CORRESPONDENCE

A CONJECTURE CHALLENGED AND WITHDRAWN

Occasioned by Ingo Althöfer's article "Retrograde Analysis and Two Computerizable Definitions of the Quality of Chess Games" in the *ICCA Journal*, Vol. 12, No. 2, pp. 74-78, the Editor has received two letters, published in full below and amounting to Althöfer's withdrawing of one of his claims.

A CONJECTURE CHALLENGED

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I would like to make a remark concerning Ingo Althöfers very interesting article in the *ICCA Journal* of June 1989.

In the introduction Althöfer described the problem to decide whether given any two chess positions A and B on an n x n board there is a legal chess game leading from A to B. He conjectured that this question is undecidable. This is not true, simply because the number of chess positions on an n x n board is finite (dependent on n). Therefore a path-finding procedure for the reachability graph is sufficient to solve the problem.

A CONJECTURE WITHDRAWN

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Rainer Feldmann and Peter Mysliwietz have drawn my attention to a bad misser in my note "Retrograde Analysis and Two Computerizable Definitions of the Quality of Chess Games", in *ICCA Journal*, Vol. 12, No. 2, pp. 74-78. In the introduction I had conjectured that it might be impossible to decide whether there is a regular chess game from A to B, where A and B are two positions on the generalized n x n board (instead of 8×8). However, for every fixed n there are only *finitely many* different chess positions on the n x n board. Hence it is, at least from the theoretical point of view, trivially feasible to decide whether there is a path from A to B in the finite directed graph which corresponds to the n x n chess.

The refuted conjecture of the note can be modified by looking at positions with *finitely many figures* on the *infinite chess board* (consisting of the whole plane). In this case the decidability status of the 'legal-game question' is *a priori* not clear as there are infinitely many positions.

I conjecture that also this case is decidable. Namely, it may be possible to prove something like the following statement:

"Let A and B be two positions on the infinite board such that in both all figures are standing on a subboard of size n x n, and let P be an arbitrary regular game from A to B. Then there exists a game P' (maybe P=P') which also leads from A to B, and in which all figures do not leave a finite subboard of size say $n^2 x n^2$ around the above-mentioned n x n subboard."

Such a statement would reduce the infinite board case to the finite one, which being denumerable is decidable.