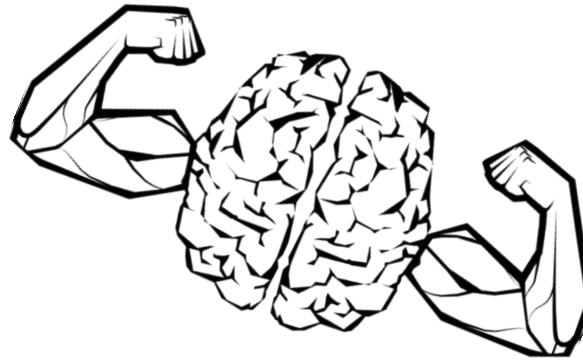


# INCREASE YOUR INNER STRENGTH

## 5TH WORKSHOP: **CAPABILITIES**

dr. Jana Krivec



*We have to explore our inner universe...  
not because it's easy, but because it's hard...  
and makes your life better*



Commission for Women's Chess

Copyright © 2022. All rights reserved.



*"In all chaos there is a cosmos, in all disorder a secret order."*

(Carl G. Jung, psychologist and psychoanalyst)



## Key takeaways

- Put some effort when encoding information so that you will spare the effort and efficiency of its retrieval
- When encoding information always search for meaningful patterns
- When memorizing information, try to make as many associations with existing knowledge as possible

# A FRAGMENT OF THE CHESS ENCYCLOPEDIA

This is a picture of a tiny part of the material that a chess player has to include in his knowledge base.

269

C 57

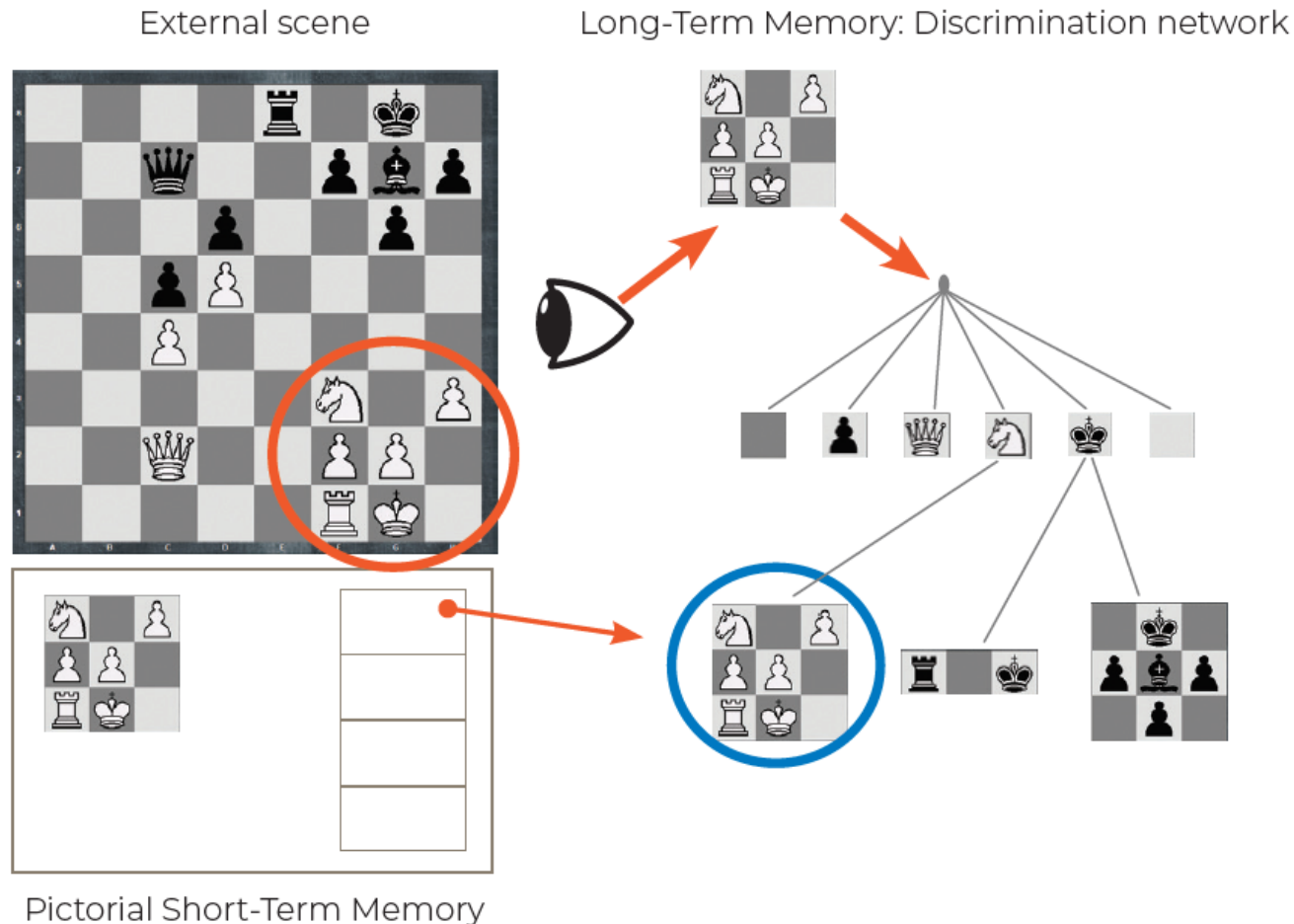
	6	7	8	9	10	11	12	13	14	
13	♖c3 <sup>61</sup>	♗f3 <sup>63</sup>	♘e2 <sup>65</sup>	♗f3	0—0	♙e1	a3	dc3	♙f3	
	h6 <sup>62</sup>	♘g4 <sup>64</sup>	♗f3	♗b4	0—0	♙e8	♗c3	♗f3	♙d5	±
14	c3	♗f1 <sup>67</sup>	♗f7 <sup>68</sup>	cd4	♗b5 <sup>70</sup>	♙e2	♗e2	♗c4	♗e6	±
	b5 <sup>66</sup>	♗d5	♙f7	ed4 <sup>69</sup>	♙e7	♙e2	♗b4	♗e6 <sup>71</sup>	♙e6 <sup>72</sup>	±
15	...	...	h4	♗e4 <sup>74</sup>	♗b5	♙a4	d4	♙e2	♗f4	=
	...	...	h6 <sup>73</sup>	♗e6	♗d7	♗df4 <sup>75</sup>	♗g2	♗gf4	♗f4 <sup>76</sup>	=
16	...	...	cd4	♗b5 <sup>77</sup>	♙f3	♗c3 <sup>79</sup>	0—0 <sup>80</sup>	♙h3	♗e2	=
	...	...	♙g5	♗d8	♗b7 <sup>78</sup>	ed4	♙f4 <sup>81</sup>	♗f6	♙e5 <sup>82</sup>	=
17	...	...	♗e4	♗b5	♗d7 <sup>84</sup>	0—0 <sup>85</sup>	d4	cd4	♗bc3	±
	...	...	♗e6 <sup>83</sup>	♗d7	♙d7	♗e7	ed4	0—0 <sup>86</sup>	♗ad8 <sup>87</sup>	±

