"There is a generally accepted division of chess players into those who calculate variations and those who think in schemes by laying stress on the strategic elements of chess play."

The 13th World Chess Champion
Garry Kasparov

Thinking in Schemes

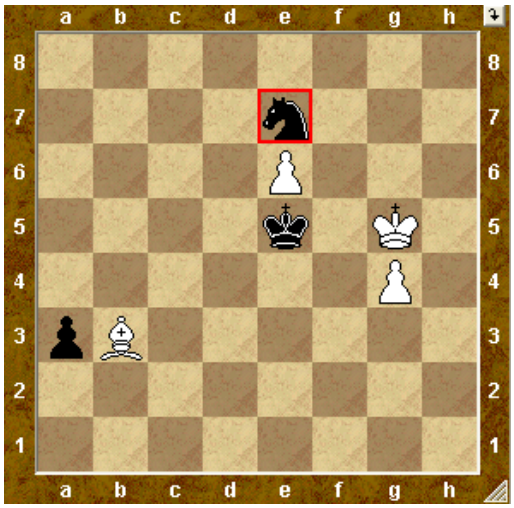
As the German Grandmaster R. Teichmann —"one of the finest positional chess players" in the words of J.-R. Capablanca—once remarked, "Chess is 99 percent tactics". By now, there have been published many textbooks and problem books in which there are hundreds, even thousands of examples serving for the development of combinational vision and variations calculation skills. At the same time, there is an almost total lack of the chess literature showing a sufficient number of examples for the development of positional insight. But strategy, even if it occupies only one percent, is a kind of "nucleus" surrounded with "electrons" of variations; and if this nucleus is missing, the "matter" of chess play breaks up.

Planning is one of the most important and the hardest elements of chess mastery. Grandmaster A.A. Kotov, when speaking about the tactics of playing in time-trouble, pointed out that the most widespread mistake in the games against strong chess players is in trying to outplay them in tactical complications: grandmasters calculate variations with lightning speed. But formulation of strategic tasks may lead to success, because the hardest thing even for the strongest chess players is planning, locating the most favorable placement of pieces for attack as well as for defence.

Grandmaster A.A. Kotov recollects: "Once, during the 3rd Moscow International Tournament held in 1936, several chess masters were analysing the ending of a game. They could not find any solution, but there was more than enough of arguing. Suddenly, into the tiny room where they were analysing the game entered Capablanca who loved to stroll about while waiting for his turn to move. On learning the cause of the dispute, the imposing Cuban suddenly scattered the pieces about the board and then showed what kind of arrangement the active side should try to achieve. It is not a slip of the tongue: Don Jose had literally scattered the pieces without making any moves, but simply placed the pieces to their proper positions. And then all became clear at once: the scheme was ready and a win could be easily achieved... Later on, I have seen such a way of thinking in the play of contemporary outstanding endgame masters, Flohr and Smyslov".

Here is yet another example, from the book "Analytical and Critical Works" by M.M. Botvinnik: "… in 1969, the Beverwijk tournament. The game Portisch—Botvinnik had been adjourned in a position difficult for the Ex-champion of the World. Keres was helping Botvinnik to analyse the adjourned game. In the course of analysis, there was determined the critical position

No. 1



Let's hand the word over to M.M. Botvinnik: "At this moment we both became thoughtful. What should we do, really? If one moves the Black King, then White will seize square f6; if the Knight moves—the White King breaks through square g6…
—Paul Petrovich —I remarked timidly—there is a drawn position: when the White King is on square f7 and the pawn on g5, one will play Ke5-f5 and, after g5-g6, give check with the Knight on e5, and there will be a draw… But how to achieve that?
The experienced master of endgame study Keres immediately put the idea into shape:
81. ...♘c6 82. ♔g6 ♘e7! 83. ♔g7 ♘c6 84. g5 ♔f5 85. g6 ♘e5!

