

NEIL MCDONALD
COACH
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A COMPLETE GUIDE
TO SELF IMPROVEMENT AT CHESS

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About the Author

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Also by the Author:

Break the Rules!

Catalan: Move by Move

Chess Secrets: The Giants of Power Play

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Contents

About the Author	3
Introduction	5
1 Immunizing Yourself Against Blunders	6
2 Training Your Tactical Imagination	20
3 Teaching Yourself to Calculate	40
4 Judging the Right Moment to Use a Combination	61
5 Supercharging Your Feel for the Initiative	89
6 Know Yourself: Diagnosing Positional Mistakes	130
7 Learn How to Shut a Piece out of the Game	159
8 Getting Full Value from Your King	173
9 Wearing Down the Opponent's Pawn Structure	184
10 Practice Planning on a Grand Scale	215
11 Mastering Pawn Breakthroughs in Endgames	246
12 Understanding the Essentials of the Endgame	262
13 Making Good Opening Choices	287

Introduction

Along with the excitement of competition and the pleasure of social activity that chess brings to our lives, there is also the joy of intellectual challenge. We all want to get better at it. There is something deeply satisfying about seeing our skill and knowledge grow.

The aim of this book is to show you everything you need to be working on to become a better player. Tactics, strategy, and the endgame are covered in detail, and you are offered guidance on subjects such as calculation, analysing your games, and choosing your openings.

Don't expect to understand everything straight away as some of the material is hard: *fiendishly* hard. It is meant to get you thinking and pushing forwards at the limits of your understanding. But just as the Romans trained with heavier weapons than those used in battle, your task in your own games will seem much lighter after analysing the combinations and strategy of the great players.

It's not my intention to be a lifestyle guru. But we both know that exercise, a balanced diet, and a regular routine during tournaments will be of benefit to your chess. When world champion Magnus Carlsen was asked by an interviewer if he was afraid for his title because an upcoming player was spending sixteen hours a day or more studying chess, he replied laconically: "He should get more sleep." There are many games by the great Magnus presented here, but that is the most useful thing you will learn from him.

I hope that this book will spur you on to devise your own study plan. This will mean making time not only to look at openings, but also to solve chess puzzles, annotate your own games, learn about chess history and the great masters, read books about the endgame, practice calculation by selecting complicated positions to analyse to death, and so on. The more work you put in the better (while remembering Carlsen's admonition!).

Let me wish you luck in your quest to learn more about the mysteries of chess.

Neil McDonald,
Gravesend, Kent,
February 2019

Chapter Three

Teaching Yourself to Calculate

Most of the time players are focusing on their plans. As they carry them out they might look a couple of moves ahead to make sure they aren't going to fall for any of the traps outlined earlier in this book. Similarly, they will be alert to any unexpected tactical chances if their opponent slips up. But the emphasis is on the role of calculation, if it occurs at all, as a kind of blunder check. It reassures them that the path they are taking is a safe one.

That changes when we reach scenarios like those discussed in the previous chapters. Tactical sparks begin to fly when the two armies are locked in close combat. The pieces will fight to the death to defend their king and will employ all the tricks at their disposal. Suddenly calculation is not only necessary, you have to find something special. You can't rely on common sense any more.

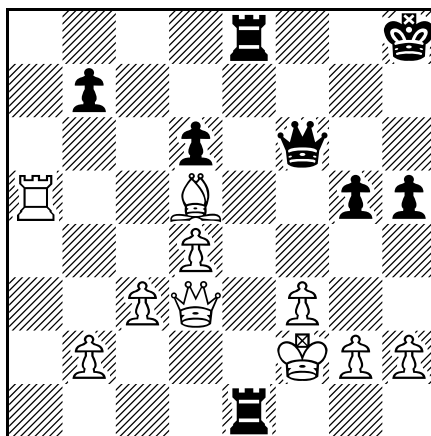
Usually there is a key move on which the success of a combination depends. We have to use our powers of calculation to find it. Five factors come into play:

1. How unusual or otherwise difficult to see is the key move?
2. How far down a variation is the key move concealed?
3. How long is the combination?
4. How forcing is the combination?
5. How many other variations are obscuring the line with the key move?