1. 4... ♗e4?! 5. ♗f7 [5. ♗f7 ♙h4] ♙e7  
6. d4! d5 [6... h6 7. ♗e4 ♙f7 8. de5 ♙e8 9.  
f4 d6 10. 0—0±] 7. ♗c3! ♗c3 8. bc3 ♙d6  
[8... ♗f5 9. ♙f3±] 9. a4! ♗d8 10. ♗g8 ♙e8  
11. ♗h7±

♗f7 ♙f8 12. ♙h1 [12. ♗c3 ♙f2 13. ♙h1  
♙e4 13. ♙g1 ♗e2! 14. ♗f2 ♙h4 15. ♙f1  
♙h3 16. ♙e2 ♙g4=

# HUMAN INFORMATION PROCESSING

Example of a chunk from CHREST program, simulating human information processing in the game of chess, which is based on a Template theory (Gobet & Simon, 1996).



## FINDING PATTERNS

Patterns are everywhere. **Meaningful patterns of information or chunks are essential to understand and store any type of data.**

*"I love to play chess. The last time I was playing, I started to really see the board. I don't mean just seeing a few moves ahead - something else. My game started getting better. It's the patterns. The patterns are universal."*

(Forest Whitaker, actor)

# LOOKING FOR PATTERNS

You have 2 seconds. Try to remember this:  
*B B C B M W F B I C N N*

Now try to remember this:  
*BBC BMW FBI CNN*

**What is the difference?**

Now, when we know the way, let's do a "miracle"  
and remember all these numbers in few seconds:

190019141918193919452000

# EXERCISE: TRY TO REMEMBER THE WINNING COMBINATION

Black to move wins. Can you find the combination? Can you remember it?



Stockfish 13+ NNUE  
v lokálnem brskalniku

1. d4 f5 2. c4 ♟f6 3. ♟c3 e6 4. ♟f3 d5 5. e3  
c6 6. ♟d3 ♟d6 7. O-O O-O 8. ♟e2 ♟bd7  
9. ♟g5 ♟xh2+ 10. ♟h1 ♟g4 11. f4 ♟e8  
12. g3 ♟h5 13. ♟g2

FEN r1b2rk1/pp1n2pp/2p1p3/3p1pNq/2PP1Pn1/3BP1P1/PP2N1Kb/R1BQ1R2 b -- 2 13

*"The only way to get smarter is by playing a smarter opponent."*

(Fundamentals of Chess; 1885. Source: [www.reddit.com](http://www.reddit.com) )



## Key takeaways

- It is good to find a role model and to understand what he is doing for his success
- Comparison of oneself to masters needs to be in a positive way

*"Live, lose, and learn, by observing your opponent how to win."*

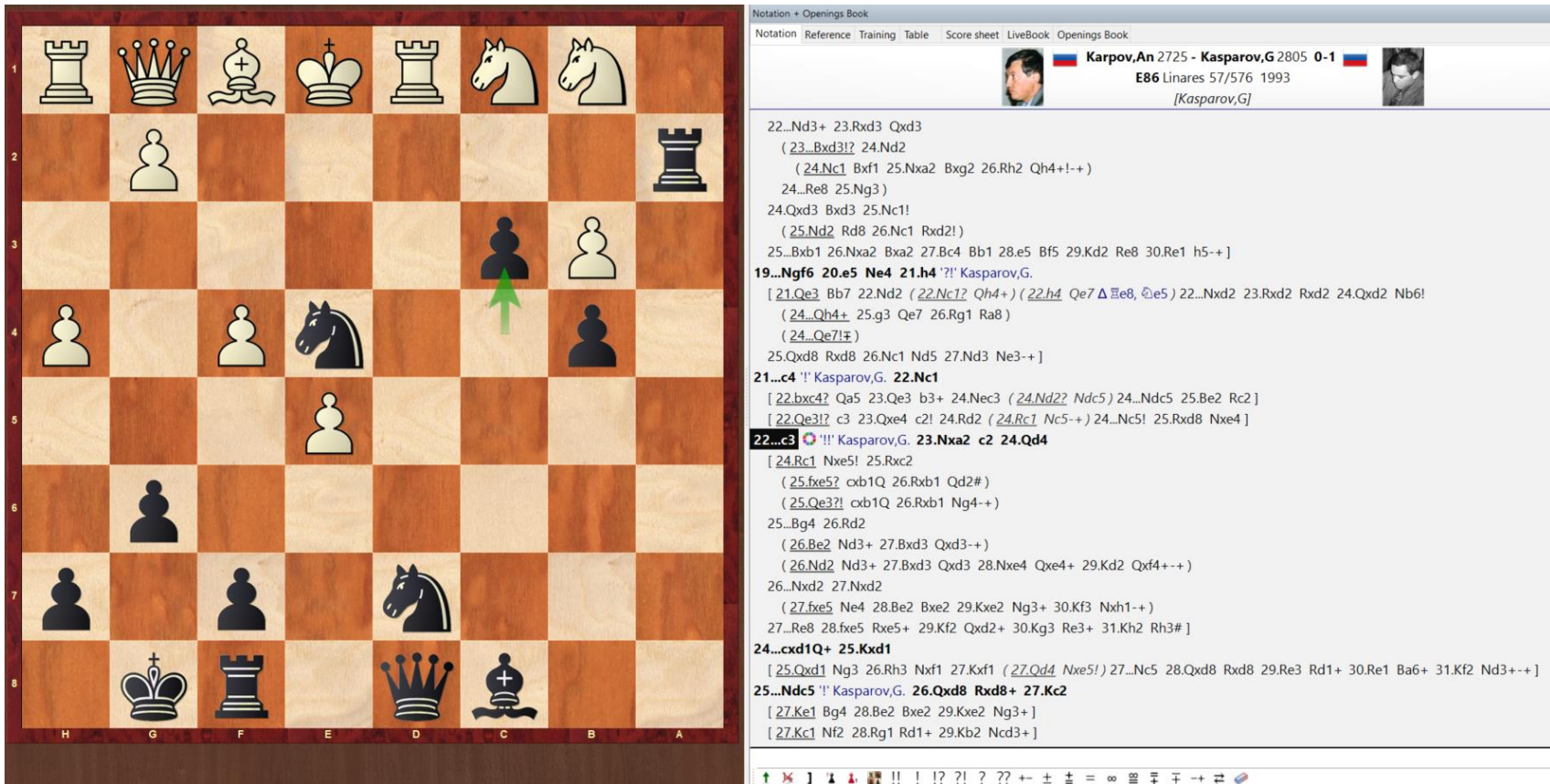
(Amber Steenbock)



