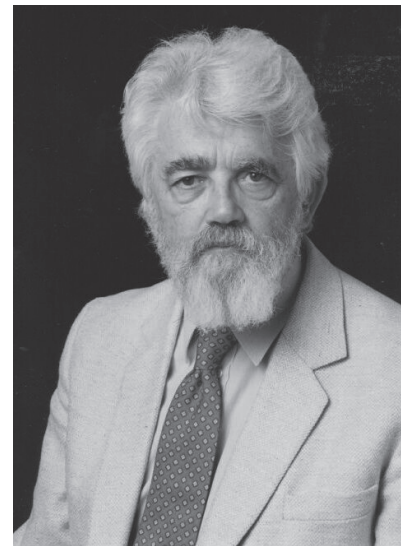
Jaap van den Herik

The credits of the photographs in the tournament section are to: Shi-Jim Yen.

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Ken Thompson (left) and Dennis Ritchie (center) receiving the National Medal of Technology from President Clinton in 1999.



John McCarthy