

JOSHUA SHENG & GUANNAN SONG

MASTERING CHESS LOGIC

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About the Authors

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Foreword

I want to start by congratulating the readers on having such great taste in chess literature! At a time where it seems as if there is a chess book about every piece and square on the board, the authors take on an obscure topic that is essential to every chess player. Logic, the thought process in chess (and coincidentally a chess-loving Grammy-winning rapper), has seldom been written about and examined until now.

I am honored to have been approached by the authors to write the foreword for this book. The authors, with whom I have been close friends for many years, are both strong competitive players with years of experience teaching. *Mastering Chess Logic* exemplifies their coaching abilities through its organization and easy-to-understand explanations.

For many players, including myself, logic seems like a mysterious entity mentioned from afar, gifted to certain players who are just naturally better. They seem to pull moves out of thin air in positions where it is unclear how to continue. Such positions that are not dominated by tactics and concrete calculation occur frequently. This is where many players flounder, summoning books on positional, strategic, and dynamic play onto their bookshelf. However, how does a player decide which book to pull out and reference? This dilemma afflicts players of all levels and is one I often notice in my games. Although with hindsight it is obvious what the issues are, I still create the same problem repeatedly, simply because it is challenging to connect the dots correctly in real-time. I'm left scratching my head: what came over me in this position to think I should take a dynamic approach when there are no dynamics? The authors boil it down into four main concepts, adding an additional section of exercises to allow the reader to absorb the information better.

This book is well formulated, starting with the building blocks of positional play. These factors are immediately used in the subsequent chapter to evaluate positions. Here, the authors introduce MAPS, an acronym intended to guide the reader to evaluate a situation correctly. Throughout the book, there is a constant theme of presenting known concepts and converging them into something bigger, making it truly stand out. The game examples, many of which are the authors' own, excellently present this tying-in effect. Strategy is then added into the mix of concepts before exploring dynamic play. The readers are constantly tested with puzzles in each chapter.

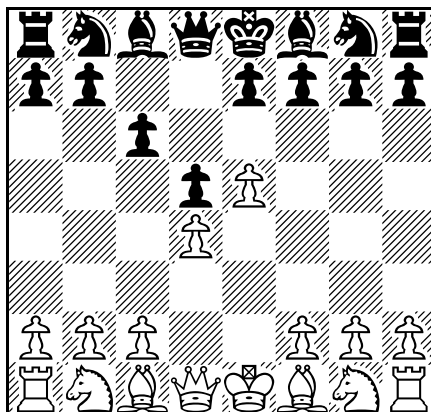
Mastering Chess Logic touches upon many significant chess concepts, compiling them together to be a necessary fixture for any player looking to improve their game.

WGM Jennifer Yu, US Women's Champion 2019, July 2021

Introduction

Chess is a challenging enterprise, with the number of possible games dwarfing the estimated number of atoms in the universe. Given this vastness, it is remarkable we can say with any certainty that specific players are superior to others in any respect. However, what exactly makes the greats such as Carlsen, Fischer, or Kasparov so different from people like your humble authors? While the rudimentary aspects of chess (calculation, memorization of opening theory, and technical endgame ability) are of great importance, the more mysterious aspect of chess lies within the thought process; how does one evaluate some moves to be better than others? How does one improve their feel of the game? This work will attempt to tackle this underexplored aspect of chess: the logic behind the game. The intent of this book is to teach problem-solving abilities by expanding from preexisting knowledge.

According to the chess writer and coach Jacob Aagaard, English chess literature has traditionally been supported by three pillars: calculation, openings, and intuition, the last implying positional ability. This model is noted by Aagaard to be insufficient and somewhat elitist, suggesting that one needs talent to excel in this area. We believe that positions without tactics can still be explained in a logical way. Most such positions have multiple playable moves of roughly equivalent strength and all will accomplish something. This is more than can be said for moves occasionally seen from players of all levels, including grandmasters. Basic knowledge of topics such as “bad bishops” or “worst piece first” is often hard to utilize in games but can be extremely useful if applied correctly. For example:



