# Endgame Labyrinths 

By

# Steffen Nielsen \& Jacob Aagaard 

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## Contents

Key to Symbols used ..... 4
Chess Composition Terminology ..... 4
Foreword by Yochanan Afek ..... 5
HvdH Study Database ..... 6
1 The Best Training is Training (Aagaard) ..... 7
2 The Grandmaster Selection (Aagaard) ..... 9
3 Our Selection of Studies (Nielsen) ..... 13
4 The Points System (Nielsen) ..... 19
5 The Conventions of Endgame Studies (Nielsen) ..... 21
6 The Themes and Tactics of Endgames (Nielsen) ..... 23
(All chapter introductions by Aagaard)
7 Pawn Endgames ..... 31
8 Knight Endgames ..... 45
9 Bishop Endgames ..... 69
10 Rook Endgames ..... 103
11 Queen Endgames ..... 147
12 Pieces vs Pawns ..... 171
13 Minor Pieces ..... 187
14 Rook vs a Minor Piece ..... 221
15 Rook vs Two Minor Pieces ..... 247
16 Rook vs Rook and Minor Piece ..... 257
17 Rook and Minor Piece vs Rook and Minor Piece ..... 275
18 Piece Fight ..... 297
19 Active Defence ..... 321
20 Short and Sweet ..... 327
21 Playing Studies ..... 339
22 Just Tactics ..... 347
23 Solve Like a Grandmaster ..... 353
24 In the Wilderness ..... 359
25 Fresh Out of the Oven ..... 363
26 Fortresses ..... 375
27 Endgame Theory ..... 387
28 Classics ..... 393
29 Braincrushers ..... 409
Name Index ..... 420

## Foreword by Yochanan Afek

It was 2011 when Steffen Nielsen surprised the composing community, in only his third serious composing attempt, with a well-deserved victory in the tourney dedicated to the 60th Jubilee of the distinguished Dutch player and composer Jan Timman. Since then, Steffen has composed more than 300 studies, winning numerous prizes and other distinctions worldwide. He has obtained the International Master title of composing, and is just a step away from the supreme title of grandmaster. Winning the World Championship of endgame-study composition in 2022 was the highlight of a brilliant international career that started just over a decade earlier.

As a composer, Steffen seeks tense dramas that are rich in tactics, with hanging pieces and spectacular moves. Quite a few of his creative ideas are initially inspired by over-the-board competitive practice, which he regularly follows. Steffen's contribution to our fine art is also reflected in his extensive activity to promote endgame studies among the general chess public. He is the editor of the original studies section in the quarterly $E G$ (the only periodical exclusively dedicated to our art) and is the spokesman of the study sub-commission of the WFCC (World Federation for Chess Composition). He is regularly involved on chess social media and in his local Danish chess community. Steffen is part of the new leadership of the genre that is instrumental in navigating our art towards a bright future.

Jacob Aagaard is a grandmaster, and an excellent trainer and writer, as well as an occasional composer of practical endgame studies. Following previous leading trainers, Jacob long ago recognized the various exceptional qualities of studies as a training tool: empowering tactical and calculating skills, improving creativity, out-of-the box thinking and pattern recognition to name just a few. Jacob regularly uses endgame studies, both in his books and his training camps.

Yochanan Afek, Grandmaster of Chess Composition
Amsterdam, June 2023

## Chapter 1

## The Best Training is Training

The chapter title is stolen from Mark Dvoretsky, the great Russian trainer, who helped me in the development of my craft as well. His point was that while there are many ways to improve your playing strength as an ambitious chess player, the most effective way to do this tends to be through working on your decision making skills, including calculation. And a cornerstone of doing so is to solve a lot of chess problems. I have many times seen this with myself and with students of all levels.

In my first draft of this chapter, I wrote a lot of anecdotes about players improving at all levels, from worst to best in the school chess club with over 50 kids, from 2100 to GM in two years, from Boris Gelfand the legend to Boris Gelfand the World Championship Challenger and a lot in between. But I have a feeling that you already know of the immense success of a training-based approach if you are reading this.

