

A tribute to Guy Haworth

Supporter – Mentor – Friend of Chess Endgames

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On 16 June 2021, Guy Haworth passed way. He was a longtime and active member of our ICCA/ICGA community, and served as a Vice-President of the ICGA from 2002 until 2005. Guy will be most remembered for his contributions to the ICGA Journal. Since 1998, he regularly published technical notes, tournament reports and (review) articles on computer chess. The most well-known contributions were his endgame articles, though over the years he published more and more reports on computer chess tournaments such as the ICGA World Computer Chess Championships, and TCEC (Cup) tournaments. He was an ardent supporter of research on chess endgames, a mentor for many students, and a friend for all who investigated the nucleus of chess.

At this moment, a kind of bewilderment rages through our heads. Guy Haworth passed away. The news came totally unexpected. What can be said? His passing is a great loss for our community. As Editor of the ICGA Journal Jaap knew him since 1998 when Guy submitted his first contribution. In 2001 he visited the 6th Computer Olympiad Workshop in Maastricht and Jaap and Guy became soul mates. Guy was very stimulating for our team (Johanna, Jos, Mark and Jaap). He was enthusiastic, had new ideas and showed himself to be prepared to work hard. As a consultant/teacher at Reading University he wished to communicate the beauty of chess programming to the world of chess aficionados. His adage was: Chess is as mathematics but it is more beautiful, in particular when you investigate the endgames. Of course, our world is shocked, but *his family* is more in dismay and disarray; hence our thoughts are first of all with his wife Annette and his sons Alex and Ben.

1. GUY'S FIRST CONTRIBUTIONS

The contributions by Guy are numerous and can be found in many lists that are available on the internet. This obituary will be a tribute to his contributions to the computer chess world, to ICCA/ICGA Journal as well as to our community. He was a great connector of people.

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Guy started at the end of the 1990s as a consultant combined with a teacher position at Reading University. He suggested to Meel Velliste that for his second year project to use a chess endgame as a vehicle to train an Artificial Neural Network (ANN) for successfully evaluating a set of data. They communicated with Ken Thompson on the King-Pawn-King (KPP) endgame and arrived at the modest result that a linear evaluation function in the initial state of the ANN might effectively develop into a non-linear evaluation function on the basis of some training regime. It was sufficient for a second year's project. There were no breakthroughs, yet Guy decided to report the results in a well described article and sent it to the ICCA Journal. It was reviewed and accepted (Haworth and Velliste, 1998).

The second contribution is also worthy of being mentioned, since it was a co-production with Eugene Nalimov and Christophe Wirth titled: *KQQKQQ and the Kasparov–World Game* (Nalimov et al., 1999). In the same issue he also reported together with P. Marko on the Kasparov–World Match (Marko and Haworth, 1999). These three publications gave him a focus for further development.

In 2000 Haworth delivered four publications to the ICCA Journal and four to John Roycroft's Magazine *EG* (which stands for End Game). Remarkably, he also brought in a new name as co-author, viz. Ernst A. Heinz. Together with Nalimov they published the article *Space-Efficient Indexing of Chess Endgame Tables* (Nalimov et al., 2000). Heinz' and Nalimov's endgame tables encompass the *en passant* rule and had the most compact index schemes to that date. Nalimov's tables used the Distance-to-Mate (DTM) metric, requiring only 30.6×10^9 elements in total for all the 3-to-5-man endgames. They were individually more compact than previous tables. Nalimov's new index scheme was used by many of the top programs in the 1999 World Computer Chess Championship.

2. GUY AND THE ICCA

In 2001 Guy showed up in the 6th Computer Olympiad Workshop in Maastricht where he delivered *Four Notes on Chess Endgames*. Two of them influenced further research: *Depth by the Rule*, and *Mutual Zugzwangs*. Specifically, he noted that the distance-to-conversion and distance-to-mate metrics were impacted by the 50-move rule. Hence different strategies should be applied.

Guy was a prominent example of the combination of a dedicated teacher and a genuine researcher. He showed that a deep understanding of the material to be investigated does not result from only studying the material itself but even more from learning and sharing the knowledge with other persons. With his enthusiasm he has contributed quite substantially to the knowledge development of colleague researchers, e.g., as Guest Editor together with Ernst Heinz for the ICCA Journal issue on Ken Thompson (Haworth and Heinz, 2001). Next to the ones already mentioned we would like to give credit to Guy's co-authors of this period: Peter Karrer, John Tamplin, Marc Bourzutschky, and Eiko Bleicher.

In 2002 Guy visited the 10th WCCC in Maastricht, contributed to the 7th Computer Olympiad workshop, and participated in the ICCA triennial meeting where the ICCA was transformed into ICGA. At that meeting Guy became the first Vice-President of the ICGA.

3. LECTURER AT THE SCHOOL OF SYSTEMS ENGINEERING

In 2003, Guy Haworth was appointed as a lecturer at the School of Systems Engineering, University of Reading. His activities were in teaching and enabling undergraduates to learn about the application of Information Technology. His main topics taught were on Enterprise Architecture and e-Business,

and Project Management. Though he never aimed at a scientific career in Reading, some of his contributions were peer-reviewed. They appeared, of course in the ICGA Journal, as well as in respectable other venues such as the AAAI Conference on Artificial Intelligence, Theoretical Computer Science, and the Advances in Computer Games books. For the latter, he reached his finest hour in the 2009 and 2011 editions, where he had three papers at each of them.

In 2012 he was too busy in Reading giving all the students his full attention, and preparing for the year 2013 where he collaborated with a new slate of co-authors viz. Joe Leslie-Hurd, Jan Krabbenbos, Giuseppe di Fatta, Karsten Müller and Harold van der Heijden. This combination of students and research was his life and he enjoyed it to its full extent.

4. NEW ENERGY

His retirement in 2016 did not slow him down, as he became an increasingly important contributor to the ICGA Journal, especially to its news section. His pinnacle year in this respect was 2019, where he had a staggering number of 19 contributions for that particular volume! More importantly, Guy encouraged other people to (co)-publish in the news section of the Journal.

The latest issue of the ICGA Journal (2021) contains lively reports. As an instance we mention the Hernandez-Haworth articles on TCEC Leagues Season 20 (Haworth and Hernandez, 2021a), and TCEC Cup 8 (Haworth and Hernandez, 2021b) (both won by Stockfish). And even the issues contains a posthumous contribution by Guy (Haworth, 2021).

5. A GREAT THANK YOU

In conclusion, here we will speak as editors, it has been a joy working with Guy, not only for the sheer volume of content he produced, but also for the fact that his articles were always interesting and never required much editorial effort. They were a joy to read and contained informative material for our readership. Moreover, Guy has been a very reliable and helpful reviewer of a large number of submissions.

Guy's departure will leave a large hole in our community, and both he and his contributions will be deeply missed. Thank you Guy for all you gave us.

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