## **The steps of a successful modelling include** (Excellenceassured, 2019):

- Finding the experts, we want to model and the contexts in which they apply the capability to be modelled.
- Gathering up the relevant information from different perceptual positions.
- Decomposition of the task into meaningful parts.
- Filtering of the information gained from experts according to relevant cognitive and behavioral patterns that reflect the defined parts.
- Organization of the patterns into a logical, coherent structure or model.
- Testing the effectiveness/usefulness of the model you have constructed by trying it out in various contexts and situations, and making sure you are able to achieve the desired results.
- Reduction of the model to the simplest and most elegant form that will still produce the desired results.
- Identification of the best procedures to transfer, or ‘install’ the explicit skills identified by the modelling process.
- Determine the most appropriate tools to measure the results of the model and find the limits or “edge” of the validity of the model.

# LEARNING CHESS FROM A WORLD CHAMPION



The image displays a chessboard and a game interface. The chessboard shows a position from the Karpov-Kasparov match. A green arrow points to the black pawn on c3, indicating a move. The game interface on the right shows the game details: Karpov, An 2725 - Kasparov, G 2805 0-1, E86 Linares 57/576 1993. The game notation is displayed, including moves like 22...Nd3+, 23.Rxd3 Qxd3, and 24.Nc1. The interface also includes a score sheet, live book, and openings book.

Notation + Openings Book  
Notation Reference Training Table Score sheet LiveBook Openings Book

Karpov, An 2725 - Kasparov, G 2805 0-1  
E86 Linares 57/576 1993  
[Kasparov, G]

22...Nd3+ 23.Rxd3 Qxd3  
( 23...Bxd3!? 24.Nd2  
( 24.Nc1 Bxf1 25.Nxa2 Bxg2 26.Rh2 Qh4+!-+ )  
24...Re8 25.Ng3 )  
24.Qxd3 Bxd3 25.Nc1!  
( 25.Nd2 Rd8 26.Nc1 Rxd2! )  
25...Bxb1 26.Nxa2 Bxa2 27.Bc4 Bb1 28.e5 Bf5 29.Kd2 Re8 30.Re1 h5-- ]  
**19...Ngf6 20.e5 Ne4 21.h4 ?!** Kasparov, G.  
[ 21.Qe3 Bb7 22.Nd2 ( 22.Nc1? Qh4+ ) ( 22.h4 Qe7 Δ Ee8, Qe5 ) 22...Nxd2 23.Rxd2 Rxd2 24.Qxd2 Nb6!  
( 24.Qh4+ 25.g3 Qe7 26.Rg1 Ra8 )  
( 24...Qe7!+ )  
25.Qxd8 Rxd8 26.Nc1 Nd5 27.Nd3 Ne3-+ ]  
**21...c4 ?!** Kasparov, G. **22.Nc1**  
[ 22.bxc4? Qa5 23.Qe3 b3+ 24.Nec3 ( 24.Nd2? Ndc5 ) 24...Ndc5 25.Be2 Rc2 ]  
[ 22.Qe3! c3 23.Qxe4 c2! 24.Rd2 ( 24.Rc1 Nc5-+ ) 24...Nc5! 25.Rxd8 Nxe4 ]  
**22...c3 ?!** Kasparov, G. **23.Nxa2 c2 24.Qd4**  
[ 24.Rc1 Nxe5! 25.Rxc2  
( 25.fxe5? cxb1Q 26.Rxb1 Qd2# )  
( 25.Qe3?! cxb1Q 26.Rxb1 Ng4-+ )  
25...Bg4 26.Rd2  
( 26.Be2 Nd3+ 27.Bxd3 Qxd3-+ )  
( 26.Nd2 Nd3+ 27.Bxd3 Qxd3 28.Nxe4 Qxe4+ 29.Kd2 Qxf4++ )  
26...Nxd2 27.Nxd2  
( 27.fxe5 Ne4 28.Be2 Bxe2 29.Kxe2 Ng3+ 30.Kf3 Nxe1-+ )  
27...Re8 28.fxe5 Rxe5+ 29.Kf2 Qxd2+ 30.Kg3 Re3+ 31.Kh2 Rh3# ]  
**24...cxd1Q+ 25.Kxd1**  
[ 25.Qxd1 Ng3 26.Rh3 Nxf1 27.Kxf1 ( 27.Qd4 Nxe5! ) 27...Nc5 28.Qxd8 Rxd8 29.Re3 Rd1+ 30.Re1 Ba6+ 31.Kf2 Nd3-+ ]  
**25...Ndc5 ?!** Kasparov, G. **26.Qxd8 Rxd8+ 27.Kc2**  
[ 27.Ke1 Bg4 28.Be2 Bxe2 29.Kxe2 Ng3+ ]  
[ 27.Kc1 Nf2 28.Rg1 Rd1+ 29.Kb2 Ncd3+ ]

Karpov – Kasparov, Linares 1993

*"Chess demands total concentration."*

(Bobby Fischer, world chess champion)

