

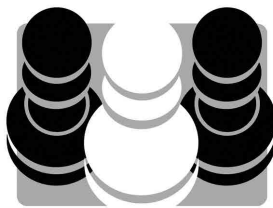
*Grandmaster Preparation*

# Thinking Inside the Box

By

# Jacob Aagaard

*In memory of Mark Dvoretsky*



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# Acknowledgements

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Any serious work is influenced heavily by the work of others, both directly and indirectly. I would like to take the chance to thank some people who helped me over the years to develop the ideas presented in this book, and who supported me with friendship and advice during the writing of it.

I have learned a lot from Mark Dvoretzky, Artur Yusupov, Henrik Danielsen, Henrik Mortensen, Sune Berg Hansen and Boris Gelfand.

Colin McNab, John Shaw, Andrew Greet, Ian Kingston, Semko Semkov and Sam Shankland all helped with the completion of the book.

Shai Dolinsky read the psychology chapter and confirmed that it is not complete bunk.

Nikos Ntirlis wrote an appendix on the technical aspects of computers, which I am no expert in, but which I am sure some people will find very helpful. I am grateful to him for doing this.

My students have inspired me a lot – perhaps more, I fear, than I have them. I want to thank Sabino Brunello, Marina Brunello, Felipe El Debs, Sam Collins, Sabina Foisor and Surya Ganguly especially. I have worked with many others over the years and greatly appreciate your confidence in me and the discussions we have had about chess and life.

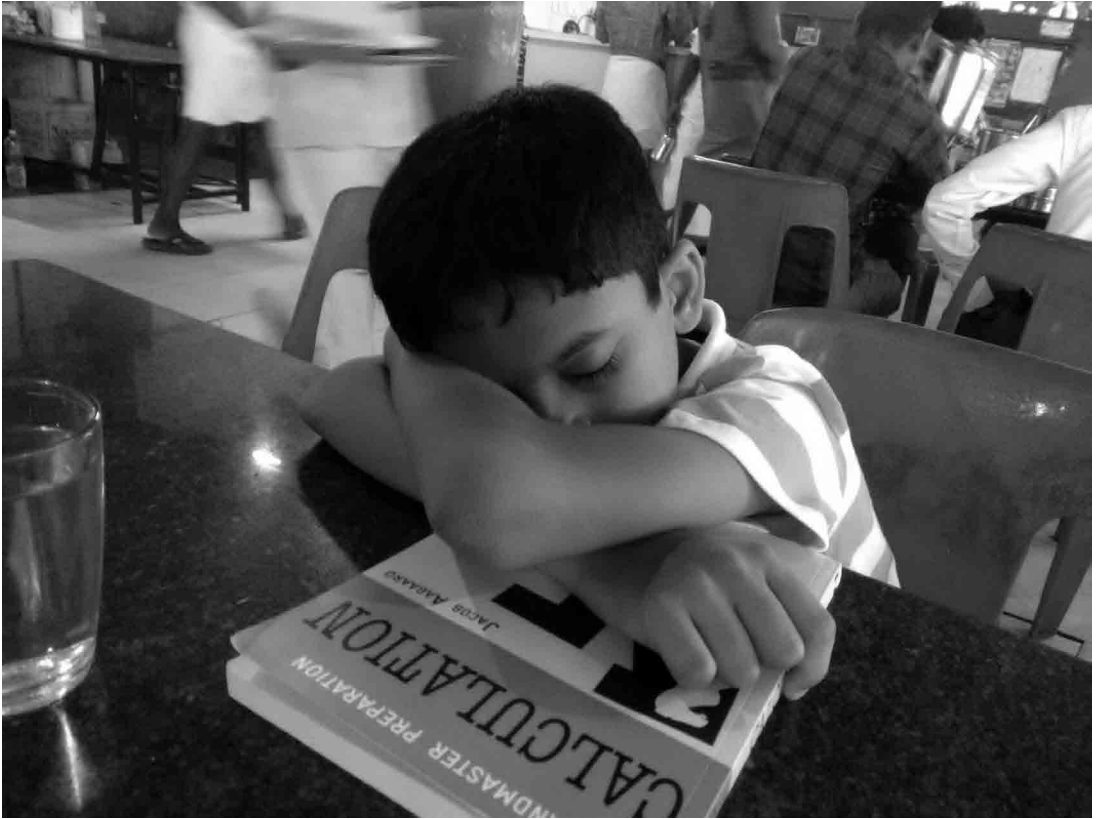
There are mentors in other areas of life who have inspired me to be better and to do better. Louise Berry, Fiona Kennedy, Lisa Murphy and Danny Curtis are the first few names that come to mind. I will squeeze in Gary Smith for good measure...