L. Portisch – M. Botvinnik
Grünfeld Defence
1. d4 ♘f6 2. c4 g6 3. ♘c3 d5 4. ♘f3 ♗g7 5. ♕b3 c6 6. cd ♘d5 7. e4 ♘b6 8. ♗e3 O-O 9. ♖d1 ♗g4 10. ♗e2 ♕c7 11. O-O ♘8d7 12. h3 ♗f3 13. ♗f3 ♔h8 14. a4 ♘c8 15. g3 e6 16. d5 ♖e8 17. de fe 18. ♗g4 ♘f8 19. ♗c5 ♕f7 20. ♖d3 ♘b6 21. ♗f8 ♗f8 22. a5 ♘d7 23. ♕b7 ♘e5 24. ♕f7 ♘f7 25. f4 h5 26. ♗f3 ♖ed8 27. ♖fd1 e5 28. ♖d7 ♔g7 29. fe ♖d7 30. ♖d7 ♖e8 31. ♔g2 ♗c5 32. ♖c7 ♖e5 33. ♖c6 ♗d4 34. b4 ♖e7 35. ♘d5 ♖b7 36. ♖c7 ♖c7 37. ♘c7 ♔f6 38. ♘d5 ♔e6 39. ♘f4 ♔f6 40. ♘d5 ♔e6 41. ♘f4 ♔f6 42. ♗d1 ♘d6 43. ♔f3 g5 44. ♘e2 ♗b2 45. ♔e3 ♔e5 46. ♗c2 ♘c4 47. ♔d3 ♘d6 48. ♘c3 ♗a3 49. b5 ♗b4 50. b6 a6 51. ♘d5 ♗a5 52. ♔e2 ♘b7 53. ♗d3 ♘c5 54. ♔e3 ♗e1 55. g4 hg 56. hg ♗a5 57. ♗c2 ♗e1 58. ♔f3 ♗a5 59. ♗a4 ♔d6 60. ♗e8 ♘b7 61. ♔e3 ♗e1 62. ♗f7 ♘c5 63. ♔f3 ♗a5 64. ♗g8 ♘b7 65. ♔e2 ♘c5 66. ♔e3 ♗e1 67. ♔f3 ♗a5 68. ♗f7 ♘b7 69. ♘e3 ♗b6 70. ♘c4 ♔c7 71. ♘b6 ♔b6 72. e5 ♘d8 73. ♗a2 ♘c6 74. ♔e4 ♘e7 75. e6 ♔c5 76. ♔e5 a5 77. ♔f6 ♔d6 78. ♔g5 ♔e5 79. ♗b3 a4 80. ♗a2 a3 81. ♗b3 ♘c6 82. ♔g6 ♘e7 83. ♔g7 ♘c6 84. g5 ♔f5 85. ♔h6 ♘e7 86. ♗a2 ♔e5 87. ♔g7 ♔f5 88. ♔f7 ♘g6 [½:½]

We were laughing for about ten minutes: the solution turned out to be so simple and elegant. In fact, upon resumption of the game there happened nothing unexpected". The game was finished in a draw and Botvinnik with Geller shared the first two places, while Portisch and Keres were behind by half a point.
Evidently, the right solution was found because Botvinnik had discovered a drawn game scheme. After that, the analysis immediately went in the right direction. With the other, purely combinational, way of thinking, quite possibly, the solution would never be found or would be found with a major expenditure of time and effort.

Thinking in schemes – What is it?

The results of a great number of studies on psychopedagogical problems of learning and improvement of chess mastery are known.
The problems of strategic thinking and training of strategically thinking chess players have received less attention in spite of the fact that "the level of chess player's mastery depends essentially on his strategic thinking". Besides, the need for creating this book has been as well dictated by the impossibility to apply the strategic thinking of Artificial Intelligence (chess software) as a model for training highly skilled sportsmen: The differences between man and computer in decision making are too big.
From the standpoint of the theory of stage-by-stage formation of mental actions (P. Galperin), each action consists of three parts: orienting, executive and verifying-corrective. In this theory, the image of action and the image of action environment are combined into the integrated structural element called "orientation base of action" (OBA) which serves as a base for action control. Orientation base of action is the system of conditions on which man actually relies while performing an action. The orienting part of action is related to utilization by man of those objective conditions, needed for a successful fulfillment of the given action, which were integrated into the content of the orientation base of action. The orienting part of action is directed to:

a) Proper and rational construction of the executive part of action; in such cases, its content is formed by taking into account the conditions necessary for the proper (and rational) construction of the predetermined executive part;
b) Support rational selection from possible executions.

This function of the orienting part of action stands out clearly when analysing the actions related to chess play. Indeed, the orienting part of action should support a proper choice of the next move, this is the main thing. As for the executive part of the selected action, it is very simple in this case: move a piece from one square on the chessboard to another according to the rules of movement for the piece. In this case, while carrying out the orienting part of action, one should use for orientation not only the system of conditions that supports the proper move of a piece from one square to another (the executive part of action), but also use the peculiarities of chess positions which determine choice of the next move.
Researches have shown that the efficiency of orientation base depends essentially on the level of generalisation of the knowledge (cues) that is part of the base, and on the completeness with which this knowledge reflects the conditions objectively determining the success of action. In the theory and methodology of sport, these essential cues received the name of "main reference points" (MRP) being a reflection in sportsman's mind of examination objects that need attention focusing while executing an action (M.M. Bogen). However, it was proved by special studies that "in the process of decision making, not all the elements of a situation are examined, but only those that are significant in the task demand context. A chess player studies not all, but only the efficient ways of playing a position, he takes into account activation opportunities not for all pieces, but only for those involved in a given variation" (N.V. Krogius).
This essentially differs from the actions of a computer calculating variations. Let's note an important thought of the 14th World Chess Champion in classical chess V.B. Kramnik, the thought on the fundamental difference between artificial and natural intelligence regarding strategic thinking. Although computer keeps a huge database of game openings, there always comes the moment when it will be necessary to pass from the database to one's own "thinking". Exactly then, when one needs to choose a plan for further play, the weakness of computer becomes apparent. At the same time, one should keep in view that computer suggests solutions immediately, if they have already been loaded into its memory, thus significantly outstripping the natural intelligence. The situation changes when computer has to find a new solution: computer is enforced to go over the "decision tree". Such a task has exponential complexity. The speed of making the right decision drops sharply when calculating a great number of variations is

