

**Karsten Müller**

# ***Magnus Carlsen***

## ***The Chess DNA***

### ***of a Genius***



JBV Chess Books

Karsten Müller

# **Magnus Carlsen**

**The Chess DNA of a Genius**

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*Magnus Carlsen, World Champion 2013–2023*

## Preface

Given that there is already so much literature about the 16<sup>th</sup> World Champion, the question arises as to why I have added yet another book. The reason is that I was inspired by the idea of looking at Magnus Carlsen's strategic play from the perspective of the '4 types of players' model, emphasizing not only his outstanding strengths but also his universality.

Since Magnus Carlsen's games are always extremely instructive and since I have also worked out numerous useful rules of thumb on all subjects, the reader is free to use the book simply as a strategy textbook. However, what really counts in chess is not so much knowing a multitude of rules by heart, but rather sharpening your intuition and developing a sense of when a rule can simply be applied – and when you're dealing with the occasional exception. And since Magnus Carlsen's abilities can rightly be called ingenious in this respect, the reader has the opportunity to learn a lot from the world champion himself.

I would like to thank Harald Fietz for all kinds of analyses, texts and ideas, Frederic Friedel and Rainer Woisin from ChessBase for the idea of working with the QR Codes, and Robert Ullrich and Thomas Beyer for the very good layout and the usual first-class presentation.

GM Dr. Karsten Müller  
Hamburg, August 2023

## The model of the ‘4 types of players’

Our representation of the ‘player types’ is based in principle on the classification that Lars Bo Hansen makes in his excellent book *Foundations of Chess Strategy* (GAMBIT 2005), in which the author takes – to put it simply – a model from economic theory (which deals with questions of human typology under the umbrella term ‘human resources’) and transfers it to chess players, or in other words, limits it to this special group of people.

Of course, this model is not the only possible one and of course, the so-called ‘stereotyped thinking’ generally brings with it all sorts of dangers. However, since I have presented this model at many seminars and training events and was amazed how well it fit, the idea for this book came up at some point.

The goal, of course, should be to become as universal as possible. You usually win with your strengths, but it makes sense to also work on the weaknesses and include the specific strengths and weaknesses of the respective opponent in the decision-making process. In positions where there is only one move, every good player should find it of course. So the different styles of play are especially important in positions where there is a wide range of possibilities. However, also in the kind of positions that you should strive for based on your own style and that of the opponent. Furthermore, you can of course ‘imitate’ a style, and against certain opponents this can even be the right strategy. For example, activists and especially hyperactivists have certain extremely outstanding characteristics, and if an opponent can adapt well to them, it’s very valuable. An example is Kramnik’s victory in the World Championship match in London 2000 against the activist Kasparov. Kramnik managed to always steer the game in the desired direction, so that Kasparov didn’t even get an opportunity to show what he is able to do in positions with attack and initiative.

And even if you are skeptical about the model itself, the examples and exercises should definitely provide good training material on the various topics.

# Activists

Activists among world champions: Alekhine, Tal, Spasski, Kasparov, Anand

Activists among other renowned players: Shirov, Morozevich, Topalov, Pillsbury, Anderssen, Bronstein, Larsen, Taimanov, Aronian, Judit Polgar, Karsten Müller

Hyperactivists: Tal, Neshmetdinov

## Their strengths

Activists rate initiative and attacking options relatively high and material values lower. This is particularly pronounced among hyperactivists who are often ready to make considerable sacrifices in order to get attacking chances. Typical of this is Tal's famous quote, 'There are correct sacrifices – and mine.' They often have a good sense for initiative and dynamics and are also ready to accept static weaknesses. This can of course be disadvantageous, but often provides good entertainment on the board. One of their usual strengths is the concrete calculation of lines based on intuitive evaluation.

## Their weaknesses

Sometimes they make pawn moves that look good at the moment, but do far more harm than good in the long run. They tend to overestimate their own attack on the king while underestimating the opponent's attack. They are significantly less good in defense and often bring intuitive sacrifices that are objectively incorrect.

Sometimes they don't have a good time management and often find themselves in time trouble because they search for too long for something that doesn't exist, especially when their intuitive assessment of the position doesn't correspond to the objective evaluation. Since they are often good at blitz and rapid, they can live with this weakness, but of course it's not really beneficial. As a result, activists often become more pragmatic over time, which can be seen, for example, in the careers of the world champions Tal and Kasparov.

Therefore, Lars Bo Hansen classifies the world champions Alekhine, Spasski and Kasparov as pragmatics, which of course is okay. However, since so many of Kasparov's game examples fit so well in this chapter, it was easy for us to at least classify *him* as an activist. However, the transition of the styles is fluid and even Michail Tal could be placed among the pragmatics from around 1966.

## Their willingness to take risks

They often take risks and as a rule try to keep the 3<sup>rd</sup> result (meaning: their own victory) in the game. Therefore, especially with hyperactivists, long series of games without any draw can occur. Under certain circumstances, however, this can be a

disadvantage. For example, this phenomenon explains the two legendary 6–0 defeats of Taimanov and Larsen against Fischer in 1971. Both of them simply continued to play for win, instead of switching to damage limitation and striving for a consolidating draw.

### **Their training options**

In addition to trusting one's own strengths by working on the openings and solving tactical exercises, the goal of becoming more pragmatic and universal also comes into question. Also, studying the games of reflectors can be advantageous. Kasparov, for example, has benefited enormously from his world championship matches against Karpov. Or you can study games from Tal's later period (i.e. from his 'year of change' 1966) or those from Kasparov's later career. By doing so, you can understand how these players have managed to become universal and pragmatic without completely losing the fire of their youth.

### **Their opponents**

When activists meet over the board, it often leads to spectacular duels that do not always end as the Elo ratings suggest. Strong reflectors are particularly dangerous opponents for activists, as was shown, for example, in the world championship match 'Carlsen – Anand' and in the first world championship match 'Karpov – Kasparov'. The reason is that in such a constellation, the strengths of the activists don't come into their own, because the reflectors know how to prevent it with their good sense of active prophylaxis.