Obviously, there is no one way to improve at chess. Just as you will not reach your full potential, if you are focused exclusively on one way. Often we see top players stagnate while focusing exclusively on openings. One of the ways you can improve your chess is by solving easy positions. What is easy, is individual, of course, but "uploading" as many patterns as possible to your brain is one way to improve your game. Another is to read about it, trying to understand deeper patterns. Then we have the memorization activities: openings and endgame theory. For some reason memorizing openings is the big craze at the moment at lower levels, which is not what trainers traditionally would recommend and not something that has led to great results with the people I know.

Solving difficult exercises enters into the scene when you make a push past the local scene and start to compete in international tournaments. For this endgame studies can be highly useful. The requirement of having one narrow path to the podium is actually less unrealistic for the practical player's experience than one would think, but even if it was, then training is meant to isolate the improvement of specific skills, not mimic practical play in its entirety (that's called playing).

So, what are the benefits of solving endgame studies? There are a few:

## Seeing the potential of the pieces on a somewhat empty board

A core ambition of study composers is to create a theme, twist or tactic that is immensely pleasing through its surprise. For this reason, studies are at their core an exploration of the potential and the limitations of the pieces. Our feeling for chess is naturally expanded by exposure to quality material.

## Calculation skills

Because of their tactical nature, we are forced to train a lot of our calculation tools, when solving endgame studies: Imagination, visualization, elimination and determination are a few that immediately come to mind, although there is not really any reason to exclude any calculation tools from the list.

## Endgame skills

While studies are "endgame positions with extraordinary content" (Reti), the same can be said of endgames as a whole. I have been working a lot on endgames the last few years, with a longer list of books, including Technical Decision Making in Chess and Decision Making in Major Piece Endings (both co-written with Boris Gelfand), A Matter of Endgame Technique (a manual of practical play in the endgame to accompany the many manuals on theoretical endgames), Conceptual Rook Endgames (the same, only here meant specifically to match Theoretical Rook Endgames by Sam Shankland, with the two books published together) and the forthcoming Grandmaster Training Camp: Endgames!, which will be out the year after this book, written by Sam Shankland, with the format being that I collect exercises for him to solve and share his solutions and mistakes with the reader.

There is certainly material from all of these books that could be the basis for studies (study-like is the common description) - one rook endgame led to study no. 191 inspired by Grandmaster Training Camp: Endgames!, 322 comes from Conceptual Rook Endgames, while 936 and 984 come from Decision Making in Major Piece Endings.

In this book you will learn a lot about zugzwang, mutual zugzwang, promotion combinations, fortresses and a lot of other endgame themes.

Mark Dvoretsky relied a lot on great studies to improve decision making skills. For my students I have relied more on positions from actual games, for no specific reason at all.

When I was an improving player, I worked a lot with a book with studies by a Russian author, where the publisher for easily and not entirely honest reasons, added the name of a famous grandmaster as co-author. I am sure the grandmaster made improvements to the book, but so do the editors at Quality Chess, without claiming to be co-authors.

The book you now hold in your hands is in part inspired by my love for this long forgotten book, which I probably would not like half as much, if I was to check it now with an engine.

The other part of the story is more recent. We were a group of four people who were solving studies separately and comparing our solutions in online meetups. In the beginning we were using a famous book on endgame studies, but getting frustrated with some of the longer and excessively elaborate solutions which seemed too far removed from practical play. This led me to contacting Steffen, asking if he had any good studies for solving. Although I failed to solve a lot of what he was sending, we enjoyed his positions much more and found them far more approachable. Soon I moved on from my failure to solve as well as my friends, to the potential of reproducing what excited me at my youth, but to a modern 21 st century standard.

We would like to thank Andrew Greet and Semko Semkov for pointing out some late corrections which helped to raise the standard still further.

## Chapter 3

## Our Selection of Studies

The endgame study is a piece of art that is closely connected to the game of chess. As a composer of endgame studies, I have two aims. One is purely artistic and the other is making my work accessible to the chess public.

