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## WHAT CONSTITUTES AMBITION?

The *ICGA Journal* would like to provide its readership with "the best available scientific knowledge." Since we focus on computers and the World of Games, we need gifted authors who are experienced game researchers with the ambition to achieve a particular goal. There are plenty examples of such achievements, such as (1) solving a difficult game, (2) introducing a new method, (3) establishing a so-far-unknown relation, and (4) explaining in human understandable concepts computer findings that for a long time seemed to be incomprehensible for human beings. Ambition is the driving force for successes, breakthroughs, and reputations. Having success is not a matter of hard work only; ambition and intelligence should be involved. Intelligence in itself is not sufficient, as adequately phrased by Salvador Dali: "Intelligence without ambition is a bird without wings."

Assuming that all our authors are researchers with wings (i.e., the publication of an article in the *ICGA Journal* shows ambition), your Editor has witnessed many times a dispute between a referee and an author. Such a dispute is important for drawing a clear line: should the contribution be accepted or rejected? For breakthrough articles, it frequently happens that the author is far ahead in knowledge compared to the referee. However, all referees are knowledgeable in their own field, usually the topic of the contribution; if not, then the topic is closely related to the referee's expertise. I remember very well that at least five respected researchers (I have in mind: Bouzy, Coulom, Chaslot, Szepesváry, and Kocsis) were necessary to convince the games world that MCTS (as it is now called) constituted a breakthrough. They were the researchers who adapted Brügmann's (1993) ideas, taking them further, showing their promises. As an Editor, my policy is to put ambition back in the heart of the researcher. There, ideas and improvements of ideas will start. This issue tells you the story of my policy. Future research will show you (a) whether the contributions actually were instrumental for further development or (b) whether they even constituted a breakthrough in itself.

I would like to follow the enumeration given at the beginning of the Editorial. Solving a difficult game is the topic of Guy Haworth's note on Chess Endgame News (pp.104-107). The main question, not mentioned in the note, is: Can we solve the game of Chess assuming that it is only a 32-piece endgame? If so, then the next question reads: Via which endgame(s) do we reach our result? Haworth informs us that currently the longest known game played by humans is Nikolić-Arsović with 269 moves ending with 102 moves in the KRBKR endgame; it ended in a 100-move draw-claim as in force in that time. Here, a new research item is: establishing the maximin of perfect computer-computer games. For a number of impressions on what may come, the interested reader is referred to the FINALGEN site where many endgames (even up to 9 pieces) are listed with solutions and peculiarities. In the class of solving a difficult game, the first note by Hurd and Haworth (pp. 100-103) is equally interesting and equally predictive. It deals with Automated Theorem Proving and HoTT (Homotopy Type Theory).

Introducing a new method is proposed by Janičić and Maliković (pp. 81-99). They investigated Bratko's (1978) method of mating the black King in the KRK endgame. Having found some inaccuracies, they started to develop a new method. A clever referee analysed the method and concluded that the number of clauses needed in the SAT reductions exceeded the size of the search graph. So, the important question was not whether the method worked well, but whether the method had fruitful prospects for future applications in other endgames. The members of the Editorial Board look forward to the readers' comment, their follow-up, and even their improvements.

For chess players, the following unknown relation is intriguing: How deep does a Grandmaster analyse a line? In fact, this question deals with the relation between playing strength and looking ahead. Two well-known wise cracks by top Grandmasters on the question "how many moves they look ahead while playing" are as follows. Capablanca: "only one, but it's always the right one." Reti: "one more than my opponent." Diogo Ferreira is the first researcher who has taken this question as the goal of his research. The answer is full of scientific provisos. Three referees have been in discussion with him and I am sure that this is not the last word. However, he is the first one who brings up the topic and who relates the engine-dependent playing strength (viz. HOUDINI 1.5a 64-bit) with looking ahead by Grandmasters. In brief, the rough answer reads: a Grandmaster with an Elo rating above 2500 can only be a match for HOUDINI when the program thinks more than 14 ply deep.

The fourth issue, explaining computer findings in human understandable concepts, covers a wide range of areas. The most closely related interpretation is seen in Kirchhof's note (pp. 115-120) that deals with understanding the perfect strategy as applied in orthogonal central English peg solitaire. Obviously, many variants can be thought of. In general, the remaining question reads: is the method of formulating a human understandable strategy transferable to other related games where the board size and/or the arrival hole are different?

A second interesting topic in this class is: Can we understand the ambition of a Go-programming researcher who achieves three times his goal of becoming World Champion and then states: enough is enough? This is the true story by Mark Boon, who won the fifth, sixth, and seventh World Computer-Go Championships in 1989-1991 (see pp. 108-114). His personal story is interwoven with the beginning of the Computer-Go development. Since the *ICGA Journal* was up to 2000 only devoted to chess (being the *ICCA Journal*), we believe that it is a courtesy to our readers to inform them about what happened in the early years of Go programming. Boon's report provides more questions than it gives answers, but readers should take it as an invitation to complement the Go-programming stories. Soon, in Yokohama, Japan, we will see the current development in this field.

**Reference**

Brügmann, B. (1993). *Monte Carlo Go*. Technical Report, Physics Department, Syracuse University, Syracuse, N.Y.

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The credits of the photographs in this issue are to: The HoTT team, BIPM, Petr Baudiš, and Mark Boon.

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