### **Their openings**

Activists often advance the theory of special lines. For example, Kasparov's 'Chess-Base file' with its many spectacular novelties and new assessments was particularly legendary in this regard.

### **Typical openings**

With White, activists prefer 1.e4, sharp lines of the open Sicilian, the King's Gambit and the Evans Gambit.

With Black, they tend to play the Najdorf Variation and the King's Indian.



# Theorists

Theorists among world champions: Steinitz, Botvinnik, Kramnik

Theorists among other renowned players: Siegbert Tarrasch, Aron Nimzowitsch ('My System'), Peter Leko, Anish Giri, Georg Meier, Ulf Andersson, Nikola Sedlak, Sergey Tiviakov, Ruslan Ponomarev, Hans Berliner, Matthias Wahls, Victor Moskalenko, Mark Dvoretsky, Josif Dorfman ('The Chess Method'), Alexander Bangiev ('Strategy of squares'), Lars Bo Hansen

## Their characteristics

On the one hand, you can see chess as a concrete game and always focus on calculating lines. But on the other hand, you can develop a general theory. Such a theory can be *very* general, such as the one that states you should always maximize the number of your own move options – or it can be tailored more specifically to specific structures. By the way, one of the secrets of why chess is so fascinating could be that all general theories have one thing in common: they are ultimately not entirely convincing.

In fact, otherwise things would be too simple and chess would only be a part of mathematics. Only in certain theoretical endgames are there rules of thumb that are equivalent to mathematical laws. In all other areas there are exceptions – and sometimes even far more exceptions than rule-abiding cases! Accordingly, the real art is not learning the rules of thumb by heart, but rather training your intuition in view of exceptions.

We want to continue with special theories on such structures and other positional issues and we do understand the type of player 'theorist' in exactly this sense. As a rule, these structures or positional issues are determined in the opening and also determine at least the early middle game. Sometimes, however, their effect can even extend into the endgame – such as e.g. in the French Defense, in the Benko Gambit or in certain Sicilian lines.

## Their strengths

Theorists are extremely familiar with their structures and all the associated maneuvers and plans and can also rely on their sharpened intuition when using them. Theorists are incredibly strong in their pet structures and their opening systems are very stable and can be used in the long run. Their logical and systematic play is clearly pointed out, for example, in Botvinnik's comments on his games. Many representatives of this type are good at theoretical endgames and know the entire relevant endgame theory by heart.

## **Their weaknesses**

They stick to their principles, even if they sometimes don't fit the position, and then often get into time trouble. They are somewhat inflexible and even stay true to their openings if they don't achieve any good results. And, of course, their respective specific theories may also have weak points of their own. What we have in mind are strong theorists who have very plausible theories, at least in their area of validity and application. However, some theorists sometimes lack a sense of the limits of the respective area of application and also the flexibility required to switch to other approaches in a specific position if necessary.

### **How do theorists play against the other types of players?**

Of course, they always try to get into 'their' positions using 'their' openings. However, if necessary, they are also able to adapt and tailor strategies to the opponent if they can make a suitably fitting image. And this is how theories come into play – such as for example the one that against attacking players the dynamic potential should be reduced as much as possible, which Kramnik was able to implement in such an exemplary way in the world championship match against Kasparov.

### **How to play *against* theorists?**

One should try to take advantage of their sometimes lack of flexibility and get them out of 'their' position. Occasionally it can happen that they recently scored 0 out of 5 with this or that opening – and that they will still keep playing it. Such a thing would be highly unlikely for all other types of players, but against some theorists it can be worthwhile to prepare for the opening in question anyway – or even precisely *because* of this 'pre existing condition'. For activists, it can be recommended to study the first match 'Tal vs Botvinnik'. Meanwhile, the world championship fight 'Anand vs Kramnik' showed the value of novelties that led to highly tactical positions in which the theorist Kramnik no longer felt at home because his knowledge of the structures was suddenly worthless.

### **Typical opening systems that lead to clearly defined structures**

#### **– and some of their most renowned advocates**

Berlin Wall in the Ruy Lopez (Kramnik)

French (Botvinnik, Moskalenko)

Rubinstein Variation in the French (Georg Meier)

Queen's Gambit with Botvinnik's infamous pawn roller

'Fort Knox' in the French (1.e4 e6 2.d4 d5 3.♘c3 dxe4 4.♘xe4 ♙d7 followed by ♙c6, ♙xe4, c6 etc.)

London System (Sedlak)

Stonewall in the Dutch (Moskalenko)

Accelerated Dragon in the Sicilian (1.e4 c5 2.♘f3 ♘c6 3.d4 cxd4 4.♘xd4 g6)

Maroczy bind with both colors (Tiviakov)

Sveshnikov Variation in the Sicilian (Peter Leko)

# Reflectors

Reflectors among world champions: Capablanca, Smyslov, Petrosian, Karpov, Carlsen

Reflectors among other renowned players: Michael Adams, Akiba Rubinstein, Vincent Keymer, Klaus Bischoff, 'AlphaZero', 'Leela Zero'

## Their characteristics

Reflectors have a very deep understanding of the game and recognize relevant patterns that remain hidden from everyone else. They have a very fine feel for the harmony and coordination of the pieces. They can communicate with the pieces, so to speak, and can perfectly 'understand' their messages. In addition, they are very good when it comes to restricting the opposing pieces more and more and disrupting their coordination. Therefore, active prophylaxis and strategies of dominance and restriction are typical for them. They are very good in matters of exchange and accumulating small advantages. And they are also very good in strategic endgames, in which their strengths come into their own, because the dynamic potential of the queens no longer 'disturbs' and accordingly less dynamic chaos can arise.

