

W. Koomen (1935 champion of the *Amsterdamsche Schaakbond*)
 J. A. J. Polak
 J. C. Sterk (1938 champion of the *Amsterdamsche Schaakbond*)
 M. B. Stodel (1937 champion of the Amsterdam secondary schools)
 W. Tegelaar (1939 champion of the *Amsterdamsche Schaakbond*)
 Five skilled players ranging from *hoofdklasse* (Class A on the USCF scale) to 'second class' (Class C) players, of whom three were psychologists:
 Prof. H. C. J. Duijker
 Dr. M. J. W. de Groot
 Prof. H. W. Ouweleen
 J. Verheek
 Dr. E. S. van der Vleugel

Some of the Dutch masters co-operated in taking the role of the experimenter and in selecting positions. The author was then enabled to don the robes of subject M5. Even though M5's protocols were classified with those of the other Dutch masters, care was taken to avoid a bias in the analysis of the thought process. The use of these personal protocols was restricted to illuminating the findings derived from other protocols.

From now on each subject will be denoted by a letter and a number. The numbers indicate nothing more than the chronological sequence in which the players served as subjects. The letters denote the playing strength of each group:

G = Grandmaster
 M = Master
 W = Women's champion
 E = Expert
 C = Class player

The names of the E- and C-players above are simply listed alphabetically.

Section 26: Chess positions

The positions given to the subjects were, with the exception of position P-B6, taken from actual games. A total of 34 positions of varying character were used, 17 of these (A, B, C and 14 other positions) in the 'main series' (cf. Section 28). A was used with 19 different subjects, B with six, and C with five. The other positions were used only once.

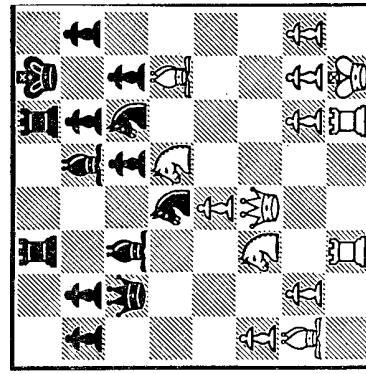
Position A (see diagram). Taken from a game between A. D. de Groot - C. Scholtens, Amsterdam, 1936. White is on move. (See Appendix I for the complete game.)

This position presents problems of a mainly tactical nature. Through his last move (...Q-N3) Black has created a 'hanging position' for his Bishop on K2: it is defended only by the exchangeable Knight on Q4 so that the Black Knight on B3 is somewhat tied down. There are all sorts of exchange possibilities in the center, and the question is whether or not it is possible for White to profit from the tactical weaknesses in Black's position. If no such possibility should exist, White could best strengthen his position with some calm move.

From a thorough analysis, however, it appears that White is in a position to get the better of it; there is even a forced win. The winning move is 1.BxN/5. After 1.BxN/5, 1...NxN is shown to be unplayable as follows:

(1.BxN/5), NxN?; 2.NxN with an attack on the Queen so that Black must immediately take back: 2...PxN; 3.BxB winning a piece. (White must not choose the wrong order to exchange on Q5, however. If 1.NxN, then 1...NxN follows and the tactical tension in the center is dissipated. E.g., 1.NxN, NxN; 2.BxN, and Black saves himself through 2...BxB/N.)

Nor does recapturing with the Bishop help after 1.BxN/5: (1.BxN/5), BxB; 2.BxN, BxB; 3.NxB, PxN; 4.N-Q7 winning the exchange.



POSITION A

White on move

Thus Black must recapture with the Pawn: (1.BxN/5), PxB. But now the Knight on KB6 is immobilized and the Bishop on QB6 no

longer has an open diagonal. White can, for instance, continue with 2.Q-B3 and have a superior position.