## Key takeaways

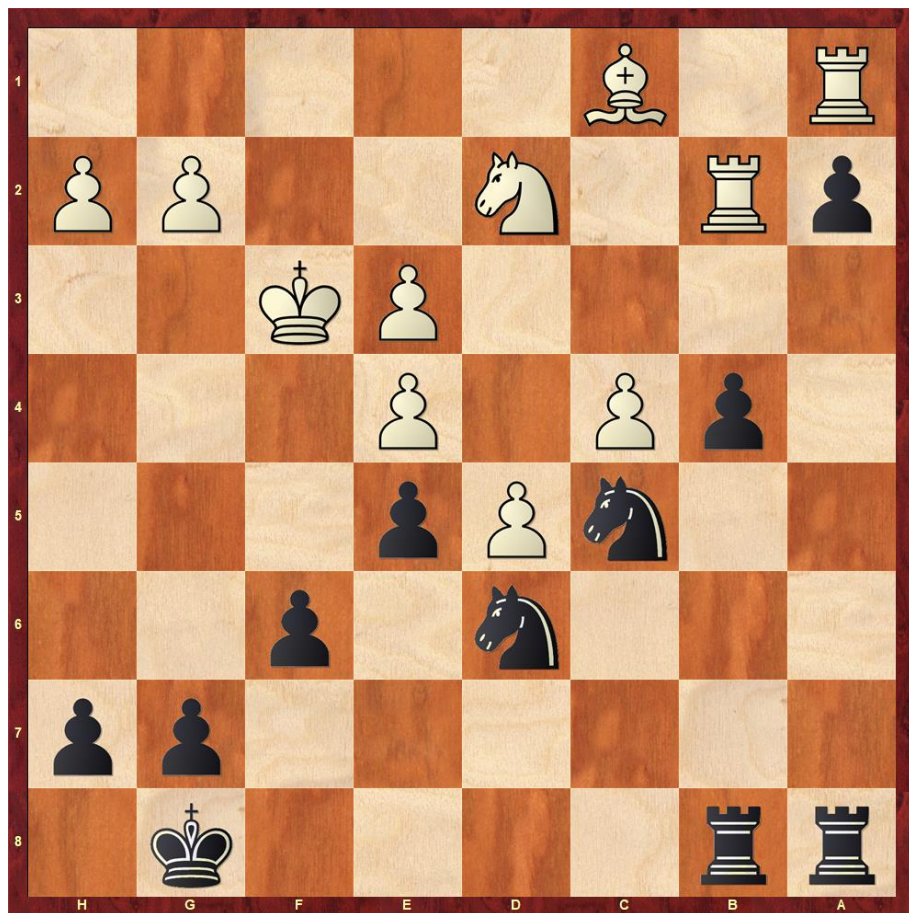
- Attention is like a light that we can direct wherever we want to
- Concentration is the ability to maintain attention for as long as we want
- Find your FLOW state
- Do not forget to look from above and see the whole picture
- Stay focused until the game is over

*"One bad move nullifies forty good ones."*

(Horowitz, pianist)



# FOCUS AND CONCENTRATION



A. Muradyan vs. T. Guid, EU-Ch U-12 girls, 2019

Position after 29.Rb1-b2

Black to move. What would you play here?

Most players would rush to get a piece with 1...Nd3.

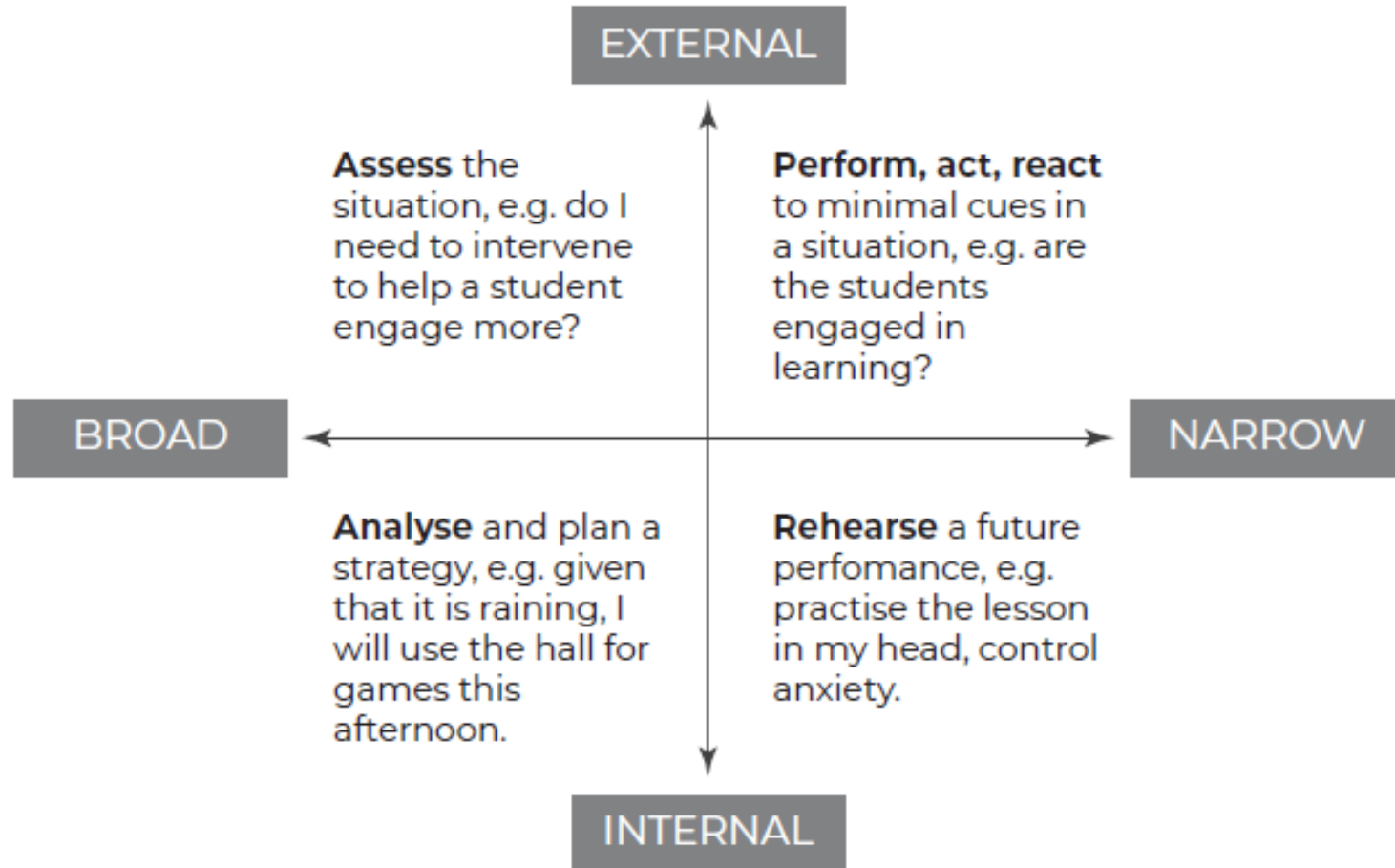
This is not the best move. Better would be to have patience and play the move b3, keeping the strong passed pawns structure. Black can bring the king closer and only then start decisive actions.