In order to find the key move you need both tactical vision and imagination. It doesn't matter if you can calculate ten moves deep if the winning idea escapes your attention because it is counter-intuitive.

The Key Move is Right There, but Difficult to See

V.Anand-F.Caruana
Stavanger 2018



Question: It is White to play. After the game Anand regretted his next move and suggested to his opponent that “36 g3 would have been about equal.” What did Caruana have great pleasure in telling the Indian grandmaster was his intended reply? (See below for the answer – it’s something special!)

Let’s see how the game actually continued:

36 ♖a8

Aiming to reduce the pressure on the e-file, but:

36...♜f4!

A deadly infiltration and much better than 36...♖xa8 37 ♜xe1.

37 ♜xe8+ ♜xe8 38 ♜d1

To meet the threat of 38...♜h4+ and also stop 38...♜c1.

38...♜xh2

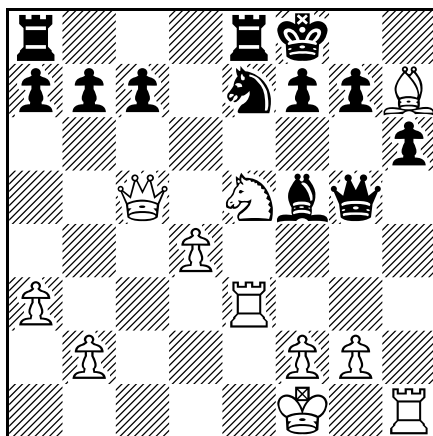
Now the white king was in danger and gradually driven out and mated. Anand resigned on move 51.

Answer: After 36 g3? Black has the pretty queen offer 36...♜f5!. Then 37 ♜xf5 ♜8e2 is mate, while if 37 ♜e4 (what else?) 37...♜xa5 38 ♜xe1 d5, Black wins the bishop.

The refutation of 36 g3 is easy to calculate once you have become aware of Black’s first move. But leaving the queen en prise isn’t intuitive and takes tactical imagination.

The Position is Cluttered with “Other” Variations

Wei Yi-Yu Yangyi
Danzhou 2017



It is White to play. Another reminder that there is more to chess analysis than calculating variations: flair and imagination play a vital part. Before reading on, you might like to analyse the diagram position and try to find the best move for White.

If I was shown this position and asked to find the best move a lot of thoughts would run through my head. My stream of consciousness might be something like this:

“White’s bishop is hanging... the black king would be mated by ♖d7 if his bishop on f5 was eliminated or deflected... the black knight is helping to defend f5 but is pinned and can be attacked again by the rook on e3 with gain of time by ♖f3 as the knight attacks the black queen... ♗c4 to attack f7 might be good for White... or ♗g3... or some trick with ♖xf7... or ♗f3... or first ♗xf5 ♗xf5 ♗f3 but then ♗b1+... is f4 any good...?”

After seeing whether any great idea leapt at me I would attempt to calculate some variations. I’d look at 22 ♗g3 but be scared of 22... ♗d2!, threatening mate, and think I was lost after 23 ♖g1 ♗xh7 (but actually 24 ♖d7+ ♖g8 25 ♖f6+ ♖h8 26 ♖xe8 ♗xe8 27 ♗e3 pins the knight on e7 and leaves Black with nothing better than forcing a draw with 27... ♗xb2 28 ♗xe7 ♗xe7 29 ♗xe7 ♗c1+ 30 ♖h2 ♗f4+ 31 ♖g1 ♗c1+ etc).

I’d also try to understand 22 ♖f3 ♗f4 23 ♗xe7 and wonder whether I’m just picking up two pieces for a rook after 23... ♗xe7 24 ♗xf5 or does Black have a trick (answer: yes, he does, namely 23... ♗xh7!, when White’s discovered check is nothing special after 24 ♗xe8+ ♖xe8 or 24 ♗xc7+ ♖g8; White is definitely not better).

