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## A BEAUTIFUL MIND

Good, better, best, leading to a beautiful mind. I am sure that all readers of our ICGA community immediately recognize the title. Indeed, it is meant as our tribute to John Nash. Ingo Althöfer has undertaken the task to honour this great mind by describing his contributions to science, his life, and his passing away (see pp. 125-127). All three topics are special and have their own merits and reminiscences. What a life! At age 21 delivering a Ph.D. thesis of 28 pages followed by many scientific breakthroughs. A “midlife” crisis lasting 30 years. Noble prize, Abel prize and then a car accident. We have to accept what happened. Thank you, John, for all your contributions; thank you, Ingo, helping us remember and honour John Nash.

A second, more pleasant fact to place in our spotlights is the superiority of hardware in combination with clever programming. Johannes Zwanzger delivered a top performance with his brainchild JONNY in the 21<sup>st</sup> World Computer Chess Championship in Leiden, the Netherlands. JONNY won the tournament, half a point ahead of KOMODO, and two or more points above the other seven participants. Yet, what made its victory outstanding is playing the move 145. Na8 (see Figure 4c on page 108). “Seeing” the move is understanding how far Jonny excels above the human world chess champion. The assumed superiority is to be expressed in an ELO rating that is 350 to 400 points higher than the ELO rating of the human World Champion Carlsen. It is amazing but true. Of course, it is due to the powerful hardware on which the program was running. To impress our readership: 2400 cores, 2376 threads, architecture AMDx86-64. Here HIARCS comes second with 28 cores and 28 threads. Obviously, deep thinking produces beautiful moves. The ICGA congratulates Johannes wholeheartedly with this performance (becoming World Champion with JONNY) and producing so many beautiful games. The next milestone now is solving the game of chess.

Some purists say that the proof is in the eating, where the pudding should be equal for all participants, i.e., chess engines should play against each other on identical hardware platforms. The 4<sup>th</sup> World Chess Software Championship (WCSC 2015) showed that very advanced hardware makes an enormous difference. In this tournament “good old” SHREDDER, programmed by Stefan Meyer-Kahlen, showed its stature and achieved another World Championships title after a play-off against GINKGO programmed by Frank Schneider. The course of this exciting competition is described on pages 115-122.

The third fresh idea comes from Fabien Teytaud and Julien Dehos. They distinguish between tactical behaviour and strategic behaviour of MCTS. Moreover, they transfer the RAVE (Rapid Action Value Estimate) ideas, as developed by Gelly and Silver (2007), from the selection phase to the simulation phase. It means that

influencing the tree policy is changed into influencing the Monte-Carlo policy. The article is a joy to read and emphasises once more that Monte-Carlo Tree Search is a mechanism that is still open to many improvements. At the end of the article the authors provide us with two directions of further research. So, we invite arduous researchers to submit new findings to our conferences and journal.

Different food for thought is given by Michael Hartisch who proves that discrepancies created by differences in rounding off numbers can influence retrograde analysis quite substantially. Karl's race is given as a test case, and references are made to EinStein Würfelt Nicht!

Gale Huntington and Guy Haworth enrich the endgame practice by a plethora of ideas and results. The title of their article expresses their findings very well: Depth to Mate and the 50-Move Rule. The contribution is seriously recommended to all successor researchers of Thomas Ströhlein who built the first databases in 1970.

Dap Hartmann also deserves a compliment for the witty end of his review on the Ph.D. thesis *Personalized Educational Games, Developing Agent-Supported Scenario-Based Training* by Marieke Peeters. He traces back the motto *Tell me and I'll forget; show me and I may remember; involve me and I'll understand* used by many who sometimes suggest that that there is no original source of the motto. The speculations at the end certainly have some truth.

Finally, I would like to inform you that a solid Journal is only stable and readable by allowing now and then exceptions. In the past, Bob Herschberg was given the opportunity by the Editor-in-Chief to occasionally publish his thoughts in a small poem with the intention of getting our readership thinking. In this issue the floor is to David Levy, who discusses the Horizon Effect in the Policy of the European Union. Reuben Fine already stated: Chess Marches On! Your Editor looks forward to the next creative outbursts.

#### References

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Jaap van den Herik

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