They have a seventh sense for long-term positional sacrifices, especially for exchange sacrifices. They don't calculate many lines, their decisions are based more on general considerations, on their sense of harmony and coordination and on their skilled active prophylaxis.

The reign of strong reflectors on the world championship throne is sometimes very dominant and long-lasting – like e.g. in the case of Karpov and Carlsen. For the other types of players it's not easy to catch up with such a strong reflector, because it's simply impossible to learn or train their special abilities. Of course, everybody can practice tactics and calculation very well, but when it comes to such a feeling for harmony and coordination like that of Karpov or Carlsen, you just have it – or you don't.

## Their weaknesses

They are not so good at the calculation of lines and should therefore arrange their training accordingly. Openings can also be one of their weak points. At least they don't advance the opening theory (particularly of sharp lines) like e.g. activists do. For a reflector, it's often enough to get a playable position. Accordingly, the opponent should strive for concrete dynamic positions in which every single move is important and which require much concrete calculation. It should be noted that Magnus Carlsen is quite a strong 'mental calculator' and therefore could also be considered an activist in his youth.

## Typical openings

In principle, reflectors may already be happy if they just obtain a playable position, as they don't attach great importance to an objective advantage or to the fact that a computer attests them a more or less clear plus. A certain flexibility is certainly an advantage, since it enables a reflector to evade the opponent's preparation.

With White: 1.d4 followed by strategic systems – or 1.e4 and then e.g. Ruy Lopez with c3 and d3 or the slow Italian with c3 and d3

With Black: Caro-Kann, Tartakower Variation in the Queen's Gambit

# Pragmatics

Pragmatics among world champions: Fischer, Euwe, Lasker

Pragmatics among other renowned players: Korchnoi, Caruana, Ding Liren, Karjakin, Vachier-Lagrave, Luis Engel, 'Alpha-Beta Engines'

## Their strengths

Pragmatics are characterized by the fact that they have a very concrete approach. They calculate long lines very accurately and rarely blunder. They particularly benefit from sharp, tactical positions in which there's a lot to calculate and one can't just rely on intuition or feelings. The concrete calculation of lines is the basis for decision-making and usually takes precedence over the intuition. The best examples are the engines that are based on the alpha-beta algorithm and can compute millions of lines in a very short time.

Pragmatics incorporate many practically relevant factors into their decision-making and are often good at confronting opponents with problems that are unpleasant to solve in practice. Since they have a good time management, they rarely get into time trouble. Based on their calculation skills, they are willing to pick up material and then defend themselves. This approach has two good reasons.

- From a psychological point of view, it's uncomfortable for the opponent to play with a material deficit, since he 'has to prove something' to avoid a disadvantage in the long run.
- Pragmatics can often defend themselves very tenaciously by using their precise calculation skills. The best example is Sergey Karjakin, who (at least according to his respectful nickname) has the status of the 'Russian Minister of Defense'.

## Their weaknesses

The concrete approach can, however, be seen as weakness as well as strength. In strictly technical or positional situations, many pragmatics occasionally feel a little bit insecure because they don't know what to calculate. In general, they have difficulty recognizing long-term plans and incorporating them into their considerations – be it a deep positional plan or an imminent attack on the king still 'too far' behind the horizon.

Some pragmatics will also find intuitive sacrifices difficult if the consequences cannot be clearly calculated. Sometimes they are a little too materialistic (similar to theorists). Overall, however, they are relatively balanced and have no blatant weakness. Not without reason, many of the current top players are pragmatics or have gradually developed into such.

## **Training options for pragmatics**

In technical positions, pragmatics can learn a lot from the reflectors (Magnus Carlsen as the best example) or from the theorists - namely, relying more on their intuition instead of calculating concrete lines. For some, it might be helpful to study attacking games of activists to get a feel for the gradual development of an attack on the king. Of course, it's also advisable to constantly work on the opening repertoire in order to obtain the desired type of position.

## **Their opponents**

Pragmatics have the most problems in quiet, technical positions against strong reflectors or theorists, if the opponent manages to get his pet position or structure on the board. Against such opponents, the goal of a pragmatic must be to avoid precisely this kind of position by playing as sharp and complicated as possible. Games against activists tend to be very wild and dynamic. However, pragmatics must pay particular attention to possible attack plans in order to recognize and prevent them in the style of a reflector.

## **Their openings**

Pragmatics usually play sharp, principled lines and are very familiar with their repertoire. They strive for direct play already in the opening and usually avoid strategic openings such as e.g. English or Catalan. In their games they often advance the opening theory.

## **Typical openings**

With White: 1.e4 (Best by test – according to Bobby Fischer), Ruy Lopez, open lines against the Sicilian

With Black: Sicilian (especially the Najdorf Variation), Grünfeld

# Chapter I

## Playing against weaknesses

The term *weakness* is used to describe squares or pawns that can no longer be protected by pawns. Consistent and precise play against weaknesses is one of the hallmarks of Carlsen's chess DNA. He often senses very early on when squares or pawns in the opposing camp tend to be weak and then consistently makes them a target, sometimes even right into the endgame.

Of course, to some extent this skill is part of every strategic player's chess DNA, but the keen sense for the tiniest nuances that the reflector Magnus Carlsen possesses is very difficult to achieve.

### **The following rules of thumb apply:**

- Even a single weakness can tend to infect the entire environment and thus an entire complex of squares.
- The attacker should aim to exchange the defenders of a complex of weak squares.
- If your own position has a static weakness, you should generally not defend yourself passively.
- If the defender does not dynamize his play and cannot create any counterplay, the attacker should systematically and calmly build up pressure against the weakness and, in the long run, use the 'principle of two weaknesses'.

The *principle of two weaknesses* states: Since playing against a single weakness is often not enough to win, the attacker should strive to create a second weakness as far away as possible from the existing one. If this succeeds, it's very likely that sooner or later the defender will be overwhelmed with the task of adequately protecting both weaknesses.



A few instructive examples follow for illustration.