required. Exactly for this reason, artificial intellect cannot understand the strategic thinking and it thinks in terms of variations, but not with plans or ideas.
From such theoretical positions, the system of human conceptions about the goal, plan and means of fulfillment of a forthcoming or executing action in the strategy of chess play may include examples of planning (strategic thinking) for certain typical positions of pieces and their interactions (schemes).
Thinking in schemes is an operational play planning, carried out in several nearest moves, for achieving the optimal arrangement of chess pieces that can serve as an orientation base of action. The arrangement can serve as a base for further operations or it may turn out to be the final one when the enemy gets into a hopeless situation or Zugzwang, or looses any opportunity to play for a win (building a "fortress"). Conceptions about the ways of advantage realisation as well as about the main typical fighting techniques in these positions may serve as cues (MRP) and may be a part of OBA in their generalised form.
The authorship of the notion "thinking in schemes" belongs to S.V Belavents who used it for the first time in his known article "Main principles of playing endgame". As Shereshevsky writes in his excellent book "The strategy of endgame": "Thinking in schemes should not be confused with preparation of the main strategic plan for a game, though both cases have much in common…".
To understand this issue figuratively, let's analyse a real-life situation from our not very remote Russian past. Assume that we have to move furniture to the new apartment. For that purpose you have been provided with a van, but only for a single run. If you load up items at random, they will not fit into the van, and so a single run will not suffice. But if you think over a right arrangement of items, design a mental scheme for their optimal placement, or if you use previously tested successful schemes, then you will cope with the task. So, the general strategic plan means: move furniture to the new apartment. Thinking in schemes—the closest operational task—means: select the right plan for the arrangement of items.

When application of thinking in schemes is possible?

If we assume as a basis the terminology due to Grandmaster A.A. Kotov that is set forth in his book "How to become a Grandmaster", then chess games are ascribed to the following types:

1) Combinational-tactical ("when the whole game is a unity of sharpest variations in which a sacrifice is followed by another sacrifice, one tactical blow meets with much the same counterblow of the enemy");
2) Tactical-manoeuvrable ("when there is no tactical confrontation, but mostly strategic moves and rearrangements are carried on");
3) Games with change of mode ("when tempest gives place to calm and vice versa").

Evidently, it will be right to apply thinking in schemes to the games of the second and third type.

Merits of the method

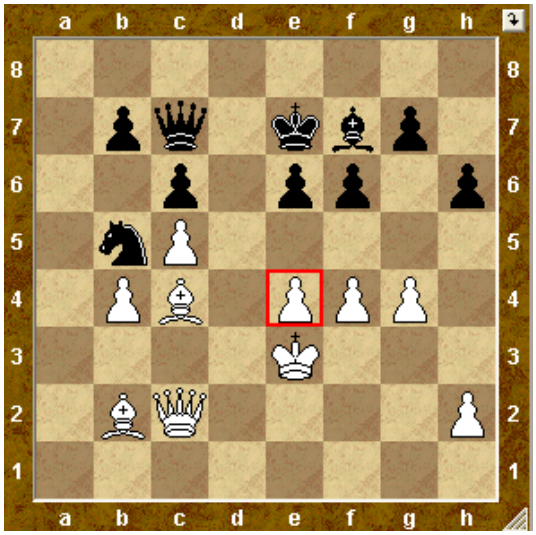
The most important merit of thinking in schemes is that in many positions it gives the chess players who are able to use this method an advantage over those who rely on calculations. We have received evidence of that in the examples by J.-R. Capablanca and M.M. Botvinnik. It is interesting that in the games of such seemingly combinational-tactical chess player as A.A. Alekhine there are many examples of thinking in schemes: it seems that, while perfecting himself, he assigned much time to this problem.
Thinking in schemes is especially urgent in modern chess, where, while carrying out a plan, one has to overcome the fierce resistance of the enemy who seeks to interfere with one's plans in every way, and where carrying out multistage plans is practically impossible.
Interaction between pieces as well as between pieces and pawns is the main thing for thinking in schemes. Persistent training of this element forms chess player's intuition and positional insight:

he starts feeling the invisible connections between pieces, learning to determine their optimal positions. By this token increases the efficiency of player's orientation base of action.
By thinking in schemes, a chess player deflects his attention away from specific calculations and takes a detached view of a position using the main reference points. This allows him to evaluate the position more objectively as well as to reveal its new opportunities.
The moment of thinking in schemes (or operational planning) usually coincides with the critical moments of a game; finding and feeling such moments is of utmost importance.
A great role is also played by analogy between plans, about which we have to tell separately, considering its great practical importance.