In the game, the youngster chose the material and played 29...Nd3. The game continued 30.Ra2 Ra2 31.Ra2 Nc1 32.Ra6 Ne8 33.c5 b3 34.d6 b2 35.d7 Nc7 36.Rc6

White is already better and Black eventually lost the game.



# NIDEFFER'S MODEL OF ATTENTION AND NEUROFEEDBACK



What is concentration, focus, attention? Imagine that our attention is like a spotlight. Where we direct it, we can see all the details, remember them and process them.

# FOCUS ON THE PROCESS... ENTER THE “FLOW”

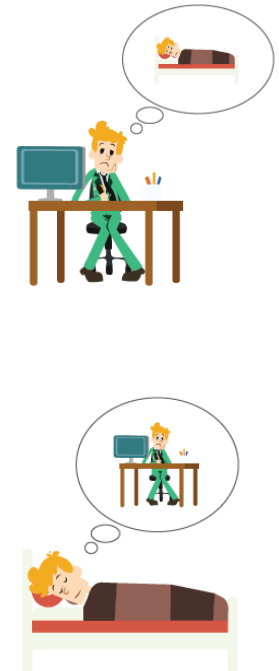


When it comes to competition, we should focus exclusively on this event. We have to put aside things that don't belong on the playing field.

**Usually it is good to FOCUS ON THE PROCESS and not on the results.**

**FLOW:** “You can turn any activity into meditation simply by being completely with it and doing it just to do it. And instead of calling it work, realize it is play.”  
(Watts, 1974).

Chess players are completely in the game. Alan W. Watts (1977) calls such a state a FLOW... In a game of chess, you cannot only be partially engaged. It sucks you in completely. You don't see the surroundings, you forget time and other needs and thoughts.



MINDFUL, OR MIND FULL?

# TESTING YOUR CONCENTRATION

How many times did people in white t-shirts pass the ball to each other:

<http://www.youtube.com/watch?v=vJG698U2Mvo>

Attention span test: <https://www.psychologytoday.com/us/tests/personality/attention-span-test>

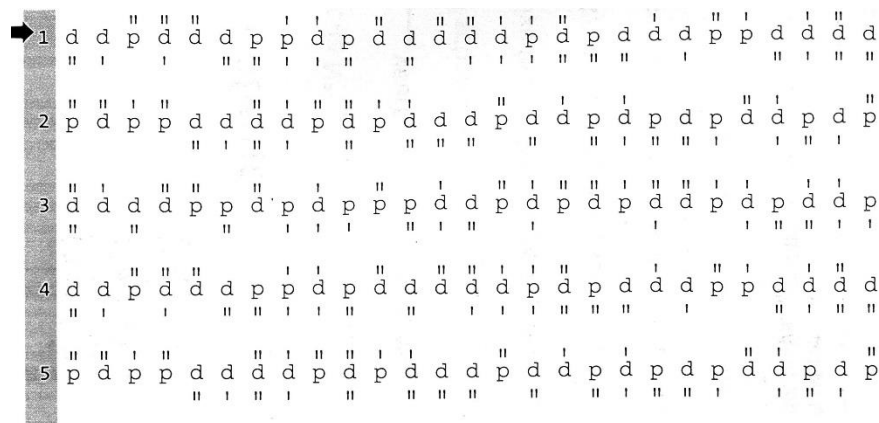
Distraction filtering test:

<http://www.nytimes.com/interactive/2010/06/07/technology/20100607-distraction-filtering-demo.html>

Task switching test:

<http://www.nytimes.com/interactive/2010/06/07/technology/20100607-task-switching-demo.html>

D2 attention test



# EXERCISE: FIND ANIMALS



## ANIMALS



AARDVARK  
BABOON  
BEAR  
BEAVER  
BIRD  
CAMEL  
CAT  
DOG

ELEPHANT  
EMU  
FROG  
HORSE  
LION  
LIZARD  
MEERKAT  
MONKEY

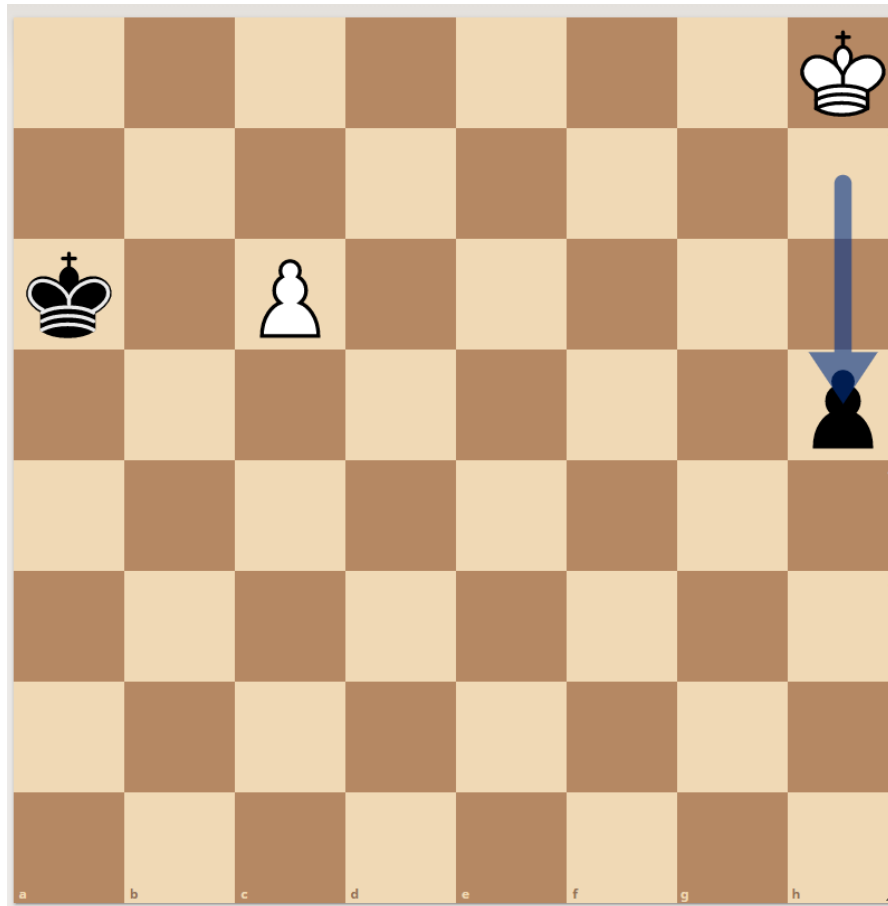
OWL  
PENGUIN  
REINDEER  
TIGER  
TURTLE  
VULTURE  
WALLABY  
WOLF  
ZEBRA

You can train your focus, searching the animals from the list below or even better, try to find all the animals without reading the list.