Evaluate 3...e6

This position will likely be familiar to most readers; it is the starting point of the Advance Variation of the Caro-Kann Defense (1 e4 c6 2 d4 d5 3 e5). 3...e6 is of special attention here because it is a move a student rated around 1400 played in a game. Clearly, it was not readily apparent to the student that the move is a mistake, and who can blame him? No one had taught him how to figure that out. However, this move can be explained to be poor with straightforward concepts:

- 1) The Advance Variation of the French Defense is an opening with the same position but with the pawn on c7 and an extra tempo for Black.
- 2) The black pawn on c7 in the Advance French usually advances to c5 in an effort to attack the “base” of White’s pawn chain.
- 3) The bishop on c8 is a common problem for Black in the French Defense, as it is considered a “bad” bishop by virtue of the black pawn structure involving a light-squared chain of f7-e6-d5.
- 4) The Caro-Kann is played instead of the French because, despite involving an extra pawn move of ...c7-c6 on the way to c5, refraining from playing ...e6 so early prevents the caging of the c8-bishop, which is for now free to roam to g4 or f5.

From this, it follows naturally that 3...e6 is poor and 3...d5 is superior. These concepts are not difficult to understand, and the 1400 student is aware of all of them. However, when the time came, he failed to properly synthesize his knowledge of the game into the proper thought process for deciding his move. This book will attempt to target this issue, but not just to address people of that rating; the problem of playing inexplicable chess is rampant at all levels. *Mastering Chess Logic* endeavors to explain how chess works and thereby target this issue for the reader’s benefit.

This book will be arranged primarily into sections where games will be analyzed, and your authors will talk. The talking and exposition will be predominantly done in the first person to ease communication. The beliefs and opinions held will generally be shared by both authors, although the primary voice will be Joshua’s. At the end of each of the first four chapters, there will be 30 practical exercises intended to reinforce your understanding of the relevant topics. Chapter 5 will consist of another 150 exercises representing a more comprehensive synthesis of the explored material and are designed to test your overall knowledge and understanding. For the most part, we have intentionally avoided mentioning the end result or the game continuation after the point of interest from these exercises, as doing so might distract the reader from the primary point of them – developing your understanding. What matters is the decision-making process at the critical position shown in each puzzle. We have concluded each puzzle at an appropriate point that encapsulates the mini-lesson we want the reader to take away; what happens after this point is immaterial and irrelevant to fulfilling these objectives. The reader is encouraged to solve these puzzles by writing their answers down on paper (or on a computer, if you prefer) before checking the solutions. The puzzles are mostly designed to develop your understanding, as we believe that the justification of the moves is more important than the actual correct answer.

Chapter Four

The Big Game

So far, our discussion has revolved mainly around the subtler imbalances, such as material and pawn structure. We have seen our fair share of attacks, but they have chiefly been viewed as a natural conclusion from a superiority in one or several of the other imbalances. This chapter will look at what is inarguably the most important of the imbalances: safety, wherein the king is the most crucial weakness. More specifically, the concept that I will endeavor to disseminate here is the initiative.

The initiative is very challenging to define in a practically useful way. Most strong players who use this term employ it quite vaguely, without referring specifically to its usual meaning of “the capacity to make threats”. I have always felt that this interpretation is rather useless, as the ability to make threats is not exclusive to the attacking side. I am normally happy to attempt a more presentable definition, but the original definition is so insignificant that I would have a hard time describing anything but its meaning. To me, the initiative refers to a dynamic advantage that can be maintained over time. This description may seem to be a bit contradictory, but the easiest way to think about it is by comparing it with the concept of momentum. Dynamic advantages sometimes fizzle out as the opponent consolidates. Still, there are other instances in which they continue to build over time until they snowball into some kind of return, usually in the form of material gain or a mating attack.

As you may have figured out, the initiative is a necessary ingredient for victory, as all checkmates (assuming near-perfect play) are generated from advantages in time. Time could almost be considered an imbalance in itself, but it usually is sufficient to characterize it as a function of piece activity and safety. On a fundamental level, all attacks require piece activity, and as we delve into this chapter I am sure this notion of activating the pieces whenever possible will be ingrained into the reader’s mind. When coupled with a strong positional foundation and weaknesses in the opponent’s camp, the initiative can often generate a powerful offensive. These elements are generally vital; chess is a draw under perfect play, so a successful attack can only be executed as a consequence of the opponent’s mistakes. Sun

Tzu's adage from Chapter 1 returns as we note that attacking without a solid line of reasoning is simply reckless. Proper usage of time advantages involves a delicate balance between buildup and combinations, and the critical points in which this equilibrium is shifted are better illustrated than explained. In that vein, we can turn our attention to several games that I consider good examples of proper utilization of the initiative.