Then there are the friends whose conversations are a constant inspiration for me to aspire to higher standards. Søren Dalsberg, Lars Møller Larsen, Allan Schjeflo, Lars Schandorff, Baran Sharif, Peter Heine Nielsen and Tim O'Neil immediately spring to mind, though this list is far from exhaustive.

Peter Long and I have planned for years a book tour accompanying the release of this book. Sagar Shah joined in with the organization once it was crunch time, with the never-wavering support of his beautiful wife Amruta Mokal. Together we have formed a winning team that hopefully will last for decades.

Finally, I want to give a big thanks to everyone who has been supportive about this series and my work in general. I write my books to inspire and help people. To me there is no greater joy than to know that this has been successful. Many people have sent me kind messages over the years. I am especially grateful to Karsten Müller and David Navara for their many suggestions on improvements to previous books.

Thank you to all of you,  
Jacob



Nihal Sarin, pictured, has fallen asleep with *Grandmaster Preparation – Calculation* in his hand. Quite recently Nihal achieved the title of International Master at the age of 12 years and eight months, and only days before we went to print, he added his first grandmaster norm to his list of achievements.

Although this sort of success is not available to many, I hope that the reader will find success, on his own terms.

# Introduction

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The chapters in this book are to some extent separate articles on themes I find very important for improvement in chess. But they are connected, as my thinking about these topics has become clear and integrated after thinking about it for years and discussing it with hundreds and hundreds of people. As I am finishing this book I am on a tour of eight Asian countries for training camps and open lectures, presenting the ideas in the book, constantly refining them. I doubt the ideas will ever be stagnant and I will continue to change my explanations of the basic ideas presented in what follows in new ways, hopefully with ever-increasing accuracy. But publication is also an aim, so I have decided to end the thinking and move forward to the typesetting.

This is a quick rundown of what follows.

## 1. Simple but Difficult

My favourite exercise as well as a clear explanation of the idea *simple but not easy*.

## 2. The Psychology of Chess Improvement

The natural inclination is to put the chapter on psychology at the end as an add-on, especially as I am not a psychologist by training. But I have found that what I have to say on the subject makes people think about how they approach this topic in their own lives and that surely must be a good thing.

## 3. Who Are You?

I am an activist. Dvoretsky's model of four different types of players is explained, with your author being an example of an intuitive dynamic player.

## 4. Decision Making

This is what everything is about! What should I play on the next move? And how to work it out? This chapter deals with the change that made a deep impact on my game and took me from International Master to Grandmaster.

## 5. Four Types of Decisions

This is the underpinning of the many techniques of training I use, which comes together to become something like a method when seen through this prism.

## 6. Simple Decisions

Skipping automatic decisions and going straight to a discussion of simplicity. The chapter will very briefly touch on one of my main training methods, the *three questions*, which I already wrote a full book on, *Grandmaster Preparation – Positional Play*.

## 7. What is Calculation?

Everyone has their own definition. This is mine, based on psychology and my own observations.

## 8. The Calculation Process

In this chapter I discuss general techniques that I focus on when teaching calculation. I previously debated the sophisticated techniques and approach by Mark Dvoretsky in *Grandmaster Preparation – Calculation*, but in this chapter I will go into really basic aspects of calculation, as I see it.

## 9. Abstract Thinking

Moving into the territory of strategic decisions, I debate a couple of games where the thinking was long-term and add a few thoughts on the subject.

## 10. Strategic Concepts

In *Excelling at Chess* I had a chapter called *No Rules?* which was polemical and controversial. This chapter could be called *No Rules!* but with age I have turned the irony down slightly. Rules make sense, but the word does not. In this chapter I will debate why and why not.

## 11. Dynamic Strategic Concepts

I have presented these ideas before in *Attacking Manual 1* and *Grandmaster Preparation – Attack & Defence*, but this time I show how I managed to squeeze them all into one game and play my personal Mona Lisa.

## 12. Openings

I am not an expert on this topic, but I have played the opening in all of my games, so I do have some experience and have made some observations over the years.

## 13. Analyse Your Own Games

This could have been an early chapter, as I think this is imperative for anyone who wants to improve in chess. But I wanted to explain my model of chess thinking and chess improvement thinking before suggesting that you use it as a way to analyse your games.

## 14. Training Methods

There are so many ways to do this. In this chapter I discuss my favourites, which I hope others will find useful. Not to pretend that they are superior to others, but because they are the ones I understand well.

### Appendix 1 – Nutrition

Everyone has their own view. It is not crucial for chess improvement, but I still wanted to briefly mention what my studies and experience have led me to believe.

### Appendix 2 – Advanced Engine Management

I am not an expert on computers. I use them. So do you. But Nikos is an expert and he kindly agreed to write his thoughts on this subject.

### Appendix 3 – Cheat Sheet

Once you have read the book, you may want a summary of the key ideas. Happy to help.