## EXERCISE: STOP THE PAWN

White to move. Can you stop the Black pawn and draw the game?



# EXERCISE: STOP RUMINATING NEGATIVE THOUGHTS

Refocus your attention  
Use STM for something  
else

R = Raise Right Arm

L = Raise Left Arm

T = Raise Both Arms Together

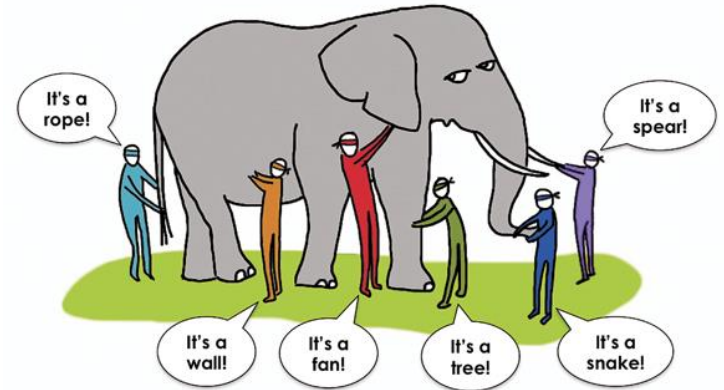
## THE ALPHABET GAME CHART

<b>a</b> l	<b>b</b> r	<b>c</b> t	<b>d</b> t	<b>e</b> l
<b>f</b> r	<b>g</b> l	<b>h</b> t	<b>i</b> r	<b>j</b> t
<b>k</b> l	<b>l</b> r	<b>m</b> t	<b>n</b> l	<b>o</b> r
<b>p</b> l	<b>q</b> t	<b>r</b> l	<b>s</b> l	<b>t</b> t
<b>u</b> l	<b>v</b> l	<b>w</b> t	<b>x</b> r	<b>y</b> t

# SEE THE WHOLE PICTURE

*"Our greatest strength is the ability to absorb and synthesize patterns, methods and information. Intentionally inhibiting that ability by focusing too narrowly is not only a crime, but one with few rewards."*

(Garry Kasparov, former world chess champion)



*"Once we have thoroughly absorbed the known we can step back from it confidentially, step back far enough to see the big picture. From there we can see new paths and make new connections. New relevancies appear, old information seems fresh."..."Seeing the big picture means much more than simply acquiring more information. We must see how the information is connected as well as how our own actions are connected."*

Gary Kasparov, former world chess champion

# CREATIVE THINKING AND FLEXIBILITY



*"Creativity requires the courage to let go of certainties."*

(Eric Fromm, psychoanalyst)

## Key takeaways

- Think outside the box. Remember, that "outside" doesn't mean a "bigger box", but unlimited space of ideas
- Some problems are not solvable with narrow minded logic, but require a new, creative approach
- Be flexible in your thoughts and actions. You will optimize your adaptation to the environment and increase your "chances of survival"



*"It's not about being an inventor, with an occasional flash of creativity, but about being innovative in your decision-making process all the time".*

Garry Kasparov, former world chess champion



*"I believe every chess player senses beauty, when he succeeds in creating situations, which contradict the expectations and the rules, and he succeeds in mastering this situation."*

Vladimir Kramnik, former world chess champion

*Intelligence can take you from point A to point B, creativity can take you everywhere.*  
(Albert Einstein)

**"CREATIVITY  
IS  
INTELLIGENCE  
HAVING FUN."**

Creativity is a phenomenon in which something new and somehow valuable arises, mostly on the basis of the existing knowledge base.

# FLEXIBILITY VS. CONSISTENCY

*"Life is like a game of chess changing with each move."*

(Chinese proverb)



*"We must walk a fine line between flexibility and consistency. A strategist must have faith in his strategy and the courage to follow it through and still be open-minded enough to realize when a change of course is required" and find a creative new path."*

Garry Kasparov, former world chess champion

## A minute for self-reflection



What do you see in the picture? <sup>11</sup>

Be flexible and try to change the perspective of your perception.