Alternatively, 22 f4?! ♗f6! is less than nothing for White (but not 22... ♗xf4+ 23 ♗f3,

when Black is in trouble down the f-file). Also 22 ♖c4 is brushed away by 22...♙e6. And finally, if 22 ♜f3 ♗xh7 23 ♜xf7+ ♖g8 24 f4 (aiming to trap the black queen after 24...♞g3 25 ♜h3), it turns out that White has played like a genius just to get a lost game: 24...♞xe5! 25 fxe5 ♗d3+ 26 ♖g1 ♗xf7 leaves him too much material down for the queen.

That's a big jumble of words and numbers. But all the calculation in the world won't find you the best continuation in the position unless you hit on the right first move. And if you do hit on the right move, then hardly any calculation is required. Some moves are fiendishly difficult to spot but very easy to work out. And such is the case here with:

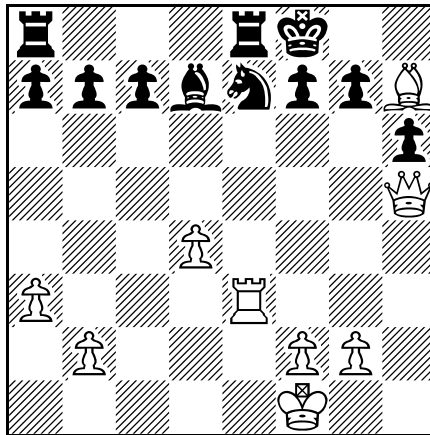
22 ♜h5!!

The rook on h1 was almost completely forgotten about in the analysis above. If Black moves his queen to f6 or f4, simply 23 ♜xf5 wins a piece. If he counter-attacks with 22...b6 then 23 ♜xg5 (and not 23 ♞b4?? ♞xh5) 23...bxc5 24 ♜xf5 is tragic for Black, who can't even take on f5 or d4 because of 25 ♗d7 mate.

22...♞xh5 23 ♗d7+

The point of the combination.

23...♗xd7 24 ♞xh5



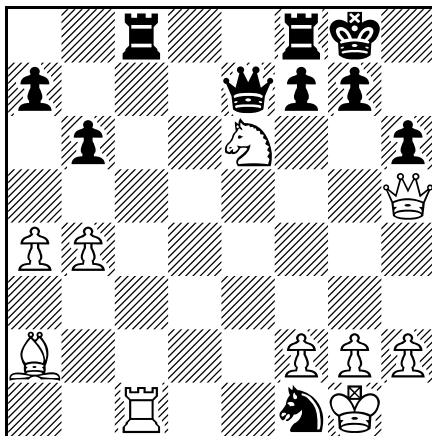
Black has nominal material compensation (rook, knight and pawn), but in a middle-game situation where White has the initiative the queen is undoubtedly to be preferred. Still, Black is fairly solid and White only prevailed on move 64 after a stubborn resistance.

It's difficult to judge how many moves you should look at in a given position. Your experience or chess erudition will tell you (often unconsciously) to weed out (and so avoid wasting time calculating) moves which have no *capacity* to be good. The danger is that you do too much pruning of possible moves and so never even consider the one which you needed (again, this is likely to happen unconsciously, making it an even harder fault to overcome).

As always with improving facets of your calculation, the way to get the perfect balance

between too much and too little pruning is practice, practice, and more practice. In a forcing situation the number of potentially good moves is often low. But even here, too much pruning can make you miss the key move.

D.Navara-N.Grandelius
European Cup, Porto Carras 2018



It is White to play (yes, there really is a black knight on f1!). Navara tried 22 ♖e1 but eventually lost after 22...♗h8! 23 ♙b1 ♘d2 24 ♗d1 fxe6 25 ♗xd2 ♗f6 26 g3 ♗c3. Instead, the Czech grandmaster had the spectacular alternative **22 ♕g6**. The white queen throws herself at the black defences with the threat of mate in one.

Question: Before reading on, can you list all of Black's possible replies and work out what the result should be?