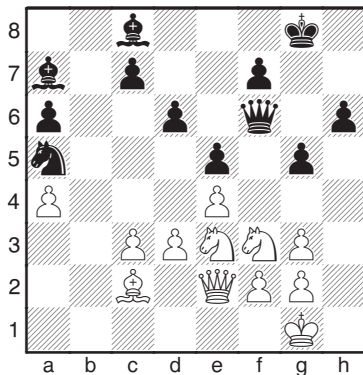
### 1) Using the weak square on f4 (or f5) as a knight outpost

There is a great deal of illustrative material on this classic topic. The second world champion, Emanuel Lasker, was of the opinion that a strong white knight on f5 (or a black one on f4) could even compensate a minus pawn.

In the following example, Magnus demonstrates in a very instructive way how to outmaneuver an opponent whose position has such weaknesses – as in the given case the light squares and especially the f5-square.



**Carlsen, Magnus (2861)**  
**Sokolov, Ivan (2663)**  
 Wijk aan Zee 2013



At first glance, not much seems to be going on. But Magnus has recognized

that this is the moment to put his finger on the light-squared wounds in the opposing camp.

### 26.d4

”That’s the point. I have time to develop initiative before Black can get his knight and bishops back into play.“

(Magnus Carlsen in *ChessBase Magazine* 154)

### 26...g4?!

This thoughtless move opens up a promising route for the white knight.

1) According to Magnus, 26...c6 was appropriate to keep the white knight away from the central square on d5. However, White is still better and has a variety of options such as 27.♖d3 or even 27.♞f5 directly.

2) By the way, 26...exd4? 27.cxd4 ♞xd4? fails to 28.♞d5 ♖g7 29.♞e7+ +–.

### 27.♞d5 ♖d8 28.♞h4 c6

After 28...exd4? 29.♖d2 (29.♞f5!?), Black finds himself on the losing side; e.g. 29...♖g5 30.♖xg5+ hxg5 31.♞e7+ ♕f8 32.♞xc8 gxh4 33.♞xa7 dxc3 34.gxh4 ♞c4 35.♞d1 ♞a3 36.a5 c2 37.♞xc2 ♞xc2 38.♞b5+–.

### 29.♞e3 h5

According to Magnus, this time 29...exd4? fails to 30.♞hf5+–.

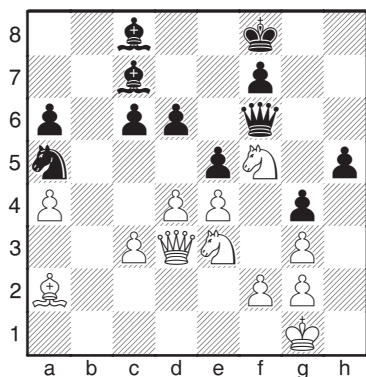
### 30.♞hf5 ♖f6 31.♖d3 ♞b6 32.♞b1

White takes his eyes off the a5-knight for a moment, but the opponent can’t take advantage of it (see next note).

### 32...♕f8

32...♞b3?! can be answered with 33.♖c4, as 33...♞d2? fails to 34.♖xc6+–.

### 33.♞a2 ♞c7



"I've achieved everything I wanted, but an easy breakthrough is still not in sight because attempts to play f3 or f4 on the kingside are not at all convincing. I came to the conclusion that I must attack a6 somehow, possibly after inserting the moves d4–d5 and c6–c5."

(Magnus Carlsen)

**34. ♖b1! ♗e8 35. ♖b4 d5!?**

This advance is probably good because the misplaced knight on the rim gets the opportunity to come back into play via c4. As is usual with static weaknesses, passive waiting promises little success, since in this case White could simply further strengthen his position.

**36. ♗b1 exd4?!**

This opening of the position is rather more in White's favor.

After 36... ♗c4! White is better, but there's no win in sight. Here are two possible lines in which Black can create counterplay:

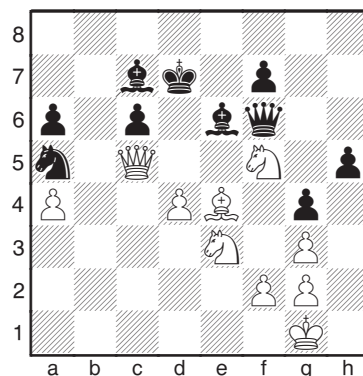
– 37. ♗xc4 dxc4 38. ♖xc4 ♗xf5 39. exf5 exd4 40. cxd4 ♗b6

– 37. exd5 ♗xe3 38. ♗xe3 exd4 39. cxd4 h4 40. ♖c5 hxg3

**37. cxd4 dxe4?!**

Again, 37... ♗c4 38. e5 ♖g5 39. ♗d3 ♗xe3 40. ♗xe3 ♗d7 was the lesser evil.

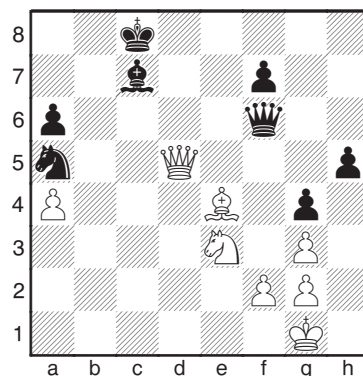
**38. ♗xe4 ♗e6 39. ♖c5 ♗d7**



**40. d5!**

After Magnus opens the position at the right moment, the black king can no longer find a safe place. In this way, one advantage is converted into another – namely playing against weaknesses in a direct attack on the king.

**40... cxd5 41. ♗xd5 ♗xd5 42. ♖xd5+ ♗c8 43. ♗e3**



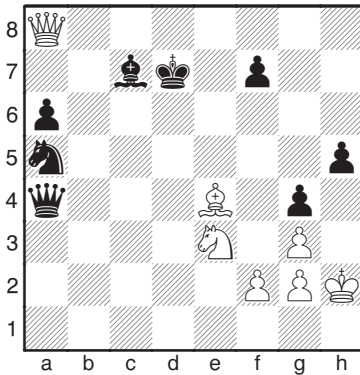
"Although the material is still balanced, the difference in the areas of activity and king safety is just too huge."