## EXERCISE: CHANGE PERSPECTIVE



16

06

68

88



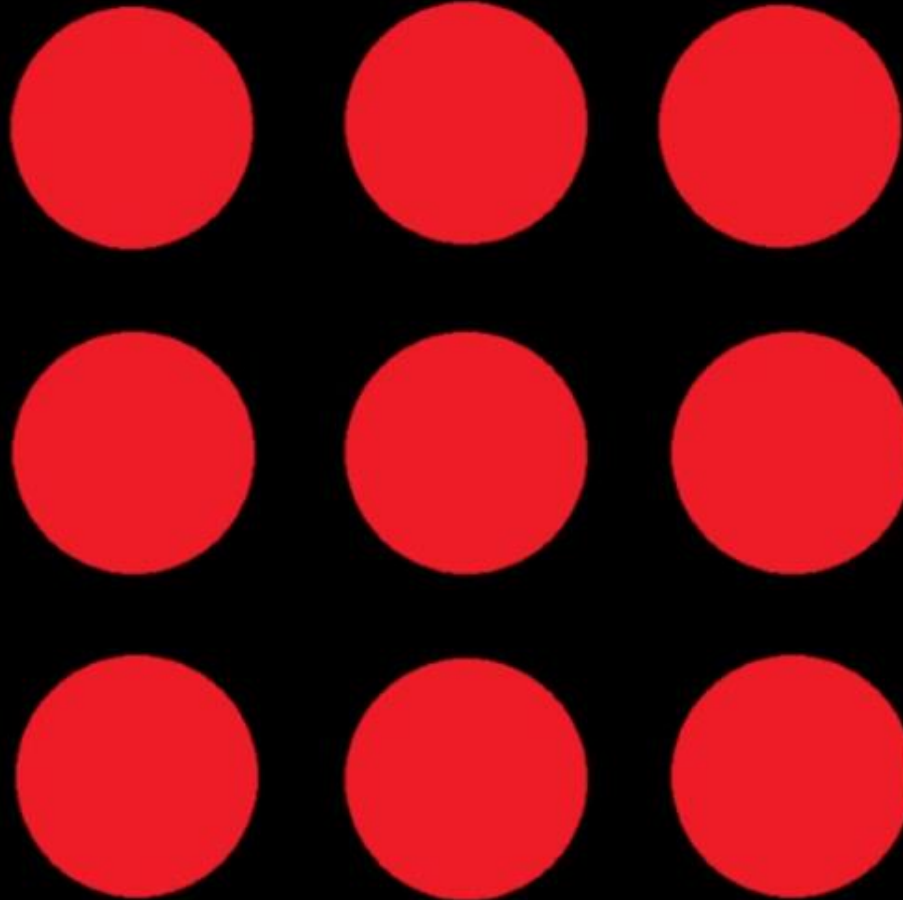
98

WHAT PARKING LOT IS THE CAR PARKED IN ?



## EXERCISE: THINK OUTSIDE THE BOX

**connect the dots  
with no more  
than 4 straight  
lines without  
lifting your hand  
from the paper.**

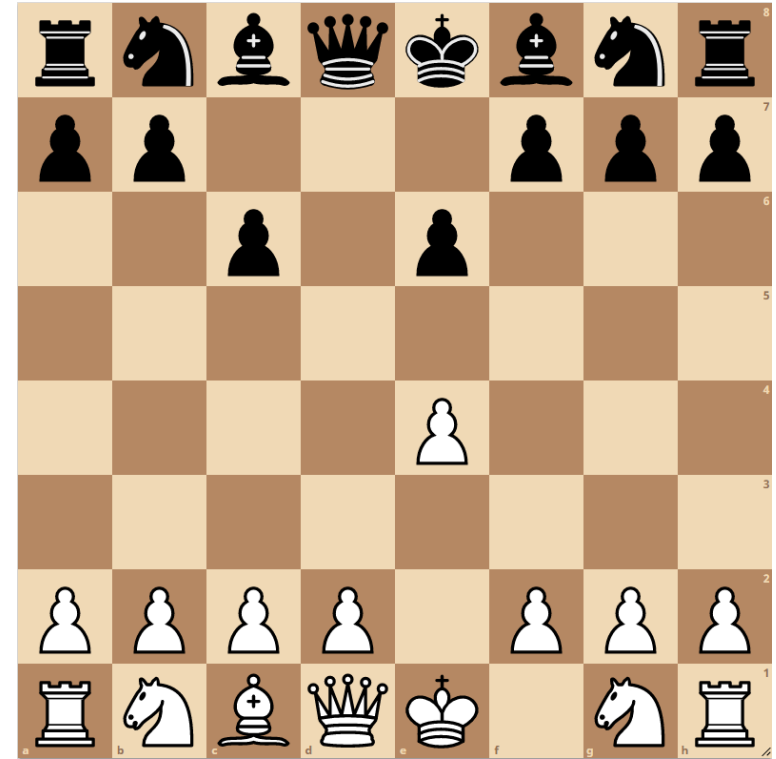


# EXERCISE: RECONSTRUCT THE GAMES



From the initial position, this position occurred after four moves by each player.

How?

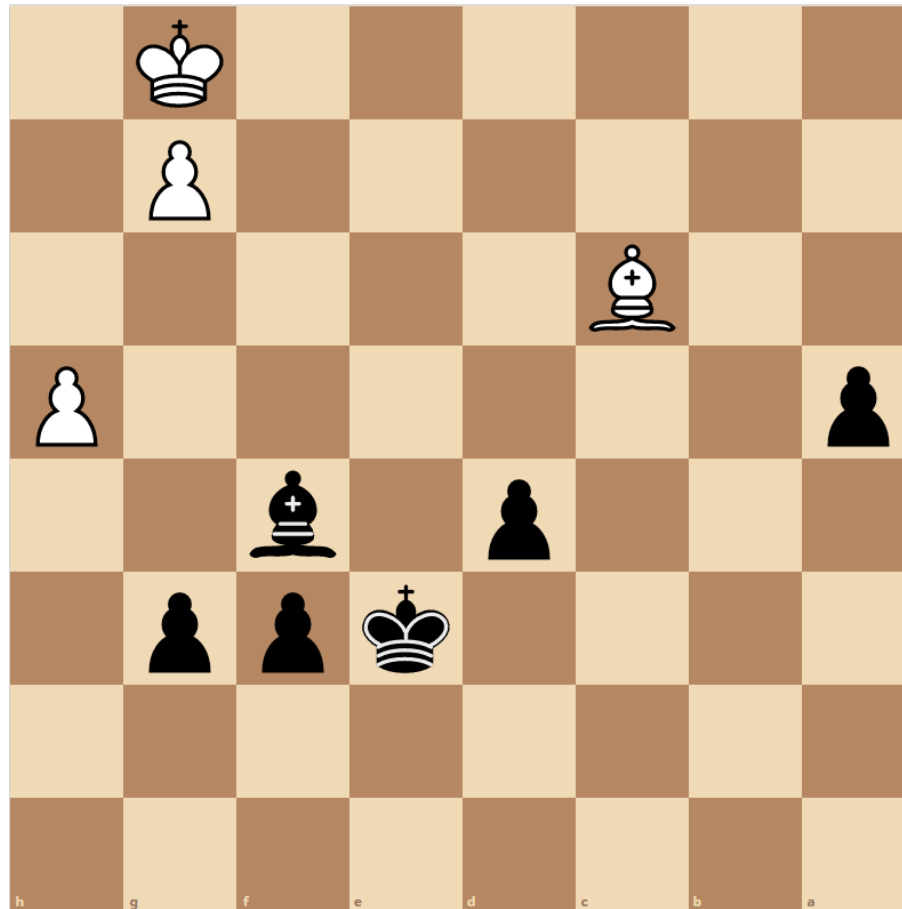


From the initial position, this position occurred after four moves by each player.

How?

