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# THE INNER GAME OF CHESS

MONGOOSE
Press

# TABLE OF CONTENTS

## *Chapter 1*

# WHAT CALCULATION IS – AND ISN'T

*"We think in generalities, we live in details."*

*–Alfred North Whitehead*

Like the rest of us, chessplayers think in generalities – the value of centralizing pieces, the way to exploit doubled pawns and bad bishops, the strength of a rook or knight. But they also live in the details of a game – the "if I move my bishop there, he plays knight takes pawn check" details.

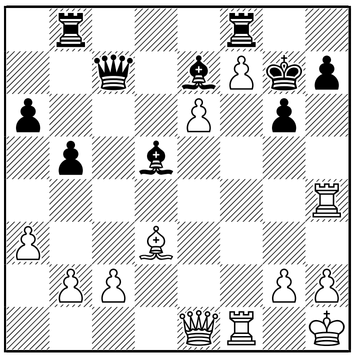
Entire libraries have been devoted to teaching the generalities of chess. These books use specific examples, of course, to illustrate when files should be opened or passed pawns pushed or queens exchanged. But then, in a real game, when you have to apply several of those general principles to a very specific situation, you may find that they contradict each other. In a typical middlegame position there may be two or three solid principles recommending, say 23.♖c6, and a couple more endorsing 23.exf5, and still others that seem to urge you to play 23.♘f6+. And the only way to figure out which is best is to wade into the details.

Ask a master what he actually does during a game and, if truthful, he'll answer: "I calculate variations." He looks a few moves ahead and makes a judgment about the various possibilities at his disposal.

He knows the old saying that, “Chess is 99 percent tactics,” but he also knows it’s inaccurate. Chess is really 99 percent calculation – the inner game of chess.

**KAMSKY – MAMEDYAROV**

World Cup 2013



*White to move*

An amateur looking at this position would quickly count up material and realize that White has three extra pawns and Black has an extra bishop. That’s roughly even.

He would see that White has two advanced passed pawns, at e6 and f7, an important asset. But he would also see that those pawns are firmly blockaded. Moreover, they could be quickly lost after ...♖b6 and ...♖xe6 or ...♗xe6.

The amateur would also realize that White’s rook is aggressively placed at h4 but threatened by a bishop. He would look for a forcing way to make use of the rook. But 1.♕e5+?? just loses the queen and 1.♕c3+? ♕xc3 2.bxc3 ♗xh4 trades into a dead-lost endgame.

That’s a lot to see. But a master would see something else. If the queen were to check on another square, such as d4 or h6, mate would follow immediately.

With that in mind, a master quickly calculates a promising line:

**1.♕e3!!**

What he saw was 1...♗xh4 2.♕d4+, which can lead to 2...♗f6 3.♕xf6+ ♔h6. (Or Black can play 2...♔h6 3.♕xh4+ ♔g7 4.♕f6+ ♔h6. The same position is reached.)

The master would see that far and realize he can force perpetual check. But he would look further, for a knockout. Then he would find 4.♖f4!. It threatens 5.♖h4#.

Black could avoid that with 4...♕xf4, but after 5.♕xf4+ ♔g7 White is now ahead in material and there is likely to be a way to win more of it. (It’s there: 6.♕d4+ and 7.♕xd5.)

The master would also see that Black has one alternative after 1.♕e3. That’s what happened in the game.

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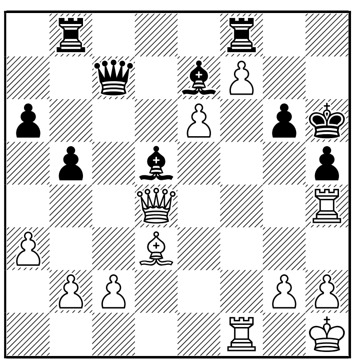
| **1...** | **h5!** |
| **2.♕d4+** | **♔h6** |



A master might only see this far when he began calculating 1.♕e3. But he appreciates that Black’s king position has been weakened considerably since the position in the previous diagram.

A master “feels” that there should be a killer here. He knows it should be a forcing move, such as 3.♖f6. That threatens 4.♖xg6+. A quick look at 3...♗xf6 4.♕xf6 with a threat of 5.♕xg6# looks good. But he also finds:

**3.♖xh5+!**

A check is more forcing and its consequences are generally easier to calculate. White saw that 3...gxh5 4.♖f6+ leads to another quick mate (4...♗xf6 5.♕xf6#; 4...♔g5 5.h4#; or 4...♔g7 5.♖g6+).