Answer: How many possible replies did you examine? The threat of mate on g7 cuts down Black's options. You might begin your analysis by noting to yourself all the pieces hanging: White's queen, knight and rook; and Black's rook on f8, knight on f1, and g7-pawn. The black rook on c8 isn't hanging but is in a standoff with the white rook.

First of all, we should try the move we'd like to make:

1. It turns out the queen can't be accepted: 22...fxg6 23 ♘xf8+ ♗h8 (23...♗xf8 24 ♖xc8+ ♗e8 25 ♖xe8+ ♗xe8 26 ♗xf1 leaves White a piece up, while the heroic 23...♖c4 fails to 24 ♖xc4, when the threat of a queen-winning discovered check is decisive) 24 ♖xc8 leaves Black defenceless due to mating threats against his king. For example, 24...♗e1 (saving the queen from a fork on g6 and threatening mate in one) looks at least okay for Black until you see the mating pattern 25 ♘d7+ ♗h7 26 ♙g8+ ♗h8 27 ♙f7+ (getting the bishop to f7

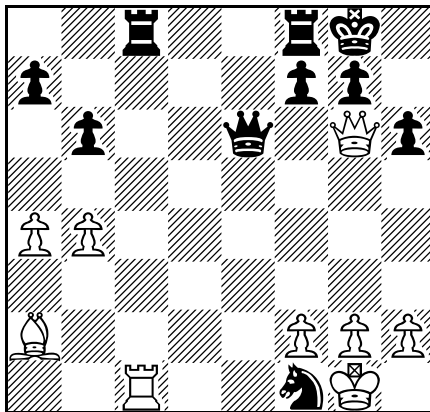
where it will guard the knight on g6 with gain of time) 27...♔h7 28 ♖f8+ ♕h8 29 ♖xg6+ ♕h7 30 ♖h8 mate. Moving the queen to other squares than e1 doesn't help; e.g. after 24...♗b7 White has 25 ♖e8! ♗c6 26 ♜d7+ ♕h7 27 ♙g8+, mating as in the sequence above.

2. If we can't have the queen let's stop mate by taking on e6 with the pawn: 22...fxe6. This turns out to be totally inadequate after 23 ♙xe6+ (White can also enter a winning endgame with 23 ♗xe6+ as he will take on c8 and emerge a pawn up) 23...♕h8 24 ♖xc8 ♖xc8 25 ♙f5! (an instructive zwischenzug: the threat of mate forces the black king to g8 where it becomes susceptible to a check on e6) 25...♕g8 26 ♙xc8 and White is a pawn up with strong pressure. If 26...♗e1, White wins with a mating attack beginning 27 ♙e6+, or else 27 ♗e6+, exchanging queens then picking up the knight. But imagine if the black king were still on h8; i.e. White played 25 ♙xc8 at once. In that case 25...♗e1 leaves him with nothing better than a draw after 26 h3 ♜d2+ 27 ♕h2 ♖f1+ etc.

3. Unable to stop mate on g7 by taking queen or knight, it seems we are reduced to defending the square with 22...♗f6 (if 22...♗g5? with the same idea, then 23 ♖xg5 wins as the f7-pawn is still pinned). This is dismal too, though it's a much better chance to draw for Black: 23 ♗xf6 gxf6 24 ♖xf1! and the rook on f8 is hanging, so 24...fxe6 25 ♙xe6+ ♕g7 26 ♙xc8 ♖xc8 is pretty much forced. After 27 f3 White has fair chances of winning the endgame a pawn up.

Well, 22 ♗g6 is looking good for White. But have we considered *all* of Black's possible moves?