(Magnus Carlsen)

43...♖a1+ 44.♔h2 ♜xa4

44...h4 45.♖a8+ ♔d7 46.♜f5+ ♕e7  
47.♜d5+ ♕d6 48.♜xc7 hxg3+ 49.fxg3  
♕xc7 50.♖c8+ ♕b6 51.♖d8+ ♕a7  
52.♖xa5 ♖h8+ 53.♔g1 ♖d4+ 54.♔f1+-  
(Magnus Carlsen)

45.♖a8+ ♔d7



46.♜d5?

"Out of sheer laziness, I played this move fairly quickly, assuming that the answer ♜d8 was actually the only move."

(Carlsen)

♠46.♜f5+ ♕e7 47.♖a7 ♖c6 48.♖d4+-  
"Centralisation! And the threat ♜d5 is fatal." (Magnus Carlsen)

46...♜d8?

– After 46...♖c6! White's win is likely but not certain; e.g. 47.♖h8 ♖e6 (Magnus Carlsen) 48.♜f6+ ♕d6 49.♜d5 ♖e7 50.♖h6 ♕c5 and Black can still put up some resistance.

– 46...♖d4?! is better than what followed in the game, but should also lose in the long run; e.g. 47.♖f8 ♖e5 48.♖xf7+ ♕c6 49.♜f6+ ♕b5 50.♜d3+ ♕c6 51.♜xh5 (Magnus Carlsen) 51...♕b7 52.♜f6 ♜c6 53.♜xg4+-.

47.♜f5+ ♕e8 48.♖c8 and 1-0, as the threat ♜d7+ cannot be parried.

## 2) Pressure play on a complex of weak squares

Even a single weak square often tends to infect neighboring squares of the same color.



Karjakin, Sergey (2753)

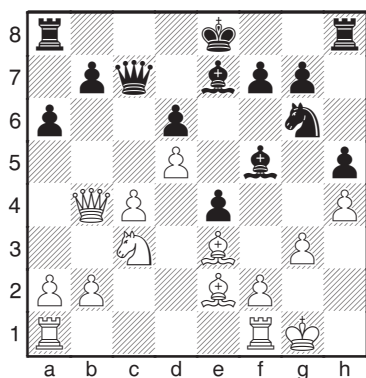
Carlsen, Magnus (2845)

Shamkir 2019 [B33]

1.e4 c5 2.♜f3 ♜c6 3.d4 cxd4 4.♜xd4  
♜f6 5.♜c3 e5 6.♜db5 d6 7.♜d5 ♜xd5  
8.exd5 ♜e7 9.c4 ♜g6 10.♖a4 ♜d7  
11.♖b4 ♜f5 12.♖a4 ♜d7 13.♖b4 ♜f5  
14.h4 h5 15.♜g5 ♖b8 16.♜e2 a6  
17.♜c3 ♖c7 18.g3

Given the positive aspect that this move restricts the g6-knight, it's okay. However, the weakened light squares on the white kingside need protection from now on and such a commitment against an opponent like Magnus Carlsen is not to be underestimated.

18...♜e7 19.♜e3 e4 20.0-0



### 20...0-0!?

A typical feature of Magnus Carlsen's approach to positional pressure play: In view of the opponent's weak squares on the kingside, the risk that comes with a pawn sacrifice for active piece play is practically justifiable from the outset.

**21. ♖xh5 ♜e5 22. ♜e2 ♚d7 23. ♚a4 ♚c8**

Since Black's compensation is based on dynamic factors, the queen must of course not be exchanged.

### 24.c5?!

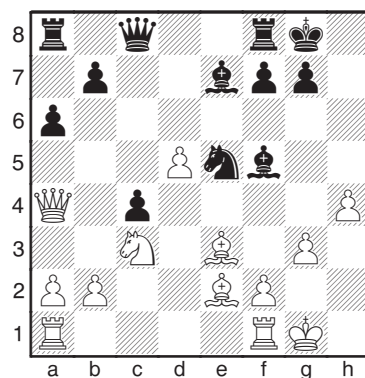
The dynamization that comes with this violent approach plays into Black's cards because he obtains new opportunities on the queenside.

With 24. ♚d1 White could turn the tables and equalize.

**1)** After 24... ♜h3? 25. ♜xe4 ♜xf1 26. ♚xf1 White has more than enough compensation for the exchange. In this context, the fact that Black still has his light-squared bishop is indispensable, because it can put pressure on White's weak squares.

**2)** ♘24... ♜xc4 25. ♜d4 ♜xb2 26. ♚d2 ♜c4 27. ♚f4 ♜e5 28. ♜xe4=

**24...dxc5 25. ♜xe4 c4 26. ♜c3**



### 26...b5

After the game, Magnus said his opponent was surprised by this move. This is surprising, since there is no need for Black to swap pieces and strive for perpetual check. So the approach 26... ♜d3 27. ♜xd3?! (27. ♚d1!?) 27... ♜f3+?! (27... ♜xd3!?) 28. ♚g2 ♜xh4+ 29. gxh4 ♚g4+ would only be something for timid characters.

After thoroughly studying Magnus Carlsen's playing style, one understands that a very important component is the appropriate treatment of the most diverse pawn structures. So the text move shuts down the queenside for the moment, but Black retains the option of creating a passed pawn.

**27. ♚d1 b4 28. ♜a4**

White's knight may have had in mind to continue its journey, but for the time being Black shifts the active action to the opposite wing. Accordingly, this approach offers a typical example of how the 'principle of two weaknesses' is applied (see page 19).