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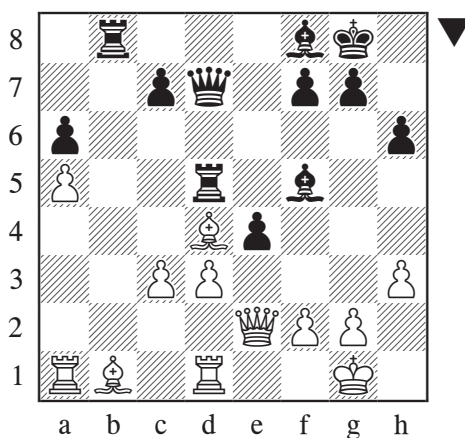
# Chapter 7

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## What is Calculation?

Peter Svidler – Magnus Carlsen

London 2013



*Black to play*

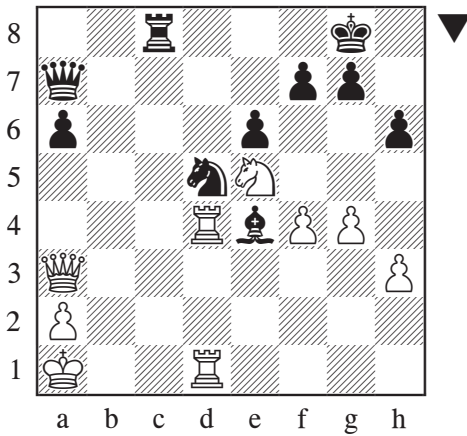
Not realizing there was a combination, Carlsen was very confused when asked about it at the press conference after the game. Once he realized it was there, he calculated it till the end in seconds. Even if you need a bit longer, it is worth your while to make sure you see everything.



To get the most out of the chapter, I would recommend that you try to find the best move/sequence in these four positions.

**Michael Adams – Yuri Razuvaev**

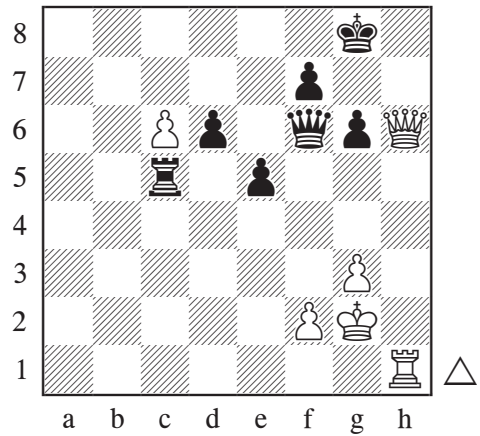
Slough 1997 (European Club Cup)



*Black to play*

**Ivo Timmermans – Toon van Laanen**

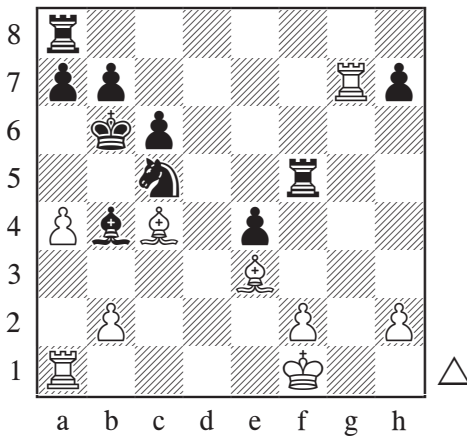
Netherlands 2012



*White to play*

**Pavel Eljanov – Anish Giri**

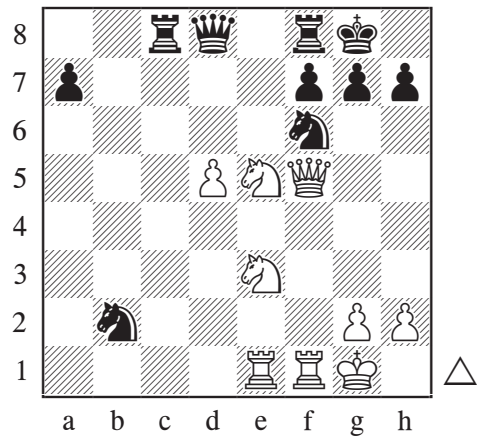
Ohrid 2009



*White to play*

**Kacper Piorun – Michal Krasenkow**

Stockholm 2013



*White to play – this one is difficult and requires time investment*

## System 1 and System 2 – and Candidates

Daniel Kahneman is a professor of psychology at Princeton and the 2002 Nobel Laureate in Economics for his work on decision making. To chess players all over the world he is mainly known for his 2011 book *Thinking, Fast and Slow* that summarizes his discoveries over the decades. This 499-page psychology book is an unlikely bestseller, but it has brilliantly explained some things that a lot of strong chess players have known, consciously or subconsciously, for a long time. It is the chess book of the decade – without being a chess book at all...