4. There is one we have overlooked: 22...♗xe6!.

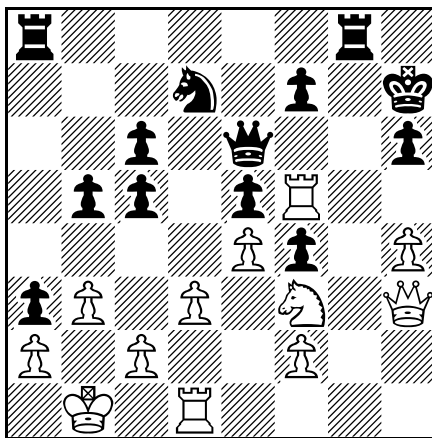


Black's queen also puts herself en prise. This even wins for him after 23 ♙xe6 ♖xc1. The threat of mate gives White no time to save his bishop: 24 f3 fxe6 25 ♗xe6+ ♕h8 and with two rooks and a knight for a queen and a pawn, plus a rampant attack on the king, Black wins easily.

I guess Navara had planned 22 ♗g6 some way ahead but pruned his calculations one move too much in not considering 22...♗xe6!. He therefore had to swerve with 22 ♖e1, when it was too late to save the game. A rare lapse for such a brilliant player.

The Key Move is Two Moves Deep, and Difficult Enough to Fool a World-class Player

V.Anand-A.Grischuk
Moscow 2018



Question: It's White to play. Black has just moved his rook from d8 to g8. Can you find the short but great combination which clinched for Anand the game (and also the tournament)?

There is a video of Grischuk's face at this point. He looked totally bemused after Anand's next move as he hadn't seen the idea behind the knight sacrifice. Well, he didn't have long to wait in a rapidplay game to find out:

Answer: 27 ♖g5+! hxg5 28 ♜xf7+! ♜xf7

Otherwise the queen is lost.

29 hxg5+ ♔g7 30 ♜h6 mate

Note that you can't play the moves in the order 27 ♜xf7+? ♜xf7 28 ♖g5+ as Black then has 28...♜xg5! 29 hxg5 h5.

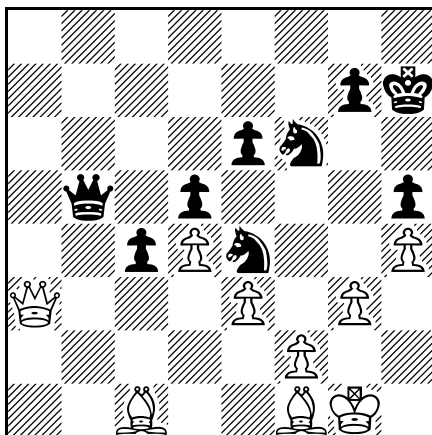
The hard move was 28 ♜xf7+!. Most players would notice the possibility of 27 ♖g5+ hxg5 but look at no alternatives other than 28 hxg5+?, when 28...♔g7 leaves White with nothing for the piece. It takes imagination to see that, despite only having the queen and a pawn on g5 left to attack with, White can mate on h6: the black king is boxed in by his own queen on f7 and rook on g8.

Even the strongest players miss resources for themselves and their opponents when

they calculate variations. There is a limit to what is humanly possible and factors such as time pressure and anxiety – or its opposite, overoptimism – make perfection even less likely. Unless your opponent puts up no resistance you are surely going to overlook some things, even in games you win. So don't be too hard on yourself. Everyone makes “inexplicable” oversights. Instead of kicking yourself during a game for missing something, accept this as an inevitable part of chess. Well, I'm giving all this “wise” advice but I have to admit I'm usually less than philosophical when I realize I've made a terrible blunder. It's something we all have to work on.

In the next example the key move is lurking on move two and is also hard to spot.

Ding Liren-V.Topalov Shamkir 2018



Question: It's Black to play. Before you read on, without moving the pieces have a look at 42...♘g4. Try to work out some variations. The move is discussed further below.

Returning to the diagram position, the blocked nature of the pawn structure means that Ding Liren's bishop pair is distinctly underwhelming. Topalov has a bind on the light squares, a protected passed pawn, and a magnificent knight on e4 which can't be evicted by f2-f3 as g3 would drop. It's time for him to strike at the white position.

First of all, Black could try 42...♚b1, when he has the massive threat of 43...c3, taking the b2-square away from the white queen, followed by 44...♚c2 with fatal pressure on f2. However, White can force the exchange of queens with 43 ♚b2! ♚xb2 44 ♙xb2. It remains a bit uncomfortable for White but he will be able to edge his king closer to the passed c-

pawn with ♕e2 and ♖f1 (or if Black stops ♖f1 with ...♘d2, then f2-f3 and ♖f2). It should be a draw.