For the grandmasters these considerations were already sufficient to play the move 1.BxN/5; further analysis was superfluous. The move does lead to a forced win, however, as can be shown with the following variants:

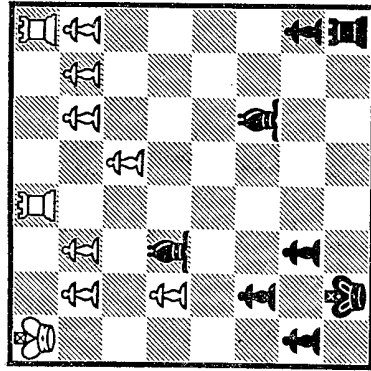
1.BxN/5, PxB; 2.Q-B3, Q-Q1 (or 2...K-N2; 3.N-N4, NxN - on 3...Q-Q1 follows 4.B-R6ch etc. - 4.BxB, KR-K1; 5.B-B5 and 6.QxN); 3.QR-K1! Now Black still cannot free himself of the pin, for after 3...N-K5; there follows 4.B-R6! N-N4!; 5.Q-N3, R-K1; 6.NxB, PxN; 7.BxN, BxB; 8.RxRch, QxR; 9.QxB winning a piece. And on other Knight moves 4.BxB and 5.NxB follow, also winning a piece. Therefore Black must do something else, e.g. 3...R-K1. But then the Knight on B6 can no longer move so that White can quietly strengthen his position, for example, with 4.R-K3 and KR-K1. Or he can even wind up immediately with 4.NxB, RxN (on 4...PxN follows 5.RxB and 6.BxN); 5.RxB (anyway!) QxR; 6.NxP, NxN; 7.BxQ, NxQ; 8.P-Q5 and wins.

The position is thus 'objectively solvable'; the analysis bears out that White can win. This does not mean, however, that the player at the board is able to find the forced win. As a matter of fact the relevant variations are not easy to find and are rather deep. On the other hand a complete analysis is not needed in order to decide on the choice of the best move, 1.BxN/5. For most of the less prominent players the real difficulty did not lie in the depth of calculation but rather in thinking of seriously considering a move that exchanges the 'strong,' 'attacking' Bishop on R2 for a Knight. In many of the protocols of weaker players the move 1.BxN/5 is not even mentioned.

Position B (see diagram). Taken from a game between J. M. A. Wind-A. D. de Groot, Utrecht, 1935. Black is on move. (See Appendix I for the complete game.)

This is an endgame position which is in many respects the counterpart of position A. Black (on move) has a serious problem to solve. But this time it is more of a strategic problem: he has to set up a plan for the future course of play. The White Pawns are dangerous and their advance must be prevented either by a counterattack on the White King or by some effective blockading defense. Black's next two moves - both of which were required in position B - should both fit into a long range plan that must be decided on in the present position.

An objective solution of this position cannot be given. It is probable, however, that a King's side attack is preferable; for example, in the following way:



POSITION B

Black on move

1...R-N1; 2.P-N3, R-N4; 3.P-B4, R-N4; 4.P-B3, P-KR4; 5.PxP, RxPch; 6.K-N1, B-K4; 7.QR-Q1, B-Q5ch; 8.K-B1, R-R8ch; 9.K-K2, R-R7; etc. This variation only serves as an illustration of further possible developments; in the protocols numerous other variations are to be found. The attack with the Rook and the two Bishops is stronger in any case than one would think at first sight. Compare, for example, the following cute variation: 1...R-N1; 2.P-N3, R-N4; 3.R-K7, R-N4; 4.P-KB3, P-KR4; 5.RxRP, PxP; 6. R-R6, PxP1; 7.RxB, R-R4ch; 8.K-N1, B-K6ch; 9.K-B1, R-R8 mate. White must obviously play with care.

An alternative execution of the same idea is to play 1...K-N2, followed by 2...P-KR4, as was done by subject C5 and considered by some of the other subjects. Less strong is the immediate 1...P-KR4 or 1...R-N1 and 2...P-KR4, as was played by M4. It is impossible, however, to produce a complete analysis. No really advantageous solution for Black can be pointed out. On the contrary: Black should be happy with a draw.

Like position A, position B appeared to be well chosen for the experiments. It represents, so to speak, a turning point in the whole game: Black has to make up his mind about the strategy to follow. In practically every game such crucial situations do occur at least once. 'Planning a strategy' belongs to the typical mental activities that should be (and will be) studied in an investigation of chess thought.