Analogy between plans

Let's cite A.A. Kotov once again: "Studying typical plans is the pursuit to which the strongest Grandmasters dedicate their time and efforts, perhaps not less than they do to study variations of openings. One can imagine how much this facilitates work at chessboard during an important game. When the nerves are strained and the brain is overloaded with solution of most difficult problems during a complicated chess fight, there is no need to invent—it is sufficient to repeat the known plan that occurred in other games".
While solving problems in this book, pay attention to the arrangement of pieces that may turn out to be typical. For example, let's take notice of these two positions.

No. 2

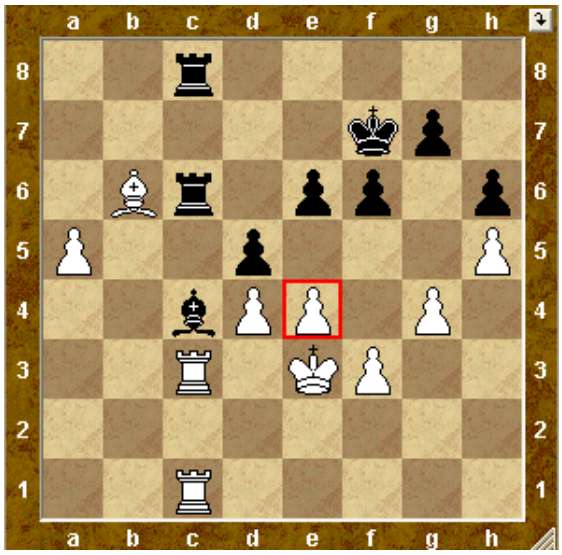


White to move

Diagram No. 2 from the game Petrosian – Euwe, Zurich 1953.

White's plan is to create a passed pawn on Kingside; they implement the plan with the help of the battering ram advance e4-e5.

No. 3



White to move

The second position, diagram No.3, is from the game Botvinnik-Tal, Moscow 1961. And here too, White's task is to create one more passed pawn or to break open avenues for the incursion of their rooks into the back ranks.

2. T. Petrosian – M. Euwe, 1953
Réti Opening

1. ♘f3 ♘f6 2. g3 d5 3. ♗g2 ♗f5 4. d3 e6 5. ♘bd2 h6 6. O-O ♗c5 7. ♕e1
[7. e4!? de 8. de ♘e4 (8... ♗e4 9. ♘e4 ♘e4 10. ♕d8 ♔d8 11. ♘e5+−; 8... ♗h7±) 9. ♘h4±] 7... O-O 8. e4 de 9. ♘e4 ♘e4 10. de ♗h7 11. b4! ♗e7 12. ♗b2 ♘a6 13. a3 c6 14. ♖d1 ♕c8 15. c4 ♘c7 16. ♕c3?!
[16. c5!?; 16. ♘e5!?]
16... ♗f6 17. ♘e5 [17. e5?! ♗e7 18. ♖d6 ♘e8 19. c5 ♗e4]
17... ♖d8 18. ♗f3 ♘e8 19. ♖d8 ♕d8 20. ♖d1 ♕c7 21. c5 a5 22. ♗g2 ab 23. ab ♖d8 24. ♖d8 ♕d8 25. ♕c2 ♘c7 26. ♗f1 ♘b5 27. f4 ♔f8 28. ♔f2 ♗e5? 29. ♗e5 f6 30. ♗b2 ♔e7 31. ♗c4 ♗g6 32. ♔e3 ♗f7 33. g4 ♕c7
(diagram No. 2)
34. e5!
34... ♕d8 35. ef gf 36. h4 ♘c7 37. ♕c3± ♘d5 38. ♗d5 ♕d5 39. ♕f6 ♔e8 40. ♕h8 ♔d7 41. ♕g7+− ♔e8 [41... ♕b3 42. ♗c3 ♔e8 43. h5!+−]
42. ♗f6 ♕b3 43. ♗c3 ♕d1 44. ♕h8 ♔d7 45. ♕b8 ♕c1
[45... ♕g1 46. ♔d2 ♕f2 47. ♔d1 ♕f1 48. ♔c2 ♕e2 49. ♗d2 ♕a6+−]
46. ♗d2 ♕g1 47. ♔d3 ♕f1 48. ♔c2 ♕a6 [48... ♕c4 49. ♔b2 ♕d4 50. ♗c3 ♕f2 51. ♔a3 e5 52. ♕b7 ♔e8 53. ♕c6 ♔f8 54. ♕c8 ♔e7 55. ♕c7 ♔f8 56. ♕d8+−]
49. h5! ♕a2 50. ♔d3 ♕b1 51. ♔e2 ♕e4 52. ♔f2 ♕d4 53. ♗e3 ♕b4 54. ♕f8 ♕b2 55. ♔g3 ♕f6 56. ♕d6 ♔c8 57. ♗d4 ♕d8 58. ♕d8 ♔d8 59. ♗g7 ♔c7 60. ♗h6 b6 61. cb ♔b6 62. ♔h4 [T. Petrosian] [1:0]