Game 10
G.Kasparov-U.Andersson
Tilburg 1981

Much as was the case with the Botvinnik-Capablanca game analyzed in Chapter 2, this game has been covered in virtually every treatise on dynamic chess written since its inception. Although the game itself is not indicative of an unattainable level of technical difficulty, its simplicity is not inherently a drawback. I would consider this game one of the most illuminating masterpieces I have ever witnessed. The universally famous 13th world champion successfully dismantles the Swedish defensive bulwark admirably.

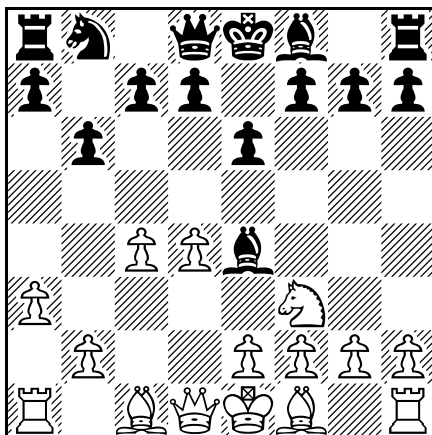
1 d4 ♘f6 2 c4 e6 3 ♘f3 b6 4 a3

The Petrosian system of the Queen's Indian Defense. Kasparov loved this variation, and it was one of his weapons of choice against the QID. The idea is to prevent ♘c3 from being met by ...♙b4 and indirectly support an eventual e4 advance.

4...♙b7 5 ♘c3 ♘e4?!

Andersson's idea here is rather ingenious, even if it is not strong. It goes to show that even positional players of Andersson's caliber can occasionally make poor judgments. 5...d5 is more common and best. Since White wishes to play for e4, Black should try to complicate this as much as possible. 6 cxd5 ♘xd5 and ...♘c3 will disrupt White's pawn structure enough to compensate for the lost central control.

6 ♘xe4 ♙xe4



Black's idea is to transfer the light-squared bishop to the kingside and place his queen-side pawns on light squares. It is theoretically sound but takes too much time. With this plan in mind, one has to wonder why he refrained from playing the Slav instead.

7 ♖d2!

White takes advantage of Black's overextended bishop to increase his central influence. 7 e3 is a more standard-looking move, but it does not do much to prevent Black from continuing his plans: 7...♗e7 8 ♗e2 0-0 9 0-0 d5 and Black is doing okay.

7...♗g6

7...♗b7 should perhaps have been preferred, but it is hard to recommend playing the opening in such a way. I am sure that 8 e4 g6 9 ♗d3 ♗g7 10 ♖f3 is not the kind of position Andersson would have wanted from the opening.

8 g3!

Now that the black bishop has vacated the long diagonal, White intends to put his own bishop there. 8 e4 ♖c6 causes a disruption in the center because of White's slight congestion. After 9 d5 ♖d4 Black is doing fine.

8...♖c6 9 e3 a6?!

While Black's entire opening scheme can be summarized as "too slow", this is too much so. The idea is to blockade on the light squares with moves such as ...♖a7, ...b5, and ...c6 now that the light-squared bishop has left the pawn chain. But come on, just look at it...

10 b4

10 ♗g2 is also possible, but the light-squared bishop can go here at any time. Therefore, Kasparov decides that the more time-sensitive operation is the development of the dark-squared bishop.

10...b5 11 cxb5 axb5 12 ♗b2

12 ♗xb5? ♖xb4 would be problematic.