Instead, the sacrifice **42...♗xf2?** was played in the game. Black's attack proved good enough for equality but no more:

43 ♖xf2 ♘e4+ 44 ♖e2 c3+ 45 ♖e1 ♜b1 46 ♕g2!

Ding Liren saves himself by exchanging off the black knight.

46...♜c2 47 ♕xe4+ dxe4 48 ♖f1 ♕g6 49 ♖g1 ♖h7

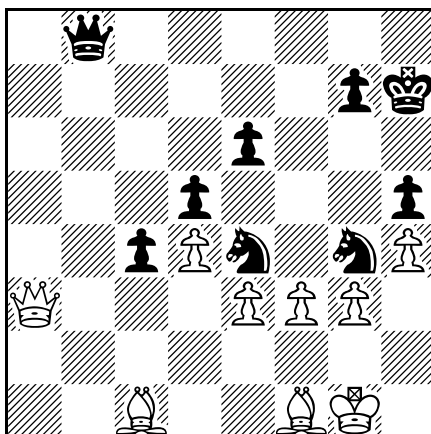
A sensible decision. Topalov can force a draw by perpetual check any time he wants due to the light square holes in the white position, but he can't do better. He would love to get his king to h3 to mate the white king, but 49...♖f5 50 ♜f8+ ♕g4 51 ♕a3 only gives White winning chances as 51...♖h3? fails to 52 ♜f1+.

50 ♖h1 ♖h6 51 ♖g1 ♖g6 52 ♖h1 ♜d1+ 53 ♖h2 ♜e2+ 54 ♖g1 ♜d1+ 55 ♖h2 ♜e2+ 56 ♖g1 ♜e1+ 57 ♖g2 ♜e2+ 1/2-1/2

Answer: The best move for Black is **42...♗g4!**

Have you analysed it? White can't let the f2-pawn drop for nothing, so he has to accept the piece offer:

43 f3 ♜b8!



Did you manage to see this tremendously strong retreat by the queen? Now the g3-point collapses, leaving the white king threadbare.

44 fxg4

He has to take the knight that controls the h2-square, otherwise 44 fxe4 ♜xg3+ 45 ♕g2 ♜e1+ 46 ♕f1 ♜f2+ 47 ♖h1 ♜h2 would be mate.

44...♜xg3+ 45 ♕g2 ♜f2+ 46 ♖h2 hxg4!

In the game Ding Liren was able to exchange off his bishop on g2 for the knight on e4 and avoid having his king attacked by any pawns on the kingside. Here his monarch is being mobbed by the black queen, horse, and rampant pawn on g4. The finish might be:

47 ♖b4 g3+ 48 ♔h1

Or 48 ♔h3 ♖f5 mate.

48...♗e2!

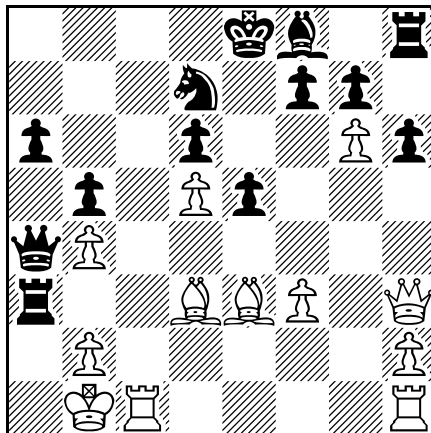
White can do nothing about a killer check on d1.

The Combination is Long, but the Key Move is Right There and the Play is Forcing

In some cases a variation is long but calculation is helped by the forcing nature of the play. When there are *captures*, *checks* and *direct threats* they simplify your task as they reduce the number of options you need to analyse.