The first basic aim of the composer is to invent novel endgame themes (or combinations of known themes), presenting them in the best, most often the cleanest and most harmonious, manner. This may be seen as the true artistic part of endgame studies - a process giving great excitement, frustration and pleasure when one, hopefully, manages to accomplish what one has set out to do.

But as a composer, I also want an audience who I can excite. The audience of a chess composer consists of a limited number of connoisseurs and of a much larger number of chess players. It is a definite limitation of our art compared to broader art forms that only a specific group of people has a chance to enjoy the studies: people who know chess, and know it quite well.

Chess players may either enjoy studies by simply playing through the moves, or take an active part in trying to solve the problems. While both activities give pleasure, there is no doubt in my mind that the pleasure of solving is larger. The beautiful treasures appearing, as the brain navigates the labyrinth of an endgame study, are much greater if one is allowed to dig them out actively for oneself. This active participation of the audience is another thing that makes chess studies and other chess problems stand out clearly from other art forms, where the recipient is a mere spectator.

Different composers put varying emphasis on the role of the audience. Some composers have the solver in mind throughout the composing process, and shun muddy sidelines that they are unable to comprehend themselves or to explain to others.

Other composers are $100 \%$ focused on presenting their idea in a correct, artistic form and, it seems at times, have no need for solvers or even an audience. Such artists may care only for the creative process, and possibly for the recognition of the small group of connoisseurs who would recognize their constructional accomplishments. This is very idealistic. This group of composers believe in their own products and patiently wait for the world to catch up.

Personally, I stand somewhere in the middle. I have come to accept that not all my studies are for solving purposes. Some of them, for instance, are too far removed from the actual game to generate any interest among chess players, let alone help them boost their rating. Others are too difficult. That is fine with me. The studies have great value for me anyway. They give me pleasure. On the other hand, I want to share my excitement with the world, and this can only be done by looking for as large an audience as possible.

For this book Jacob and I have composed some 20 original studies specifically with an audience of ambitious chess players in mind. These are studies that I won't necessarily count among my best creative works, but which are perfect for solving.

The best studies, to my mind, are those that both reach high levels of creative artistry as well as a broad audience. Luckily, in many cases, the two things go hand in hand.

## What you will not find in this book

In Harold van der Heijden's highly recommendable database of endgame studies, you will find 93,839 pieces of work. In our selection, we have picked 1002 game-like and artistic studies. The studies will be realistic, reflecting the types of positions and decisions that you are likely to face in your games. But what about the $92,000+$ other positions in the endgame database? Those we've skipped?

On the next couple of pages, we will attempt to clarify what we mean by "game-like".

## You will not find romantic studies

Studies with themes and tactics that are far removed from the practical game are called romantic. While these wild fights are of great interest to study composers from a purely artistic point of view, they are unlikely to help you in a practical game.

## Leopold Mitrofanov

1st prize, Rustaveli MT 1967


This is Mitrofanov's romantic masterpiece featuring the mind-boggling deflection 6. ${ }^{[3 n g}$ g5!!. To my knowledge, it is the only study to have a whole book devoted to it, namely "Mitrofanov's Deflection" by Victor Charusin.

##    $11 . c 8=$ 䟰 +

It is wonderful. But the starting position, or anything remotely resembling it, will not occur in your next 10 trillion games, and therefore is not in our collection either. In other words, if you are on the lookout for quadrupled pawns, multiple bishop promotions or eleven consecutive cross-checks, then you have come to the wrong book. We are keeping it realistic.

## You will not find middlegame positions

Some of the best studies start off in middlegame positions. Artistically, they can be just as pleasing as traditional endgame studies, particularly when the starting position has features known from games, such as typical pawn structures and piece constellations. Since new ideas with few pieces might slowly dry out (though this has been predicted for decades), I predict that middlegames studies will be one of the futures of our art. In this selection, however, we are focusing on simple, educational endgame positions, with pawns and two pieces or fewer on each side.

## Steffen Nielsen

Special Prize, Rinck 150 MT 2021


A game-realistic position leading to a fun chain of events. But it is much more a middlegame than an endgame and thus will not feature in this book.