3. M. Botvinnik – M. Tal, 1961
Slav Defence
1. d4 ♘f6 2. c4 c6 3. ♘c3 d5 4. cd cd 5. ♘f3 ♘c6 6. ♗f4 ♗f5 7. e3 e6 8. ♗b5 ♗b4 9. ♘e5 ♕a5 10. ♗c6 bc 11. O-O ♗c3 12. bc ♕c3 13. ♕c1 ♕c1 14. ♖fc1 O-O 15. f3 h6 16. ♘c6 ♖fe8 17. a4 ♘d7 18. ♗d6 ♘b6 19. ♗c5 ♗d3 20. ♘a7 ♖a7 21. ♗b6 ♖a6 22. a5 ♗c4 23. ♖a3 f6 24. e4 ♔f7 25. ♔f2 ♖aa8 26. ♔e3 ♖eb8 27. ♖ac3 ♖c8

28. g4 ♖ab8 29. h4 ♖c6 30. h5 ♖bc8
31. e5!
31... g6 32. hg ♔g6 33. ♖3c2 fe 34. de ♖h8 35. ♖h2 ♖cc8 36. ♔d2 ♗b3 37. a6 ♗c4 38. a7 ♖h7 39. ♖a1 ♖a8 40. ♗e3 ♖b7 41. ♖h6 ♔g7 42. ♖ah1 ♖b2 [1:0]
And now, let's cite a position from the game Miles – Ljubojević, Puerto-Madrin 1980 (diagram No. 4).
Is it a familiar structure?

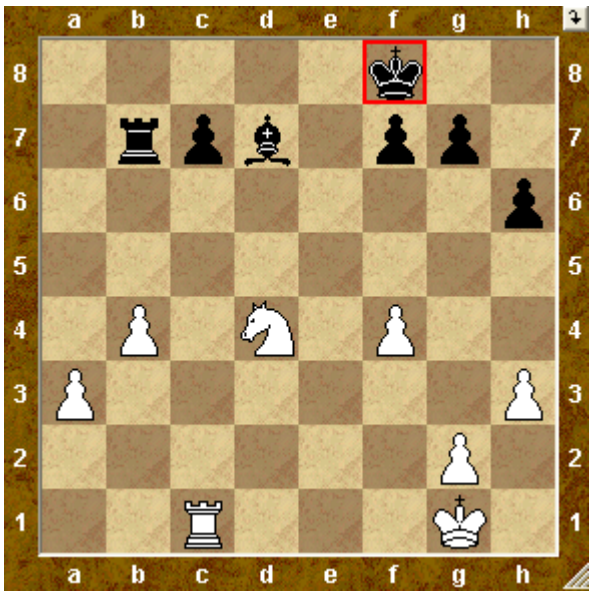
No. 4

White to move

4. A. Miles – L. Ljubojević, 1980
English Knight's Opening
1. ♘f3 c5 2. c4 ♘f6 3. g3 ♘c6 4. ♗g2 d5 5. cd ♘d5 6. d4 ♗f5 7. O-O ♘db4 8. ♗e3 ♗e4 9. d5 ♗d5 10. ♘c3 e6 11. ♖c1 ♘a2 12. ♘a2 ♗a2 13. ♕a4 ♗d5 14. ♗c5 ♗c5 15. ♖c5 ♕b6 16. ♖b5 ♕a6 17. ♕a6 ba 18. ♖c5 O-O 19. ♖fc1 ♘b4 20. ♖c7 ♖fd8 21. ♘e5 f6 22. ♘c6 ♘c6 23. ♗d5 ♘d4 24. ♗c4 ♖d6 25. ♔g2 ♔f8 26. ♖d1 ♖b8 27. b3 ♖bd8 28. ♖a7 ♘b5 29. ♖d6 ♖d6 30. ♖b7 ♘c3 31. ♔f3 h6 32. g4 ♘d5 33. h4 ♘c3 34. h5 ♘d5 35. ♗d3 ♘e7 36. ♔g3 ♘d5 37. f3 a5 38. ♗g6 ♖b6 39. ♖f7 ♔g8 40. ♖a7 ♔f8 41. e4 ♘b4
Then there followed
42. e5
the move that is based, after all, on tactical peculiarities of the position; its main idea is to take square e5 from the Black Knight—this is vividly seen in the variation:
42...fe 43.♖a8 ♔e7 44.♖g8 ♔f6 45.♖f8 ♔g5 46.♗e4△ ♖f7:g7-g6:h6
and there is no defence against the manoeuvre Rf7 ... In the other continuation, which actually occurred in this game, White, naturally, created a passed pawn on King side and won after the moves:
♘d5 43. ♖a8 ♔e7 44. ♖g8 fe 45. g5 hg 46. ♖g7 ♔f8 47. h6 ♘e7 48. ♖f7 ♔e8 49. ♗h5 ♔d7 50. h7 ♖b8 51. ♔g4 ♔d6 52. ♔g5 ♘f5 53. ♗g6 ♘d4 54. ♗e4 ♘b3 55. ♖b7 [1:0]
It is difficult to find move e4-e5 in the given example: it may simply not come into player's mind. But if you are familiar with the typical device for creating a passed pawn in a similar pawn