As a young player keen to improve my analytical ability I gathered together a lot of puzzles from P.H.Clarke's column in the *Sunday Times* (you might know him as an author of books on Tal and Petrosian). Here is one of the examples I tried to solve:

B.Perényi-L.Barczay Hungary 1979



This is the culmination of an attack by Béla Perényi, a Hungarian IM who died tragically young in a car accident in 1988.

Question: It's White to move. The black king is trapped in the centre – how to finish him off? It had better be with some checks, or else Black will get in first with a big check of his own.

I still have “stream of consciousness” notes I made on the position when I was 13 or 14 years old. (I treated it like a real game and didn't move any pieces in trying to solve the puzzle.)

It's clear I was weak both in spotting moves and in choosing the correct order to analyse them. For example, I noticed that Black was threatening 25...♖a1 mate. Therefore I began my analysis with the "obvious" 25 bxa3 and spent time looking at 25...♙b3+ 26 ♔a1 ♙xa3+ 27 ♙b1, when Black can force perpetual with 27...♙b3+ or grab material with 27...♙xd3+ and 28...♙xe3 with unclear play.

It is totally wrong to begin the analysis with these lines. Instead, I should have started with forcing moves: 25 gxf7+, 25 ♖c8+, and the queen sacrifice 25 ♙xd7+.

If one of them turns out to be winning there is no need even to consider 25 bxa3, which is a draw at best for White. You can't afford to waste time and energy during a game. *Always start with the forcing moves.*

When (much too late) I got onto the attacking moves I began with 25 gxf7+. One line I analysed was 25...♙xf7? 26 ♙xd7+(?) ♕e7 27 ♙e6+ ♔f8 28 ♖c8+ and White mates. In my notes I seem pleased with myself for finding this combination, and justifiably so as it's four moves long. But here we see a prejudice in favour of playing moves that capture pieces. Instead, 26 ♙e6 is an immediate mate. My only (and quite valid) excuse is that I had never seen a mate of this kind at the time.

So far so good, but after 25 gxf7+ I couldn't crack 25...♙d8!. And I still can't all these years later. I very much wanted to give up my queen: 26 ♙xd7+ ♙xd7 27 ♕f5+ ♙e7 28 ♖c7+. I could see a mate after 28...♙d8?, namely 29 ♖d7+ (here I was very pleased to have the pawn on f7 stopping the king going to e8) 29...♙c8 30 ♖c1+ ♙b8 31 ♕a7+! ♔a8 32 ♖c8 mate. I remember working out the chase of the black king to a8 very slowly and carefully, making sure there was no way for him to slip out.

But 28...♙f6! frustrated me. The black king had found a safe refuge.

Next I looked at playing 25 ♙xd7+ straight away. Then, after 25...♙xd7 26 ♕f5+ ♙d8 27 ♖c8+ ♙e7 28 ♖c7+, it dawned on me that Black no longer had a bolt hole on f6 as 28...♙f6 29 ♖xf7 would be (a pretty) mate. And if 28...♙d8 29 ♖d7+, Black can't go 29...♙e8 as 30 gxf7 is mate, while 29...♙c8 30 ♖c1+ ♙b8 31 ♕a7+ will mate on c8 as in the line above.

The move 25 gxf7+? is a blunder because, as discussed above, either the pawn wants to take on f7 (29...♙e8 30 gxf7 mate) or the rook (28...♙f6 29 ♖xf7 mate). You have to keep *both* options open. That's why you should begin with 25 ♙xd7+!. (Actually 25 ♖c8+ ♙e7 26 ♙xd7+! ♙xd7 27 ♕f5+ comes to the same thing. It's interesting to verify this alternative move order in analysis, but remember once you've found a forced win during a real game it's a bad habit to look for alternatives.)

Answer: In the game Barczay resigned at once after 25 ♙xd7+!.

My analysis in 1981 was far from perfect, but that didn't matter. I was picking up tactical patterns and learning to calculate variations, including the order in which you should consider moves in a sharp position. I hope you also develop the habit of solving puzzles. A few a day could make all the difference.

The Key Move is a Number of Moves Deep but the Play is Forcing

In the next example Black blunders into a combination by his opponent. The winning move