**28... ♜e4 29. ♚d4 ♚f5 30. f4?**

After this move, Magnus considered White's position lost. The solution he

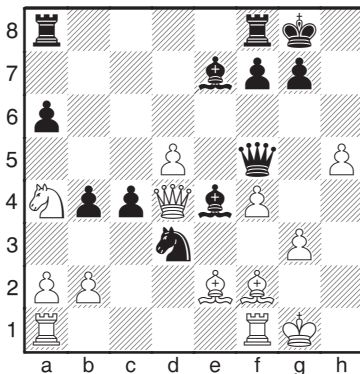


Sergey Karjakin

proposed after the game 30.f3 ♖xf3 31.♞ae1 ♜h5 is difficult to assess.

However, 30...♗xf3+ 31.♗xf3 ♗xf3 32.d6 ♗f6 33.♜xc4 ♞ad8 seems more interesting for Black since his pieces can create more threats.

30...♜g6 31.♗f2 ♗d3 32.h5 ♜f5



33.♗g4

On the one hand, the exchange of bishops relieves the defender, but here the attacker's interest in eliminating this

important defender of the weak squares prevails. However, good advice is expensive, because after, for example, 33.♗xd3 cxd3 34.♜e5 ♜xe5 35.fxe5 ♗xd5 36.♗b6 ♞ad8 37.♗xd5 ♞xd5 the d-pawn secures good winning chances.

33...♜xg4 34.♜xe4 ♗d6 35.♜g2 ♞ae8 36.♗d4 ♜xh5 37.♜f3 ♜g6 38.♔h1 ♞e4 39.♗f2 ♞fe8 0-1

### 3) Doubled pawns as a weakness

Doubled pawns can have both positive and negative aspects. They often offer static advantages, for example when they cover important central squares, but in a dynamic sense they are inherently difficult to move or even completely immobile.



Carlsen, Magnus (2853)  
Karjakin, Sergey (2772)  
New York 2016 [C65]

1.e4 e5 2.♗f3 ♗c6 3.♗b5 ♗f6 4.d3 ♗c5 5.c3 0-0 6.♗g5 h6 7.♗h4 ♗e7 8.0-0 d6 9.♗bd2 ♗h5 10.♗xe7 ♜xe7 11.♗c4 ♗f4 12.♗e3 ♜f6 13.g3 ♗h3+ 14.♔h1 ♗e7 15.♗c4 c6 16.♗b3 ♗g6 17.♜e2 a5 18.a4 ♗e6 19.♗xe6 fxe6 20.♗d2 d5?!

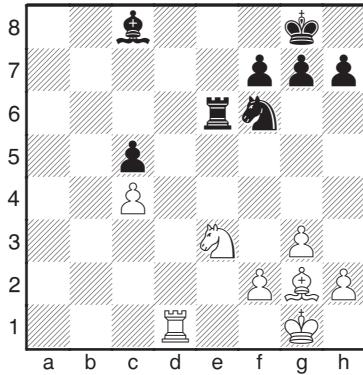
This advance weakens the dark squares, and weak squares often cause problems in positions with doubled pawns.

Better 20...♗xf2+! 21.♔g2 ♗h4+!

# Exercises

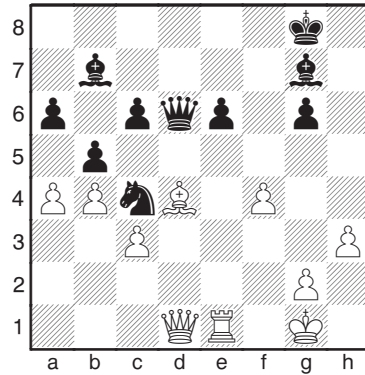
(Solutions starting on page 42)

## Exercise 1



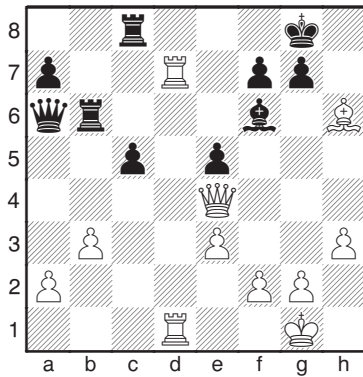
White to move and win

## Exercise 3



White to move and win

## Exercise 2



Why does 25...gxh6 lose?

What should Black play?

## Solutions



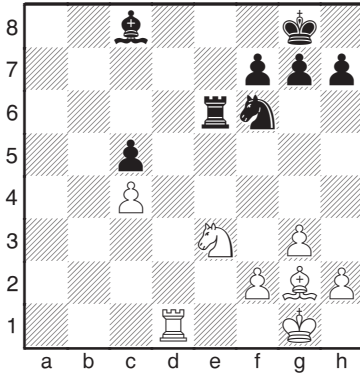
### Solution 1

Graf, Alexander (2646)  
Carlsen, Magnus (2581)  
Spain 2004

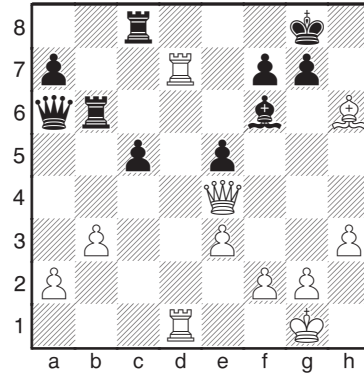


### Solution 2

Carlsen, Magnus (2842)  
Nakamura, Hikaru (2777)  
Saint Louis 2018



With **29. ♖c6!** White made short work of it and Black immediately resigned, because the rook will penetrate decisively on his back rank. As pointed out above, dominating an open file is often a milestone on the road to victory.



### 25... ♖e8!?

– 25... g×h6? fails to 26. ♖xf7 ♔xf7 27. ♕h7+ ♔f8 28. ♖d7+–.