12...♖a7

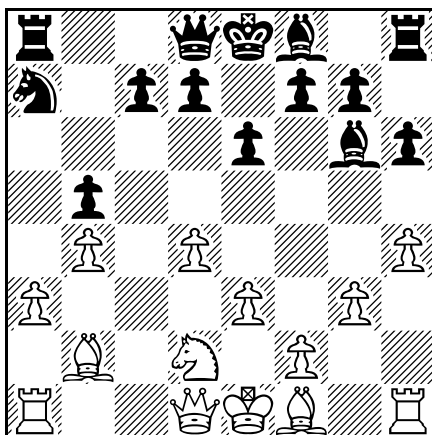
As has been stated ad nauseam before, Black's plan requires an excessive amount of time. It makes sense for White to try to punish this.

13 h4!

The threat to ensnare the black bishop with h5 and g4 is not hard to meet, but h4 benefits White more than a move like ...h6 or ...h5 would help Black.

13...h6

Upon realizing that a typical developing move such as ♗g2 or ♖c1 does nothing to interrupt Black's plans, we come to a critical moment. If Black is permitted to proceed with his initial plans of ...c6 and ...d5 without issue, White's dark-squared bishop would be permanently impaired, and Black would have a very solid position. As such, the time is ripe to take action. 13...h5 was better, to maintain more control over the light squares, but White can meet this in a similar fashion to the game.



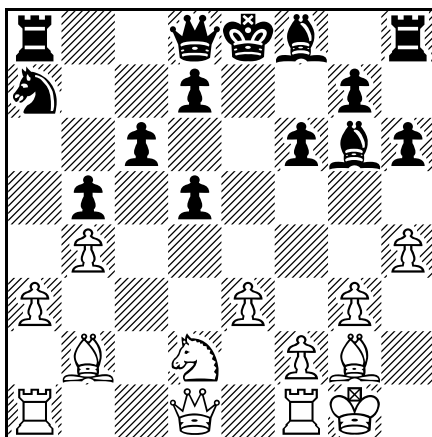
14 d5!

At first glance, it may seem that White is throwing away a pawn while failing to disrupt Black's light-squared pawn formation. However, the opening of the bishop on b2 is of greater significance.

14...exd5 15 ♖g2 c6 16 0-0

Despite his recent material investment, Kasparov first safeguards his king before commencing active operations in the center. Admirable restraint, although perhaps it is helped a bit by the fact that most engines rate this position at nearly +4!

16...f6



We can already see an effect of White's earlier pawn sacrifice – Black's development is hindered considerably by the b2-bishop's piercing gaze. White has numerous good options to proceed with the attack here (and of course he should, given how poorly all of Black's pieces are placed). Noting Black's vulnerable light squares on the kingside (including an undefended light-squared bishop on g6), some candidate moves are ♔g4, e4, and h5. These

moves are perfectly viable, but Kasparov is not one to open the position without including as many of his pieces as possible.

17 ♖e1!

This move is not actually better in the strict sense than the other candidate moves, but it is the most flexible. More crucially, it follows the principle of bringing all of the pieces into the game, a policy that Kasparov endorsed. Even if the other moves are of equivalent value, it is important to keep up with our principles. In this case, Black's lack of mobility means White can easily afford the apparent time loss. 17 ♖g4 followed by h5 is probably no weaker and likely to transpose, but since Black cannot stop the inevitable breakthrough, there is no reason to rush. 17 e4 is considered best by the engine but is not terribly different in character from the other alternatives.

17... ♟e7

A natural developing move that exposes g7.

18 ♖g4

It is now clear that the earlier insertion of h4 and ...h6 has paid dividends.

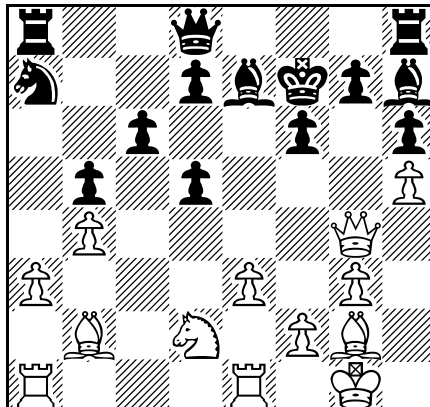
18... ♔f7

The only way to protect g7 and g6, but this places the king in a dangerous spot on the light squares.

19 h5!

Kasparov notices Black's weakened light squares and decides to take further control of g6 before opening the center. The immediate 19 e4 enables Black to take back some light squares with 19...h5, evicting the white queen. White is still in a very good spot, but Kasparov is not one to give his opponent any reprieve.