Black saw that much – and also that 3...♔xh5 4.♕g7! ends resistance, with its threat of ♕xg6+ – so he **resigned**. Once again good calculation clinched the win.

Calculation may well be the most important skill a chessplayer can master. Yet more misinformation is circulated about calculating than about any other aspect of chess.

It is widely believed, for example, that you are born either with or without calculating ability, that it cannot be taught. Almost everyone agrees, furthermore, that computers calculate much more efficiently than humans. And it is stated with the utmost authority that there is one and only one correct method of counting out variations, which all masters follow rigorously.

None of these statements is true. Calculation is a skill that can be studied, learned, and sharpened. A player can calculate much more efficiently than any machine. And masters select moves and visualize and evaluate their consequences using a wide variety of methods.

We'll examine these claims in subsequent chapters, but right now let's consider a few more myths:

## The Myth of the Long Variations

A popular view among amateurs is that grandmasters are grandmasters because they routinely see 10 moves ahead. There are, of course, examples of this by GMs, but they are relatively rare.

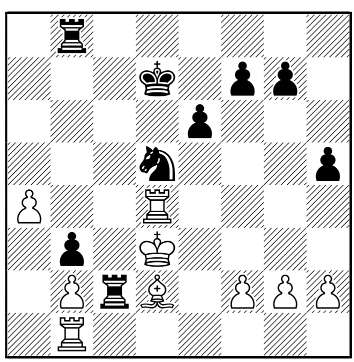
Much more common is the kind of calculation that calls for seeing *not more than two moves* into the future. And most of the time these two-move variations lead only to minor improvements in the position. But these improvements can add up.

When Mikhail Botvinnik lost on first board during the 1955 Soviet-American match, the world champion explained the result simply: "It shows I need to perfect my play of two-move variations."

Let's see what Botvinnik meant:

**RESHEVSKY – BOTVINNIK**
USA-USSR Match
Moscow 1955

**1.d4 e6 2.c4 d5 3.♘c3 c6 4.e3 ♘f6 5.♘f3 ♘bd7 6.♗d3 dxc4 7.♗xc4 b5 8.♗d3 a6 9.e4 c5 10.e5 cxd4 11.♘xb5 ♘xe5 12.♘xe5 axb5 13.♕f3 ♕a5+ 14.♔e2 ♗d6 15.♕c6+ ♔e7 16.♗d2 b4 17.♕xd6+!? ♔xd6 18.♘c4+ ♔d7 19.♘xa5 ♖xa5 20.♖hc1 ♗a6 21.♗xa6 ♖xa6 22.♖c4 ♘d5 23.♖xd4 ♖b8 24.♔d3 h5 25.♔c4 b3 26.a4 ♖c6+ 27.♔d3 ♖c2 28.♖b1**



Because it was played in the depths of the Cold War, this game drew enormous attention and the news accounts made much of White's queen sacrifice at move 17. Actually, it was just a three-move combination designed to trade down to an equal-material endgame.

What do we have now? White has a passed a-pawn, a somewhat better-positioned king, and a minor piece (the bishop) with greater scope. But his pieces are temporarily tied to the defense of his second-rank pawns. Black's rooks and centralized knight should give him enough counterplay. Here, for example, Black has good winning chances with 28...♖b6!, threatening 29...♖d6, 30...e5, and a powerful discovered check once the d4-rook moves.

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| **28...** | **♖bc8?** |

Botvinnik saw 28...♖b6 but talked himself out of it, thinking that 29.♖c4, threatening 30.♖xc2, was a strong reply. What he overlooked was 29...♖c6!, after which White's position is precarious (30.♖xc2 ♖xc2 31.a5 ♔c6 and White begins to run out of moves).

So Black prepares ...♖bc8-c6-d6, stopping 29.♖c4 but costing himself a vital tempo. Black is not losing now, he's just not winning.

| | |
|---|---|
| **29.a5** | **♖8c6** |
| **30.♔e2** | **♖d6** |
| **31.♔e1** | |

Now we see why the lost tempo is important. If White's pawn were still on a4, Black would be close to scoring with 31...♘b6! 32.♖xd6+ ♔xd6 33.a5 ♘d5, followed eventually by ...♔c5 and ...♘b4.

| | |
|---|---|
| **31...** | **♘c7?** |

A second miscalculation of a two-move variation. Botvinnik said he was in a rush to exchange rooks, overlooking that 31...e5 32.♖d3 ♘c7! reaches the same position as in the game but with an extra ...e6-e5 thrown in (33.♖xb3 loses the d2-bishop).

| | |
|---|---|
| **32.♖xd6+** | **♔xd6** |
| **33.♗c3** | |