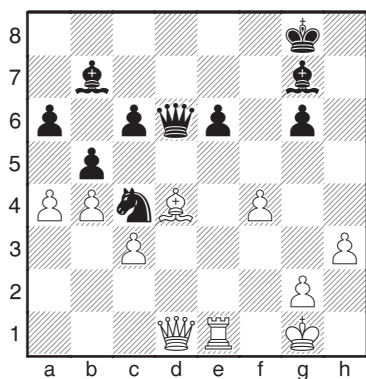
– But 25... ♕xa2= was also playable.

### 26. ♖g4 ♕xa2 27. e4 ♕xb3 28. ♗e3 ♖b7

The position is more or less equal now, but Magnus later won anyway.



**Solution 3**  
**Carlsen, Magnus (2714)**  
**Pruijssers, Roeland (2408)**  
Kemer 2007



*Alexander Graf*

**33. ♖xg7**

33. axb5? ♜xd4+ 34. ♚xd4 ♜xd4+  
35. cxd4 cxb5 36. ♜xe6 ♜f7=

**33... ♜xg7 34. ♚xd6 ♜xd6 35. ♜d1!**

It cannot be repeated often enough:  
dominating an open file is often a mile-  
stone on the road to victory.

**35... ♜c4**

35... ♜f7 36. ♜d7 ♜c8 37. ♜c7 bxa4  
38. ♜xc8 a3 39. ♜xc6 a5 40. ♜a6+-

**36. ♜d7+ ♜f6 37. axb5 ♜c8 38. ♜c7 ♜d6**  
**39. bxa6 ♜xa6 40. ♜xc6 1-0**



## Chapter X

### Piece coordination using the example of ♖+♘ vs. ♖

The precise coordination of many pieces is inherently one of the difficult problems of the royal game. A particular challenge seems to be the coordination of bishop and knight, because the interaction of these two sometimes proves to be very problematic. However, since Magnus Carlsen has a very good feeling for the coordination and harmony of his pieces, he is particularly strong in positions with this piece constellation.

In general, it depends on which side a player has to represent. Reflectors are particularly strong with the minor pieces, while 'activists' sometimes prefer the side with the rook if there are active options. In this regard, Mihail Marin's masterpiece *Learn from the Legends* devotes a section to Mikhail Tal entitled '*Tal's super rooks vs minor pieces*'.

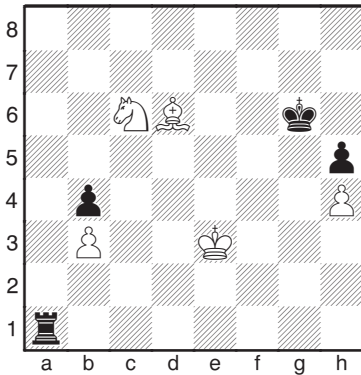
#### **The following rules of thumb apply:**

- Bishop and knight want static – the rook wants dynamic.
- The side with bishop and knight usually wants to avoid exchanges.
- If the two minor pieces are in control, they are stronger than a rook.

However, the technical proof can sometimes be very tedious – as in the following example.



**Carlsen, Magnus (2835)**  
**Aronian, Levon (2805)**  
 Wijk aan Zee 2012



**53.♔d4!**

Activating the king is more important than the b4–pawn, which can't run away anyway.

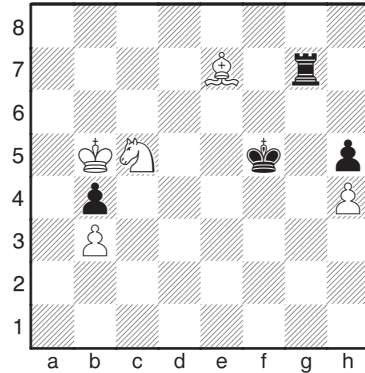
1) After 53.♗xb4? ♖b1 54.♗d3 ♖xb3 Black is so active that White cannot even win the h–pawn.

2) 53.♗xb4? ♖h1 54.♗e7 ♖h3+ 55.♕f4 ♖xb3 56.♗e5+ ♕h6 57.♕f5 wins the h–pawn, but whether that's enough for more than a draw is an open question given the reduced winning potential.

**53...♖g1**

53...♖h1!? is a bit more tenacious, but here too the rook is sooner or later out–

played by the systematic maneuvers of the minor pieces; e.g. 54.♗e7 ♖h3 55.♗e5+ ♕f5 56.♗d3 ♖g3 57.♕c4 ♖g4+ 58.♕b5 ♖g3 59.♗c5 ♖g4 60.♗d8 ♖d4 61.♗g5 ♖g4 62.♗e7 ♖g7

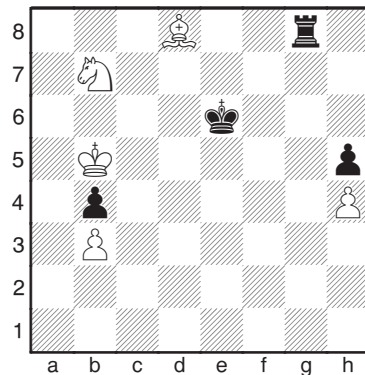


1) 63.♗g5? runs into the hammer blow 63...♖xg5!, after which Black comes just in time; e.g. 64.hxg5 h4 65.♗e4 h3 66.♗f2 h2 67.♕xb4 ♕xg5 68.♕c3 ♕f4 69.♕d2 ♕f3 70.♕e1 ♕e3=.

**2) 63.♗d8**

a) 63...♖g4 64.♗b7 ♕e6 65.♗a5 ♖g8 66.♗c6 ♖g7 67.♗g5 ♖b7+ 68.♕a6 ♖c7 69.♕b6 ♖c8 70.♕b5 ♕d6 71.♗e7 ♖b8+ 72.♕c4 ♕e6 73.♗d5 ♖c8+ 74.♕d4 ♖b8 75.♗f4+ ♕f5 76.♕c4 ♕g4 77.♗d5+–

b) 63...♖g8 64.♗b7 ♕e6



– Now the greedy 65.♔xb4 would spoil everything after all; e.g. 65...♔d7 66.♗b5 ♗c8 67.♗a6 ♖g7 68.♗c5 ♖g6+ 69.♗b6 ♖g4=.