19... ♟h7



We now are at a point where White's position has been improved to nearly its peak. To progress, White must open the game to get at the black king. This situation is widespread and can be applied to almost all attacks; the key is to recognize at what point this dilemma is reached. Here, we can note that it is challenging for White to enhance his position more than Black can in one tempo. I have shown this position to students in the past, and some have

suggested quiet moves that do not have the desired effect and give Black some respite. While White's positional advantage provides more than enough compensation for his pawn deficit even in the absence of a direct way in, the most active approach is the best here.

20 e4!

In addition to opening the center, this move allows White to remove the defender of g6.

20...dxe4

Black acquiesces to a probable defeat, hoping that White will somehow misplay the attack. This is a sad proposition when facing Kasparov, and I am sure that Andersson was bitterly regretting putting his knight on a7...

20...d4 is a try to return the pawn in a bid to survive the attack. Even ignoring the fact that 21 e5 renders this largely useless, almost any reasonable move preserves a vast advantage for White given the loss of Black's sole asset of material. In a practical game, this kind of move is tantamount to resignation, as Black essentially acknowledges that he will lose. As a titanic defender who staved off Kasparov's winning attempts numerous times in his career, Andersson was undoubtedly aware of this type of dilemma. This is also a point where we can review the perils of working too closely with engines: *Stockfish* will point out that 20...d4 is "only" +5 for White, but both situations are completely lost, and such practical considerations are beyond the computer's capabilities.

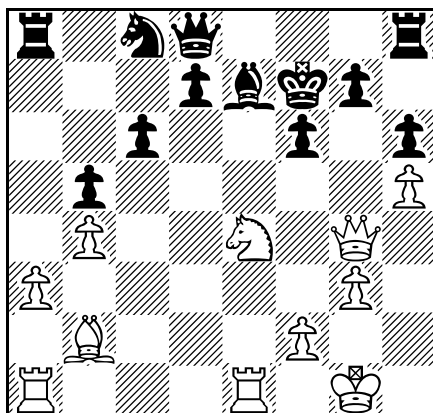
21 ♖xe4

Kasparov recognizes that his light-squared bishop is less valuable than Black's in this position. As stated previously, the significance of 20 e4 is connected with removing Black's bishop on h7. The subsequently opened g6-square will provide the white queen with a comfortable home. 21 ♖xe4? is visually attractive but does not actively contribute to a solid plan: 21...♖e8 and Black can play a little bit, although his piece coordination remains tragic.

21...♖xe4

21...♖c8 is one of several moves that allow White to initiate the trade on h7. After 22 ♖xh7 ♖xh7 White could proceed normally, but there is also 23 ♖xf6! ♖xf6 24 ♔g6+ and Black will have to concede too much material.

22 ♖xe4 ♖c8

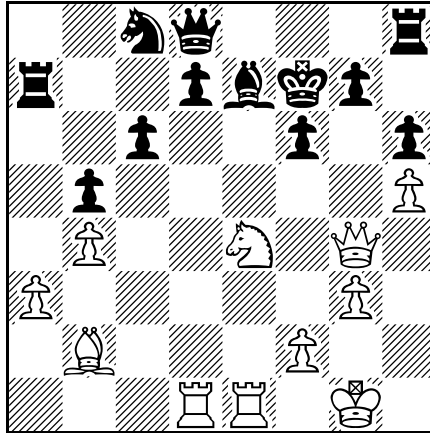


Andersson finally returns his knight toward the center. Better late than never, or so they say, at least. We have now arrived at a very interesting situation. There is hardly an end to the number of candidate moves White has at his disposal, but Kasparov's choice is impressive in its adherence to principle.

23 ♖ad1!

Whether or not this move is technically best is not particularly relevant. If one is to choose between moves of similar quality to one another (almost always the case in this game), it is generally preferable to include more pieces in the game. You never know when you may need them! Here, the weakness of d7 enables this to be done with tempo. 23 ♖d4 is favored by *Stockfish*, with the intention of ♘c5. I am unsure why this is of such importance, and I find the text move more intuitive. 23 ♔e2 intends to double rooks on the e-file, but again I am not sure that this is such a big deal. Kasparov's setup appears to be much more attractive.

