

Recent Advances in Opening Theory

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Abstract

An opening series of forced moves is discovered using computer analysis that is a guaranteed draw for Black if both sides play perfectly. If White does not play perfectly and Black plays perfectly, then the opening is a guaranteed win for Black. The opening is a variation of the Modern B08 as 1. e4 d6 2. d4 g6 3. Nc3 Bg7 4. Be3 Nf6 5. Nf3 0-0 6. Qd2 with the newly discovered move 6. ... Nbd7. (A continuation of the line with the human move of 7. e5 allows Black to force a draw in 29 moves.) Such an opening of forced moves proves that while chess may appear to be infinite in practice to a human, chess is a finite problem to a relatively small computer.

Apparatus

The computer used in this study was a dual Opteron 240 with 2 GB of ECC registered RAM. The software used was Deep Fritz 8 with a hash table size of 1056 MB or about 1 GB. The moves were processed to at least level 20. A faster Opteron computer would replicate the results but within a linearly shorter period of time.

Findings

The move orders of the opening are named in the literature as the Modern, Pirc (pronounced Peertz), Robatsch, and Yugoslav openings.

The moves are as follows:

1	2	3	4	5	6	7	8	9	10	11	12
e4	d4	Nc3	Be3	Nf3	Qd2	Bh6	Bxg7	h3	Qe3	0-0-0	g4
d6	g6	Bg7	Nf6	0-0	Nbd7	c6	Kxg7	Qc7	e5	b5	b4
			[or transposes		Qd2	Bh6					
					c6	Nbd7]					
13	14	15	16	17	18	19	20	21	22	23	24
Ne2	Nxe5	dxe5	Bg2	Rhe1	Ng3	Nxe4	Nxf6	g5	Qd4+	Bxd5	Re3
d5	Nxe5	Qxe5	dxe4	Re8	Be6	Bd5	Qxf6	Qf5	Kg8	Qxg5+	Qxd5
25	26	27	28	29	30	31	32	33	34	35	36
Qxd5	Rxd5	fxe3	Kd2	Rd4	Rd5	c4	bxc3	Kc2	Rd7+	Rxh7	Kd3
cxd5	Rxe3	f5	Re8	a5	Ra8	bxc3+	Rb8	Kf7	Kf6	Re8	Rd8+
[or transposes	fxe3	Kd2						[or transposes	Kd3	Rxh7	
	Re8	f5]							Re8	Rd8+]	

37	38	39	40	41	42	43	44	45	46	47	48
Ke2	Ra7	Rxa5	Kf3	Kg3	Ra6+	h4+	Kf3	a4	Ke2	Kf3	Rxg6
Rc8	Rxc3	Rc2+	Rh2	Re2	Kg5	Kh5	Re1	Rf1+	Ra1	Kxh4	½-½

The moves above are all forced by Black throughout the variation. The important move discovered is 6. ... Nbd7 on which the definitive nature of the opening turns. The author proposes the name of the opening to be the “Deep Fritz Variation” of the B08 Modern Opening because the Deep Fritz engine chugged it out.

Two chess masters reviewing the results suggested that the move of 7. e5 was better than the machine move of 7. Bh6. That suggestion was submitted to computer analysis. The results of the line are below.

						7	8	9	10	11	12
						e5	0-0-0	Qxe3	dxc5	Nxe5	cxd6
						Ng4	Nxe3	c5	Nxe5	Bxe5	exd6
								[or transposes		cxd6	Nxe5
										exd6	Bxe5]
13	14	15	16	17	18	19	20	21	22	23	24
Kb1	Nd5	Qb3	Bd3	Bb5	Rxd5	c3	Rd2	Bc4	Bd5	Qd1	bx c3
Bf5	Re8	Rc8	Be6	Bxd5	Re7	Qb6	Rc5	Qc7	Qa5	Rxc3	Qxc3
25	26	27	28	29							
Re1	Kc2	Kb1	Kc2	Kb1							
Qxa1+	Qc3+	Qa1+	Qc3+	½-½							

The move 7.e5 allows for Black to draw in 29 moves, thereby supporting the claim that the better line is that first presented.

A search of the author’s chess library found that the following dedicated text references show these numbers of moves of this variation, where for moves 6. xxx yyy, move 6.0 is 6.xxx for White, and move 6.5 is 6. ... yyy for Black:

- 7.0: Friedstein [1970], 1975
- 6.5: Gallagher, 2003; McNab and Nunn, 1998;
and Tella and Yrjölä, 2001
- 6.0: Chess Informant, 2002 (as ECO B08:03.06.0)
- 4.5: McDonald and Speelman, 1998
- 4.0: Alburst and Chernin, 2001; and Seirawan, 2003
- 3.0: Watson, 1998; and Watson, 2003
- 0.0: Dvoretsky and Yusupov, 1994

It is remarkable that the text titled in part “Advances Since Nimzowitsch”, Watson, 1998, does not show the most moves of the variation. Rather, it is a 1975 translation of a 1970 USSR text, and not in algebraic notation, that publishes the most moves of the variation.

This fact should serve as a caveat to those who would summarily dismiss older chess treatises, such as those not in algebraic notation, as without merit.

The only game found in the Mega Database 2004 of ChessBase that goes through move 8.5 is between Jonas Hoffmann and Ernst Millen (0-1) at Westfalz on June 24, 2000. The White side error was at move 9. 0-0-0. Millen, at the time an expert rated at 2076, subsequently took a total of 40 moves to win.

Conclusions

This opening variation of B08 is in the category of generic moves based on 1. ... d6 for response to almost every opening move by White. Tella and Yrjölä, 2001, were the first to recognize this in major print media. Therefore the goal is to obtain transposition to one of the positions within the variation above for a guaranteed draw as Black if Black can manage to play perfectly.

What remains is to prove the perfect opening move for White. If it is either 1. d4, 1. e4, or 1. Nf3 then Black's response of 1. ... d6 guarantees a draw. What follows is that the arch chess problem is solved for the first time from the standpoint of a perfect move response for Black to White's three best first moves.

As a side effect, these findings also show that one moderately skilled in the use of computer hardware and chess software may achieve results and conclusions that chess experts will recognize as true and valid and which cannot be disproved.

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