structure following the games by Petrosian and Botvinnik, then you surely will consider move e4-e5 and will not overlook this opportunity.
This example from the game Capablanca - Ragozin, Moscow 1936, diagram No. 5, became classic.

No. 5



The scheme with Knight on d4 and pawns on b4 and f4, which ensures control over the fifth rank, was frequently used by Capablanca, Alekhine and other chess players in different interpretations (Kd5, pawns b5 and f5, with reversed colours, etc.) —you will receive evidence of that while solving positions from this book.

5. J.-R. Capablanka – V. Ragozin, 1936
Nimzo-Indian Defence
1. d4 ♘f6 2. c4 e6 3. ♘c3 ♗b4 4. ♕b3 ♘c6 5. e3 d5 6. ♘f3 O-O 7. a3 dc 8. ♗c4 ♗d6 9. ♗b5 e5 10. ♗c6 ed 11. ♘d4 bc 12. ♘c6 ♕d7 13. ♘d4 ♕g4 14. O-O ♗a6 15. h3 ♕h4 16. ♘f3 ♕h5 17. ♖e1 ♖ab8 18. ♕a4 ♗b7 19. e4 h6 20. ♗e3 ♖fe8 21. ♗d4 ♘h7 22. ♗a7 ♖a8 23. ♕b5 ♕b5 24. ♘b5 ♖e4 25. ♖e4 ♗e4 26. ♘d2 ♗d3 27. ♘d6 ♖a7 28. ♘6e4 ♘f8 29. ♘c5 ♗f5 30. ♘f3 ♘e6 31. ♖c1 ♔f8 32. ♘e6 ♗e6 33. ♘d4 ♖b7 34. b4 ♗d7 35. f4, (diagram No. 5) ♔e7 36. ♔f2 ♖a7 37. ♖c3 ♔d6 38. ♖d3 ♔e7 39. ♔e3 ♖a4 40. ♖c3 ♔d6 41. ♖d3 ♔e7 42. ♖c3 ♔d6 43. ♘e2 g6 44. ♖d3 ♔e6 45. ♔d4 ♖a6 46. ♖e3 ♔d6 47. ♘c3 f5 48. b5 ♖a8 49. ♔c4 ♗e6 50. ♔b4 c5 51. bc ♗g8 52. ♘b5 ♔c6 53. ♖d3 g5 54. ♖d6 ♔b7 55. fg hg 56. ♖g6 ♖f8 57. ♖g5 f4 58. ♘d4 ♖c8 59. ♖g7 ♔b6 60. ♖g6 ♔b7 61. ♘b5 ♖f8 62. ♘d6 ♔b8 63. h4 [1:0]

It is strange that there is no mention of this typical scheme in any chess textbook, because, possibly, only positions with a definite pawn arrangement are considered as typical. It means that one can discover a whole stratum of typical positions based on interactions between pieces and pawns. We hope that after reading this book you will essentially widen your horizons and this will help you in perfecting yourself further.

Thinking with schemes at different stages of chess game

The traditional conception of thinking in schemes relates to endgames. S.V. Belanets had in view just endgame situations when he talked about thinking in schemes for the first time. It became

evident later that thinking in schemes is possible and necessary also at other stages of chess game; of course, when there exist appropriate conditions which we have already mentioned.

