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### TIMES PAST AND TIMES FUTURE

'Time flies', a trite statement if ever there was until Noam Chomsky or at least somebody of his grammar school pointed out its multiple ambiguity. Why not have a person, called Time, at the joystick of his trusted two-seater plane or why not read it as a command to a sophomore biologist?

In its more usual sense, Time, while flying, seems to do so in a zig-zag rather than a linear pattern. Time in the computer-chess world must stand convicted of occasionally folding back on itself. How else are we to explain that the 17th North American Computer-Chess Championship saw the resurrection of Belle who had lain dormant for a thousand days before she was given the kiss of life by Prince Thompson? Or, for that matter, how to account for the absence of Cray Blitz, the World Champion, and Hitech, its runner-up, except by postulating that time was reversed in this world or by positing that it had jumped between parallel and equally possible worlds?

In the more thoughtful contributions to this Journal, Time's arrow seems to be veering back and forth, too. Of oldest vintage by far is the classical paper by Komissarchik and Futer. In common with many other classical papers, it has the irksome characteristic of being often referred to in footnotes while being inaccessible in many libraries normally thought of as well-stocked. The Editors' decision to render it accessible caused a true avalanche of work. The first translation, by Professor Posthoff, proved to be a conscientious

rendering of the paper's substance, but fell somewhat short of being a scholarly blow-by-blow version. This unchained a reaction in the Editorial Board in a simultaneous but somewhat self-contradictory attempt to do the article into palatable English and to make it follow more closely what its authors had actually published. After all, its period style may well add to its period charm. Suffice it to say that the present version is neither perfect English nor does it reflect perfect scholarship and let us note that at least one Russian dictionary suffered a crack in its spine during the process.

For all that, we hope that this classical paper, with its quaint stress on computermanship, will prove worthy of the effort that went into its republication. Even at this distance in time, some three computer generations, it has lost remarkably little of its relevance and its senior author wrote us to state that he welcomed republication. Discerning readers will notice that some of the authors' statements, especially when summarizing previous knowledge, now are known to be somewhat untrustworthy. We feel that this, too, is part of the charm of a bygone age, which tended to emphasize grandmasters' insights over newfangled programmers' certainty, the latter then being in short supply.

If you wish, time has a backward-pointing component in Bettadapur's paper too. It has long been known, perhaps since time immemorial, that cleverly ordering moves to be considered in a tree-structured search program may make all the difference between defeat and victory. To the extent that his paper makes various orderings the object of research, without plumping straightforwardly for the best ones advocated, it seems to take a step backward in time. However, time also has forward-pointing components in Bettadapur's work: to the best of our knowledge he is the first to make explicit that cleverness in ordering brings fast gains indeed and that sloppiness or thoughtlessness is likely to be punished by factors of several orders of magnitude, turning potential seconds into dreary and suicidal half-hours or, with some worse luck, into searches which like Time, never terminate ...

At first glance, Peter Frey's paper seems free of the taint of being burdened by Time past. The papers he refers to mostly have had no time for their ink to dry and certainly not for the stock to yellow. On closer scrutiny, the author takes us a little back into a past which he studiously gives the appearance of avoiding. One of his mainstay references is to De Groot, a grey eminence in chess thinking, and, to Frey's credit, his argument is roughly as follows: it has been a long time now that the chess-programming world leapt forward by the irresistible impetus of faster processors. Is it not then, thus the author, time to step back in time and stress anew the idea that human chess intuitions should be given more attention than they have received in the welter of brute-force progress?

The Editors conclude that, remarkably and gratifyingly, Frey sees a further source of progress in going back to intuitive notions such as were advocated throughout five decades of thoughtful work. This, of course, does not prevent him from casting his ideas in quite up-to-date terms, happily married to the old-time perennials of bits and bytes. In all, the Editors feel this issue, firmly grounded in Times present, strikes a happy balance between the impact of Times past on the ever-mysterious Times future.

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