 9. ${ }^{(102+-1-0}$

## You will not find pleasant studies

This is not an attempt to frighten you off. In fact you will find nothing but aestheticallypleasing studies. But not those that are pleasant and trivial for solving. Hard work will be required for the studies in this book.

Below is your last chance to enjoy a pleasant (easy) study in this book. Solve it from the diagram (solution just below).

Steffen Nielsen
Dedicated to Tølløse Weekend Tournament 2017




How long did this stalemate study take you to solve? Not long enough in our opinion. At no point does White have a difficult choice, and the prettiest move, $1 . . \mathrm{d} 3$, is played by Black.

## You will not find (too much) mud

While the evaluation of "unclear" is an acceptable tool of authors of openings monographs, unclarity is a major enemy of endgame composers. We allowed ourselves a few " $\ddagger$ " variations, meaning the position is drawing but in a practical game White would still have some chances. I am not sure about the origin of the term "muddy", as used about difficult sidelines, but the meaning is obvious. Solvers get stuck in sidelines to sidelines, and are unable to rise out of the swamp.


It is White to play. Answer the following question honestly: is this position a win for White?

You don't know? Good, that is the honest reply. Magnus Carlsen doesn't know either. Not until he consults the 7-piece Lomonosov Tablebases. We did in fact consult the oracle. And White will win with either 1. . $\mathrm{b} f 4$ or 1. $\frac{6}{6} f 5$. After 1. 㯖d4, it is only a draw. Why? We don't know.

Now, imagine the following: in a study, White is striving to win. At some point, Black has a choice. He can either play a move that loses
beautifully (the intended solution of the study). Or he can opt for an alternative move that results in the diagram position above, which loses in two ways, both requiring 48 difficult moves for White to fulfil his quest. Using such a position in (a sideline of) an endgame study is unacceptable. We have made sure that such mud is kept at a clear distance.

Note that even though the engine gives a clear evaluation of say +5 pawns for White, this evaluation may still be humanly incomprehensible, involving branches upon branches of difficult lines, again making the study unsuitable for our present purpose.

## You will not find technical endgames

A technical endgame is here defined as one without surprises. Often you will find these positions in endgame manuals rather than endgame study books. Typically, you will be able to grind these down one move at a time, without turning to the kind of imaginative lateral thinking that we are preaching here.

Here is a typical example of a technical endgame study.

## Richard Becker

Chess Life \& Review 2006



 11. 息 $\mathrm{d} 5+-$

To win, White must execute a number of precise unique moves, none of which are specifically surprising.

## You will find only a few pawnless endgames

There are very few pawnless endgames in our
 vs 品 are obvious exceptions) very rarely occur in games. When they do occur in practical games, the road to success is typically technical (like the method for winning Queen vs Rook) rather than artistic.

## S. Nielsen \& M. Minski

hm Birnov MT Teoriya i Praktika Kompoz 2017


 tabld


 9. $0 \mathrm{~d} 6 \dagger+-$; 8...


This study is difficult, though not impossible to solve for the readers of this book. But the study deals with issues that we consider too far removed from games. Three vs two pieces happens so rarely in games that the tactics specific to them can be disregarded for practical usage.

## What you actually will find

The studies will be realistic and game-like, reflecting the types of positions and decisions that occur in games. The material distributions you will be facing in these problems are also meant to reflect the positions you are likely to meet over the board.

## Those difficult rook endgames

There are a large number of rook endgames in our selection, as this is the endgame you are clearly most likely to encounter in your games. This goes in particular for rook vs rook endgames, which, according to Müller and Lamprecht's Fundamental Chess Endings, occur in $8.45 \%$ of all games. For comparison, the
corresponding number for knight vs knight endgames is a meagre $1.56 \%$.

Steffen Nielsen
Original


This is a position from the book, composed by me (see page 145). We will not give away the solution at this point, but just mention some characteristics. The position is natural and could easily have occurred in a game. White is dealing with the same tough challenges that a player would face in a game. How to stop the dangerous black pawn, while creating chances for his own passer? And what about his king safety? Are there stalemates to consider? Mates? Does Black have any tactical resources that are not immediately obvious? What candidate moves are there?