Openings

Talking about the openings, one may note that there exist entire openings-schemes such as Volga Gambit, Old Indian Opening, etc.; there are also schemes in different variations of virtually every opening, such as the Sämisch Variation of Nimzo-Indian Defence, many schemes in the English Opening, the Berlin Defence in the Spanish Opening, etc.
It is hard to overestimate the importance of studying such schemes. It is the schematic method of studying openings theory that is, perhaps, the most rational. When one says about a chess player that he does not understand the ideas of an opening, does not know the base games, then one has in view that the player does not know the typical positions which should be achieved in this opening (variation); what pawn structures, maneuvers of pieces and combinational blows are most characteristic for this situation; he also did not study the games in which these typical positions were exemplary played.

Middlegame

Middlegame is the most complex part of chess game, and here may arise most arguable moments. Thinking in schemes in the middle of a game can be divided into the traditional—planned-positional—and the combinational.
And if the former type of thinking in schemes does not provoke any particular questions and is similar to that of the game openings, the latter should be discussed at greater length. What is meant by the combinational thinking in schemes?
Let's classify schemes at the middlegame stage of chess game:

1) Base schemes. For example, when a chess player understands that the outcome of a game is decided by sacrificing, say, Bishop on h6, and he prepares to the sacrifice by the corresponding rearrangement.
2) Schemes in the process of carrying on a combination. Since many attacks bear a systematic character, it is required to involve new reserves after sacrificing. Therefore, a chess player is calculating specific variations, but can see the main scheme of involving pieces, say, Rook e1 through e4 and Bishop b2 through c1.
3) Final, theoretical and fantastic schemes.

By now, many combinations have been studied and became techniques. If a chess player sees the final position, say, smothered mate, and starts to implement this idea using the corresponding moves and rearrangements—this is also thinking in schemes, because the smothered mate scheme guides and leads the actions of the chess player.
There is another case, when the final scheme is a fruit of chess player's creative imagination, insight. Such positions are of Zugzwang character and after sacrifices there follow quiet moves.

Endgame

Thinking in schemes is fundamental for endgame, since in endgame it is possible to carry on both single-stage and multistage plans "where one can see through to the end". Let's consider the following classification of schemes:

1) Base, preparatory schemes, on implementing which a base is built for further attack (here is the control over important areas of the chessboard as well as the central focusing of pieces, favourable exchange, restriction of movement of enemy's pieces, tactical moments, etc.);
2) Theoretical schemes, leading to theoretically won and drawn positions;

3) Final schemes—ending schemes when there emerge checkmate situations, Zugzwang, or situations where a piece is shut out of play, or situations of hunting down a piece.

The idea of the book

As have been already marked, there are too few positional exercises in modern literature. It is the time to fill this gap. Naturally, one should begin from the very best—World Chess Champions!
This book is about strategy; it includes examples of strategic play and more than 300 strategic positions to solve, taken from the creative work of World Champions. To create the database "Thinking in schemes", examples were selected in such a way that the conceived schemes were not left as drafts, "behind the curtain", but were used in practice, to better discern their goals and merits. The database "Thinking in schemes" is efficient in the formation of strategic thinking of chess players, essentially adding to chess computer software by the usage in training some examples from World Champions' games as the reference model.

The goal of this book is not to make a complete report on the creative work of each Champion; perhaps, this is something for the future. There were selected most vivid and practically valuable examples of schemes, without including the best known, "trite", positions which roam from one textbook to another, exception made for those that became base models. This is a big plus that such exercises do not require unique solutions, unlike the tactical ones that have unique solutions as a rule. You have an opportunity to disagree and suggest your own scheme, and then try to prove your case; but it means that you can learn to understand a position deeper; you will perfect yourself in analysis. I wish you every success!

Using the electronic textbook based on thinking in schemes and the computer program

"Strategy" in the training of young chess players

Using the electronic textbook based on thinking in schemes and the computer program "Strategy" from Chess Assistant in the training of young sportsmen at T.V. Petrosian Chess Club (Moscow http://www.chessmoscow.ru/index.php?topicID=5) in 2000-2003 led to an increase in the performance level of the pupils being tested in the process of making strategic decisions; this is supported by positive dynamics: from level 30-40% to 55-75%; three pupils were brought up to the level of International Master.
The principle of thinking in schemes in the process of making strategically substantiated decisions is now being tested by the author while coaching a training group at Sports School for Children and Teenagers "Anatoly Karpov Chess School" (Moscow). These sportsmen won T.V. Petrosian Memorial in 2007 at the team and individual events. Additionally, a two-year long parallel analytical experiment was carried out to do a grounded evaluation of the strategic mastery teaching method with the usage, in the author's experimental group, of the electronic textbook "Thinking in Schemes" and the computer program "Strategy" (http://chessok.com/shop/index.php?main_page=product_info&cPath=7_26_29&products_id=220).

