Evolution of learning endgames

Jan Cheung, 1 april 2024

Preface

With the trend of speeding up the time control in a regular game, mastering endgame knowledge has become more important to finish the game successfully.

The first well known book containing endgames dates back from the 18th century, by Philidor. Since then, many chess players have tried to give a final assessment in positions with few pieces and pawns. As evolution in chess turned out, each publication contains better analysis then its predecessors.

Endgame learning 50 years ago

Learning endgames has evolved enormously in the last 50 years.

A lot of older chess players have learned end games from the famous end games book series of Yuri Averbakh (Pawn Endings, Knight Endings, Bishop Endings, Bishop and Knight Endings, Queen Endings) and Levenfish and Smyslov (Rook Endings). In these books, an important step was put to structurize the whole range of endings. Each book began with very few pieces and pawns with a final assessment. The reader was instructed to study these elementary positions thoroughly, as they were used to assess later positions in the book, with more material.

Because engines did not exist at the time, it was laborious work to analyze each end game situation. According to the chess world, it was an achievement that the assessments in the Averbakh endgame books were quite realiable. Even the difficult Q and pawn vs Q ending was extensively analysed, although it must be said that due to the many candidate moves of a Queen, the positions were limited with the pawn near the promotion square.

The Averbakh books contained a lot of explanations of elementary positions, but due to the limitations of a book, it did not contain much material about practical play.

Sahovski, the publisher of the Chess Informant, had published a series of Endgame Encyclopedias, in which the various editors had tried to pick contemporary positions from real games, and in which the reader has to find a solution. Due to the limitations of a book, there was not much explanation.

The Averbakh books and the Chess Informant Endgame Encyclopedias were published in the era where games were adjourned after 40 moves were played. Chess players at that time were not forced to learn final assessments of elementary positions because they had time to study candidate positions when a game was adjourned.

Endgame learning 20-25 years ago

With an engine called "Fritz" made history with crossing the 2500 ELO mark and by playing against humans in the Dutch Championship in 2000, rated games were increasingly forced to finish without adjournments. Chess players were forced to learn final assessments in endgames. The next question was how to write a chess ending book with good explanations, and with emphasis on practical play.

Around the globe, many end game specialists have tried to find a good answer. The following list is not complete. I will only mention the end game books I have read. The complete list with titles could be found at the end of this article.

- In the UK, Jonathan Speelman published 2 books about analysing the endgame and endgame preparation.
- Also in the UK, John Nunn published a series of endgame books with very few pieces. This could be seen as a first step to construct an end game tablebase.

- In 2003, Mark Dvoretsky published the famous Endgame Manual with his name. This book is still a best seller today, now in the 5th edition. Dvoretsky published more end game books. In general, many chess players have the opinion that the material in Dvoretsky's books are of good quality, but it is difficult to master the content when the player is not a title holder.

- In Germany, there were many endgame contributions published by Karsten Müller, with several co authors. The books contains much exercises and explanations about practical play.

Engines and Tablebases

Engines used brute computing force to assess the position. The restrictions at that time was the CPU and the memory. In the 80s, they were not capable to give a perfect solution in positions with limited material.

The first well known engine to give a perfect solution in the difficult Q and pawn vs Q ending was contributed by Ken Thompson. The solution was implemented in a so called tablebase. In 1991, he managed to release a set of CD-ROMs containing a tablebase of 5 pieces of pawns (5 men). After the user puts a position with 4 or 5 pieces or pawns, the engine gives in no time a perfect solution leading to forced mate.

The next advancement was the Nalimov Endgame database with a forced assessment with maximal 6 men. The database was constructed in several DVD's.

It took quite a while to construct a final assessment of 7 or more men because of the limitations of hard disks at that time. Finally, the Lominosov tablebase for 7 men was created. The material could only be put on the cloud. A contemporary tablebase is Syzygy, which uses less space than the Nalimov tablebase.

Nowadays we have engines in the cloud, which can be connected to many servers with much memory, giving an assessment based on AI, such as Alpha Zero.

Finding a motivation to learn endgames

Now we have the material, but there are now 2 problem markers.

1) We study at the wrong way. Learning a forced solution by heart is difficult if there is no structure. It is known that after a week, if we do not do anything with the new knowledge, we have already forgotten the material. There is a growing need for an endgame book with good explaining of tools for practical play.

   Jesus de Villa has tried to overcome the first question with the award winning book '100 end games you must know''. Nowadays this book has a 5th edition. The book contains 100 elementary positions. I must say that this book has well explained the Rook and Bishop vs Rook endgame, which sometimes happens in a game. Although well received, a disadvantage of the book is that only contains elementary positions.

2) We do not have time to study end games because we encounter the situation that opening discussions occur more frequently in our games than an end game situation. There is a growing need for and endgame book that contains many exercises that are easy to digest.

   Jesus de Villa has tried to solve this quest in 'The 100 Endgames You must Know Workbook'. To complete the research of an endgame situation, the author has published a new book '100 Endgame Patterns You Must Know'.

The book 'Endgame Corner' by Karsten Müller and Alex Fishbein, has tried to overcome these 2 quests in 1 book. The exercises of the book contains temporary games of top grand masters, so if you are able to find a solution better played than the original game, you have proven that you have good endgame skills!

As books can fill up space, nowadays there are lots of endgame CDs available at the internet.

Imagine your game has reached the endgame and you wonder how to continue. Here are 2 tools.

Central theme: passed pawn

A practical tool in the endgame, is to look how the pawns are located.

1. Find the side where you have a pawn majority.
2. Restrict the mobility of your enemy, by locking the pawn structure.
3. Create a passed pawn.
4. Promotion.

Central theme: zugzwang

In many situations where one side has structural advantage in an endgame, one can find oneself in a situation how to continue the game. Often a player will start to think how to win the game. One of the most made mistakes a player makes, is to spend too much time on forced variations to win the game. In chess there is another way to lead to victory, by putting the opponent in a zugzwang situation. The German word - *for English readers: there is no English word of this description in chess!* - says it all: the side who has to move first, will be put into a worse situation. I advise the reader to analyse many endgames from grandmasters, where the player with the structural advantage prefers not to pick up a random pawn, but first to limit the scope of the activity of the enemies pieces. The grand master rightfully believes that restriction the mobility of the enemy pieces is worth more than 1 pawn. Only when the enemy is completely bound, and there is no move for further improving the position, the random pawn can be picked up.

The role of studying studies in the endgame

There is a growing trend that studying endgame studies has improved decision making in middle game and in endgame. In an endgame study, the chess player is forced to calculate many moves to the unique solution.

The help of the engines in the endgame

Nowadays we have free chess programs in the internet, such as *lichess.org*, where the chess player can analyze endgames in arbitrary positions at all time. This tool helps many players to pay attention to the endgame. The disadvantage of these tools is that it has no explanation and it lacks practical play. A suggestion of an engine in the end game is from time to time not understandable for a human chess player and in a practical play, there are situations that the human player will prefer to play a more logical move that is 2nd of 3rd rated for the engine.

Last but not least

It is important have the right attitude during the middle game, while heading to a possible endgame. With no second time control, the chess player must have left some energy for the last stage of the game. But the most important is: have fun while heading to an endgame. Playing an endgame could be regarded the same in football as taking penalties after a playing a football match has no decision after 120 minutes of play, so if the chess player regularly does not pay attention to endgames, the game will not be easy won.

Source

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- Endgame Corner – 450 Instructive Endgame Exercises – Karsten Müller and Alex Fishbein (Russell Enterprises Inc. 2023)
- Endgame Turbo 5 USB flash drive - Chessbase