23...♖a7



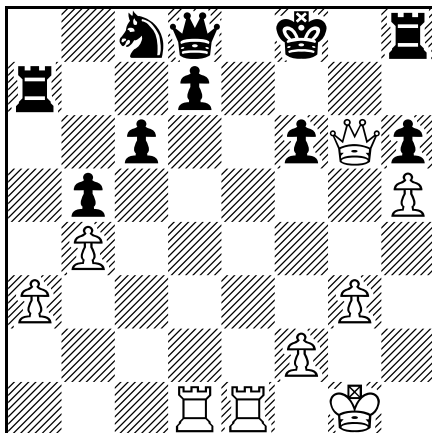
Once again, all of White's pieces have essentially reached the zenith of their possible placements. Black's pieces can barely speak to one another, and the precarious positioning of his king should prompt White to look for a breakthrough. 23...d5 24 ♖d2 does not help Black much in light of the weakened e6-square: 24...♔d6 25 ♔g6+ ♕f8 26 ♗f3 and ♗d4 will facilitate a conclusive infiltration.

24 ♖xf6!

The immediate ♖g6+ leads to the same position, but Kasparov is evidently quite an advocate for cleanliness.

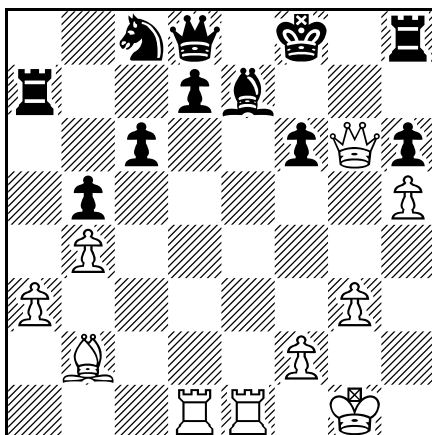
24...gxf6

24...♙xf6 loses beautifully: 25 ♔g6+ ♕f8 26 ♙xf6 gxf6 (or 26...♙xf6 27 ♖e8 mate)



27 ♖e6! – the only winning move, and a dazzling one at that. The usefulness of 23 ♖ad1 is felt strongly as its partner targets the f6-pawn. Black must part with his queen soon to delay the mate.

25 ♔g6+ ♕f8

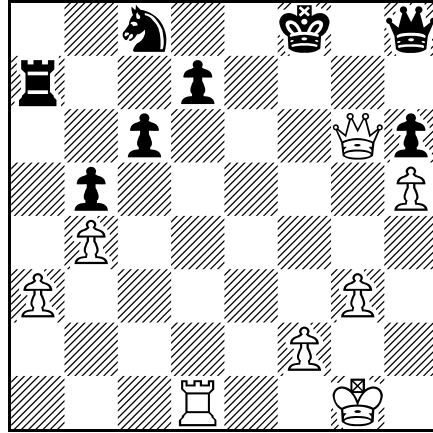


It is about time to clean up here.

26 ♙c1!

What an elegant way to do so! Kasparov notes that the bishop on b2 has fulfilled its purpose and no longer does much there; it is better utilized to attack the weakness on h6.

There was also a more direct way to finish the job: 26 ♖xe7! ♔xe7 27 ♙xf6 ♔h7 28 ♙xh8 ♔xh8 (28... ♔xg6 29 hxg6 is best but hopeless, of course)



29 ♖e1! ♗e7 30 ♜d6 and the dual threats to e7 and b8 will mop up a decisive amount of material. Whether or not Kasparov saw this, I am not certain. What I do know is that Kasparov's choice in the game is simpler and requires less work. When playing chess, it is often best to avoid doing "math" whenever possible to avoid tripping up. Even Kasparov, one of the most incredible calculators of all time, abides by this belief.

26...d5

Nothing is especially helpful here. After 26...♜e8 27 ♙xh6+ ♖xh6 28 ♜xh6+ ♙g8 29 ♜d4 the rook will deliver a devastating check on g4, and 29...f5 30 ♜g4+!! fxg4 31 ♜e4 is simply fantastic. Take a look at the black queenside!

27 ♜d4!