STRATEGY

Average Result %

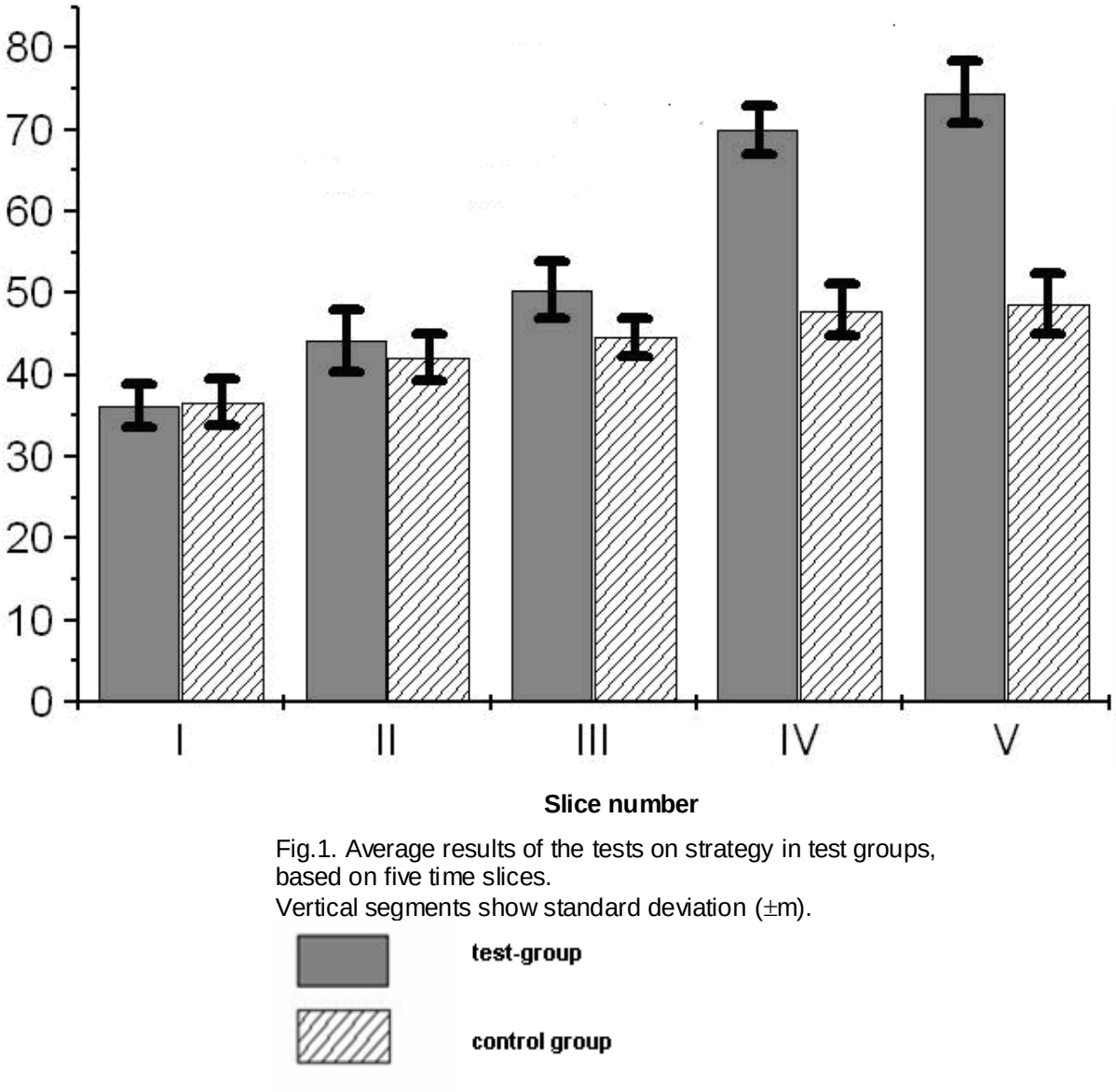


Fig.1. Average results of the tests on strategy in test groups, based on five time slices.
Vertical segments show standard deviation (±m).

Two groups of 12 pupils at Olympic Reserve Sports School for Children and Teenagers "T.V. Petrosian Chess Club" (Moscow) and at Olympic Reserve Sports School for Children and Teenagers №3 (Nizhniy Novgorod) participated in the experiment. The parallel analytical experiment was controlled with a series of five tests formed by time slices (every 6 months). A typical growth of average values in the group of test results exemplified by the "Strategy" tests is shown in Fig.1.

The synergetic effect of employing both the textbook "Thinking in Schemes" and the training computer program "Strategy" allowed to solve the most important tasks of the sports improvement stage: ensure a high level mastery of chess techniques, promptly correct the mistakes made at the preceding stages, and develop the strategic thinking of young chess players. This made possible to control the level of development of strategic mastery and the current state of a sportsman's form. In our view, the electronic textbook "Thinking in Schemes" is efficient in forming the strategic thinking of chess players, essentially complementing chess software with the usage, while preparing examples, of World Champions' games as the standard model.