– It's more important to stay in control with 65.♗c5; e.g. 65...♔d7 66.♗g5 ♗e6 67.♗d6 ♗e5 68.♗c4+ ♗e4 69.♗xb4+-.

**54.♗c5!**

Magnus navigates his king masterfully.

54.♗c4?? ♖g4+

**54...♗f5**

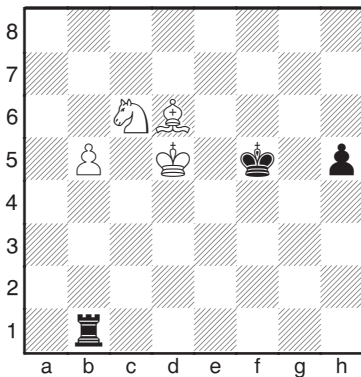
– 54...♖g4? 55.♗e5+ +-

– 54...♖h1 55.♗e7+-

**55.♗xb4 ♖c1+ 56.♗d4 ♖e1 57.♗c6 ♖e4+ 58.♗d5!**

A discreet bodycheck!

**58...♖xh4 59.b4 ♖h1 60.b5 ♖b1**



60...h4 61.b6 ♖b1 62.♗b4 h3 63.♗c5 ♖d1 64.b7 ♖xd6 65.b8♖ h2 66.♖h8+-

**61.♗d4+!**

The knight plays on both wings.

On the other hand, Black could escape after 61.♗b4? ♖d1+, as shown in the following lines:

– 62.♗c5 ♖c1+ 63.♗d4 ♖d1+ 64.♗d3 ♗e6 65.♗g3 ♗d7=

– 62.♗c6 ♗e6 63.♗c5 h4 64.b6 h3 65.b7



Levon Aronian

h2 66.b8♖ h1♖+=

**61...♗g4**

61...♗f6 62.♗c6 ♖c1+ 63.♗c5 h4 64.b6 h3 65.♗f3 ♗f5 66.b7 ♖b1 67.♗b6+-

**62.♗c6 ♖c1+ 63.♗d7 ♖b1 64.♗c7 h4 65.b6 ♗h3**

65...h3 66.b7 ♖c1+ 67.♗d7 ♖b1 68.b8♖ ♖xb8 69.♗xb8+-

**66.b7 ♗g2**

66...♖c1+ doesn't help either, because the minor pieces can always create barriers; e.g. 67.♗c6 ♖b1 68.b8♖ ♖xb8 69.♗xb8 ♗g2 70.♗e5 ♗g3 (70...h3 71.♗g4+-) 71.♗g6+ ♗g4 72.♗c7 h3 73.♗h2 ♗f3 74.♗f4+-.

**67.♗f5 h3 68.♗h4+** and **1-0** given the possible continuation 68...♗g1 69.b8♖ ♖xb8 70.♗xb8 h2 71.♗f3+ ♗g2 72.♗xh2+-.

## About the author

GM Dr. Karsten Müller was born on November 23<sup>rd</sup>, 1970 in Hamburg. He studied mathematics and received his doctorate in 2002. From 1988 to 2015 he played for the 'Hamburg SK' in the German 'Bundesliga' and in 1998 he was awarded the title of Grandmaster.

The busy and globally recognized end-game expert was named 'Trainer of the Year' by the German Chess Federation in 2007



He is the author (or co-author) of the following highly esteemed works:

- Secrets of Pawn Endings (with Frank Lamprecht, Everyman/GAMBIT 2000)
- Fundamental Chess Endings (with Frank Lamprecht, GAMBIT 2001)
- Danish Dynamite (with Martin Voigt, Russell 2003)
- Chess Cafe Puzzle Book: Test and Improve Your Tactical Vision (Russell 2004)
- How to Play Chess Endgames (with Wolfgang Pajeken, GAMBIT 2008)
- Chess Cafe Puzzle Book 2: Test and Improve Your Positional Intuition (Russell 2008)
- Bobby Fischer, The Career and Complete Games of the American World Chess Champion (Russell 2009)
- Chess Cafe Puzzle Book 3: Test and Improve Your Defensive Skill! (with Merijn van Delft, Russell 2010)
- Chess Cafe Puzzle Book 4: Mastering the positional principles (with Alexander Markgraf, Russell 2012)
- The Magic Tactics of Mikhail Tal: Learn from the Legend (with Raymund Stolze, Edition Olms 2012)
- Fighting chess with Hikaru Nakamura (with Raymund Stolze, Edition Olms 2013)
- The slow (but venomous) Italian (with Georgios Souleidis, New in Chess 2016)
- The Magic of Chess Tactics 2 (with C.D. Meyer, Russell 2017)

His excellent series of ChessBase–DVDs Chess endgames 1-14 also attracted attention.

Müller's popular column Endgame Corner was published at '[www.ChessCafe.com](http://www.ChessCafe.com)' from January 2001 until 2015, and his column Endgames is published in Chess–Base Magazine since 2006.

To date, numerous of his books have been published by JBV Chess Books (Joachim Beyer Verlag) – a total of 24 in German and the following titles also in English:

- Magical Endgames (together with Claus Dieter Meyer)
- The Human Factor in Chess (together with Luis Engel)
- The Best Endgames of the World Champions Vol. 1 + 2
- World Chess Championship 2021 (together with Jerzy Konikowski and Uwe Bekemann)
- The Best Combinations of the World Champions Vol. 1 + 2
- Bobby Fischer 60 Best Games
- Chess Training with Matthias Blübaum (together with Matthias Blübaum and Matthias Kreilmann)
- Typical Sicilian
- The Human Factor in Chess – The Testbook (together with Luis Engel and Makan Rafiee)
- Magnus Carlsen – The Chess DNA of Genius (2023)
- Karsten Müller – Attack (2023)