27 ♙xh6+ ♖xh6 28 ♜xh6+ ♙g8 29 ♜g6+ ♙h8 30 ♜e6 is fine and all, but why not take the opportunity to bring another piece into the action?

27...♗d6 28 ♜g4 ♗f7

The black knight rushes over to the kingside in a rather sad attempt to hold h8, but it is too little too late. If only it had been on this wing sooner...

29 ♙xh6+! ♙e8

29...♗xh6 30 ♜g7+ wins a lot of material.

30 ♙g7 1-0

White's h-pawn will run and claim a rook plus some interest.

If there is one thing I want to impart through the exploration of this game, it is to always include your pieces. We can contrast Kasparov's treatment of eschewing direct approaches in favor of building a solid positional base (17 ♜e1, 23 ♜ad1, and 26 ♙c1) with Andersson sending his knight and then rook to a7.

Chapter Five

Beginning and End

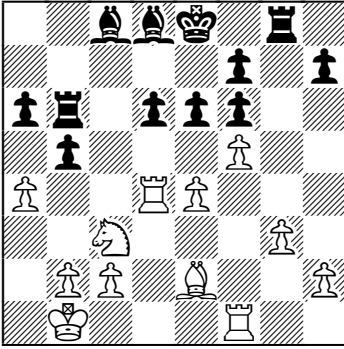
We are almost at the end of our journey together, and we thank the reader for putting up with us for so long. We hope you will be in a better place upon finishing this book regarding your practical play and ability to approach decisions logically. Perhaps you even enjoyed the ride!?

The following 150 exercises have been carefully selected from actual games (like the prior exercises in each chapter) to test the reader primarily on conceptual thinking related to previously discussed topics. There is no particular theme, but the puzzles are largely divided into categories related to the motifs of each chapter. The ordering has been randomized to better allow the reader to test their knowledge and understanding. Chess is a game of pattern recognition and, while we cannot possibly hope to account for every pattern, the transferable skills picked up should prove helpful in your chess career.

121) D.Nomin Erdene-N.Meshkovs

Graz 2020

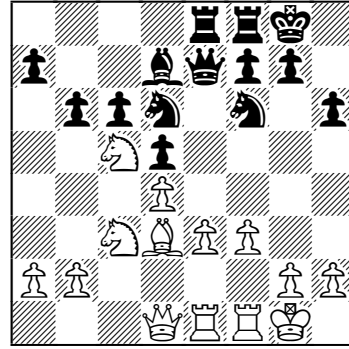
Black to play



124) M.Aditya-A.Kozak

Moscow 2020

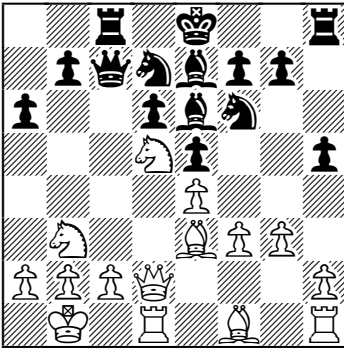
White to play



122) T.Stijve-C.Albornoz Cabrera

Bad Ragaz 2020

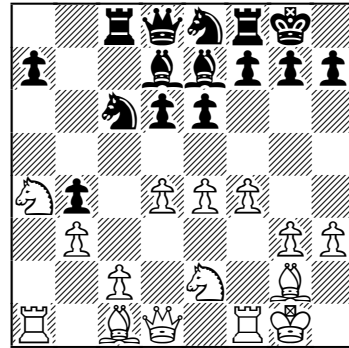
Black to play



125) A.Fedorov-K.Petrova

Prague 2020

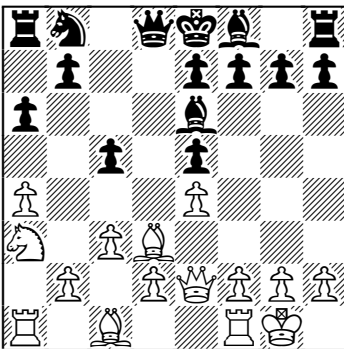
White to play



123) M.Kobalia-B.Savchenko

Moscow 2021

White to play



126) N.Mohammad-M.Lagarde

Cappelle la Grande 2020

Black to play