Sam Shankland liked this study and solved it in five minutes.

## Tricky pawn endings

We all know that reaching a pawn endgame is no guarantee of error-free calculation. In this book you will find a fair share of tricky endgames with only kings and pawns.

## Great piece cooperation

Of course, you will also face plenty of studies with the bishop, the knight and the queen as major actors. There are also a large group of studies featuring two pieces aside. You will learn how different types of pieces tend to cooperate and induce tactics in the endgame.

## Chapter 14

## Rook vs a Minor Piece

For a chapter with this title, you would not be alone in suspecting that the title really should have been Minor Pieces against Rooks, as you would expect the "unexpected", with the weaker pieces dominating and outfoxing the larger, stronger piece. But although there is plenty of that in this chapter, there is also a good deal of rook dominating minor piece material, making it an unpredictable and enjoyable journey.
$\star \star \star \star \star$


N．Rezvov \＆S．Tkachenko
1．p Selivanov JT 1997

## 1．d7

Black is able to escape with a draw after：



## 1．．．䣽a4 $\dagger$

1．．．＂d4 2．0．06†＋

## 2．太

To be able to harass the black rook．Sooner or later，the king will have to go to c6 if White


## 3．．．監b8

 5．${ }^{0} \mathrm{e} 6 \dagger+$

## 4．${ }^{\text {高 }} \mathbf{c} 7$ 品 28

4．．．

## 5．克b7 骂h8

The only square that does not lose on the spot．

5．．．gg8 6．${ }^{\text {Me }} 8+$


## 6．e4！（3 points）

The key point is to protect the pawn for the
迠e3＝Black draws．

## 6．．．古f3

The basic point of the last move was that


Black can also try 6．．．起e3 7．啚c7 四a8，but White is able to regroup the knight．8．0f5 $\dagger$ ！遠xe4（Otherwise the pawn will be defended with 9．0d6．） $9.9 \mathrm{~d} 6 \dagger$ 者f3 $10.0 \mathrm{c} 8+-$ and the d－pawn queens．
 White．Black has to do something．

## 7．${ }^{\text {a }}$ c6！（1 point）

The key move，to avoid trouble on the 7th
 able to eliminate all of White＇s pawns．

## 7．．．㗊d8

 and the d－pawn will queen．


## 8．${ }^{\text {2 }}$ e6！（1 point）

Setting up a vital tempo gain to win the pawn ending．



Domination．

## 1－0




$\star \boldsymbol{*} \boldsymbol{*} \boldsymbol{*}$
533

$\boldsymbol{*} \boldsymbol{*} \boldsymbol{*} \boldsymbol{*}$




531．N．Kralin，5／6．hm Kommunist 1973



 8．${ }^{(1)} \mathbf{f} \mathbf{2}=$ Stalemate．Positional draw． $1 / 2-1 / 2$

532．S．Nielsen，Original 2016




533．S．Nielsen，Original 2020
 3．．．a3 4．b6 a2 5．b7！（1 point）5．



534．M．Minski，Problem Paradise 2013





535．M．Minski，Magyar Sakkvilág 2013

 $4 . . . \mathrm{bxc} 55 . \mathrm{b} 6 \dagger$ 葸a6 6．b7＋－5．a5！（1 point）5．bxa6？？bxc5－＋5．．．bxa5 6．b6 $\dagger+-$ Domination．1－0

536．M．Minski，1．p Gurgenidze JT 2008



品26 13．息d8＝Asymmetry． $1 / 2-1 / 2$


$\star \star \star \star \star$

$\star \star \star \star$ *

537. L. Kubbel, Shakhmatny Listok 1925




538. M. Matous, 1.p Due Alfieri 1984





539. Y. Afek, 2.hm Magyar Sakkvilág 2013



 Underpromotion. 1-0
540. Y. Afek, .hm Kalashnikov-50 JT 2011


541. D. Gurgenidze \& V. Kalandadze, 1.hm Vlasenko-70 JT Problemist Ukraini 2009




542. H. Bednorz \& M. Minski \& W. Bruch, sp.hm Europa Rochade 2006


 Domination. 1-0