Based on one of the key ideas in this book, the one providing its title, I will discuss pattern recognition and calculation and explain what I think the difference is. I have had my opinion on this for a long time, but it is pleasant to now be able to lean on “*certainly the most important psychologist alive today*” (per Steven Pinker, a great student of the brain).

In *Thinking, Fast and Slow*, Kahneman explains how the brain has two different ways to think. We have our own words for these, but psychologists obviously go with the most innocuous terminology, **System 1** and **System 2**.

**System 1** is *fast, automatic, frequent, emotional, stereotypic* and *subconscious*. It handles all the things that we already know how to do. It assists me in touch-typing this article; in stringing sentences together, while watching *Person of Interest – Season 2* on my iPad.

In chess, we call this *intuition*, something that is based largely on *pattern recognition*, visual and abstract.

**System 2** is *slow, effortful, infrequent, logical, calculating*, and *conscious*. When we try to solve unusual and complex problems, we use the brain in this way. The brain is very reluctant to turn to this way of thinking, as it requires us to stop everything else we are currently working on.

In chess, this is basically everything else. The two main ways to divide up what we can do with this would be *strategy* and *calculation*.

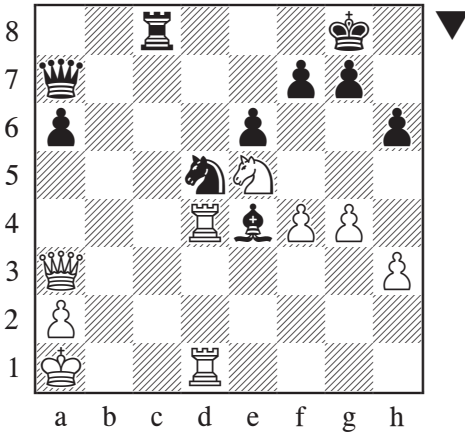
**Strategy** is not positional play. Positional play is short term, mainly intuitive and void of surprises. Strategy sees into future developments and plans for them; it can be by choosing the right one of two natural-looking moves, though also by choosing a counter-intuitive, anti-positional move. More on this on page 122.

**Calculation** is the most confusing chess term of all. Most will agree that it relates to working out sequences of moves, known as variations. This can consist of tactics, though not exclusively so. What is confusing is that *seeing variations* is not calculation. **Calculation is finding variations you do not see intuitively**. As elsewhere in this book, my definition is designed to result in practical advice.

I fear I might have lost some of you by now. Hopefully, a move from the abstract to the concrete will help clarify my point.

### Michael Adams – Yuri Razuvaev

Slough 1997



Black has a pawn for the exchange, as well as a strong knight on d5 and a much safer king. Razuvaev played a very natural-looking move, but was subsequently unable to squeeze more out of the position than a draw.

39...♖c3? 40.♙a4 ♚c5 41.♖c4 ♚e3 42.♙e8†  
 ♔h7 43.♜d7 ♖xc4 44.♜f8†  
 ½–½

This exercise is in principle simple, yet few of the grandmasters I have shown it to solved it. I can only remember one; and he saw it immediately, which violates the point of the exercise, which is to train two things:

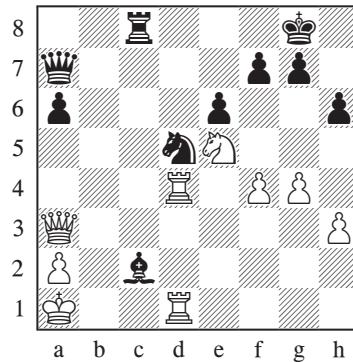
- 1) To understand that the decision requires calculation and not positional judgement or long-term strategic thinking.
- 2) To use the technique of *candidate moves* to find the winning move.

My favourite description of the technique of candidate moves became the chapter title of Chapter 1 in my own book *Excelling at Chess Calculation* (Everyman Chess 2004): **Before you can think, you need to learn how to see.**

I will get colourful in a moment, but for now let us stick to the technique of candidate moves being **the act of actively looking for moves or ideas you do not see automatically.** In 2004, I recommended that the way to do this was to **slow down the variations running through your head**, in order to be in control of the process. I did not know then that I was recommending **activating System 2** in order to find options additional to those provided by System 1 thinking, our intuition.

Imagine that a lot of variations dance on the board in front of you. Some jump into your head; they appear, seemingly out of nowhere (confirming your genius). Others do not. Learning to catch those evasive scoundrels is what calculation is all about.

The solution to this exercise is based on the overloading of the rook on d1. Black has a winning position after 39...♙c2!!.



White has no defence. 40.♙1d2 ♖b8! or 40.♙c1 f6 41.♜f3 ♖c3. In both cases Black wins.

One reason this position is so difficult, despite the moves in the variation running in single digits, is that the targets are obscure. Who would be looking for a quick mate in the starting position?