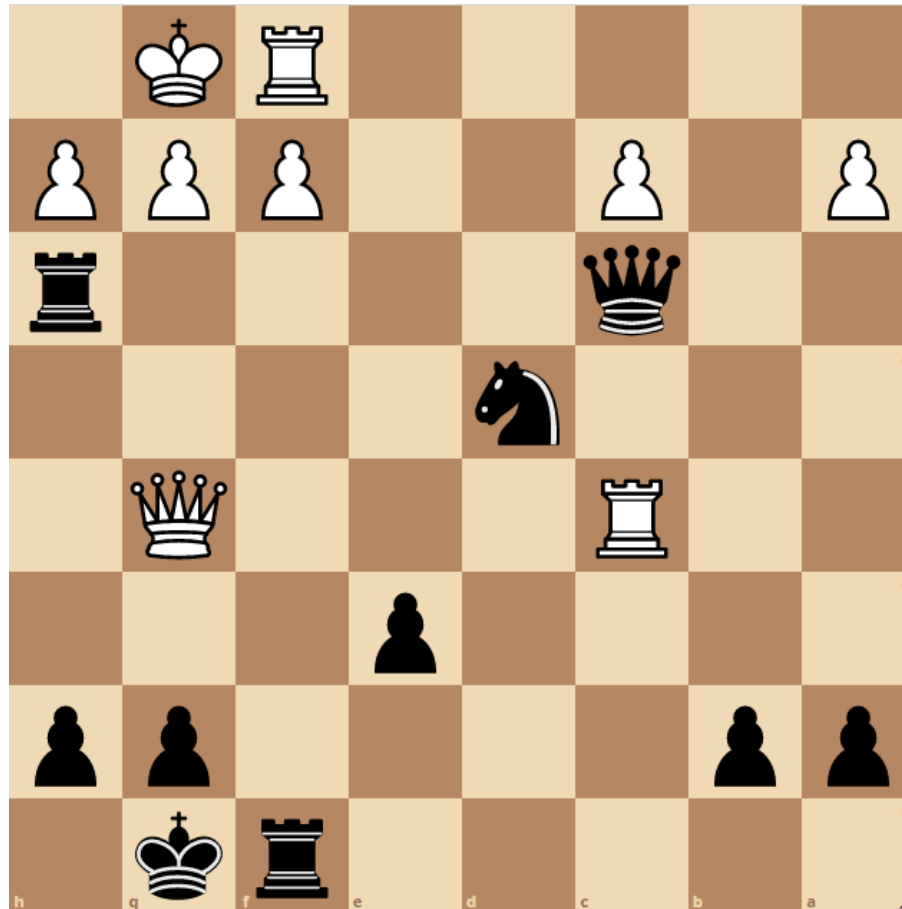


Black to move. What would you play?



Topalov - Shirov, Linares 1998

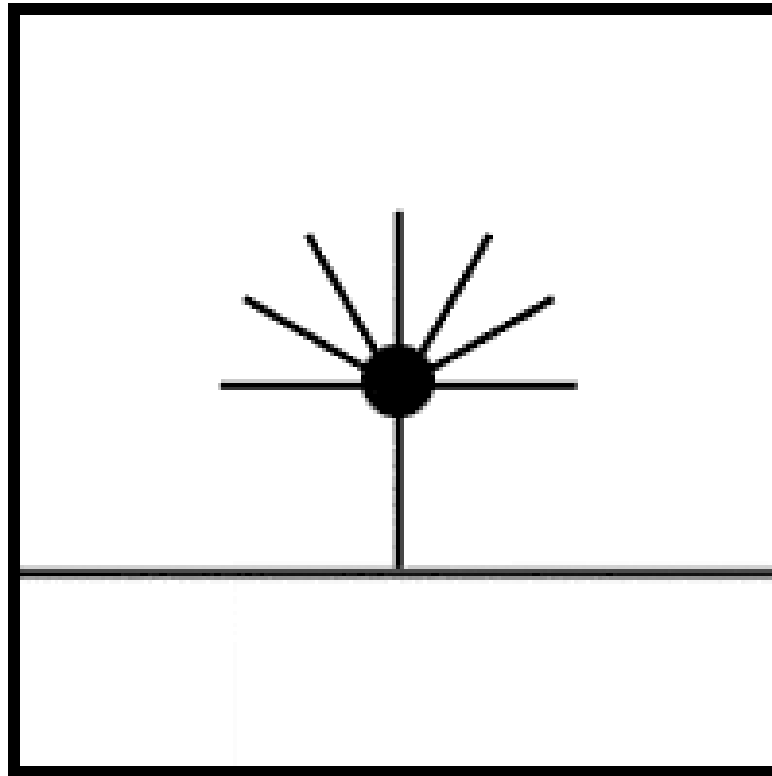
Black to move. What would you play?



Levitzky - Marshall, Breslau 1912

# DROODLES

What do you see? Name as many possibilities as you can.



# GUESS MY THOUGHTS

Try to enter my brain and find out what three numbers I chose to open my 3-digit keylock that opens the box of cookies.


**1st HINT:** combine things



# GAMES LIKE CHESS: CRAZYHOUSE 😊



FEN 1R5r/1pp2pppp/p1b1p3/1k6/PbN1PNp1/1N1P4/1PP2PKP/RZR4/BQPbqn b - - 0 27



Stockfish 11+ HCE  
v lokalnem brskalniku

7... ♞c4 ♞d6 [...]

8. ♞e2? Mistake. Be3 was best. (8. ♞e3) ♞g4?? Blunder. P@h3 was best. (8... @h3 9. ♞xh3) 9. O-O e6 10. d5? Mistake. P@d7+ was best. (10. @d7+) O-O-O? Mistake. exd5 was best. (10... exd5 11. ♞g5) 11. dxc6 ♞xd1?! Checkmate is now unavoidable. Bd6 was best. (11... ♞d6 12. @a7) 12. cxb7+?! Lost forced checkmate sequence. Rxd1 was best.

12. ♞xd1 ♞d6 13. ♞@a8+ [...]


12... ♞xb7 13. ♞@a5+ ♞b6 14. ♞xd1 ♞xa5 15. ♞@b8 @b7 16. @d3? Mistake. Bd2+ was best. (16. ♞d2+) ♞c6? Mistake. Qxe2 was best. (16... ♞xe2 17. ♞xe2) 17. ♞d4?? Checkmate is now unavoidable. Bd2+ was best. (17. ♞d2+ ♞b6)


17... ♞xg2?? Lost forced checkmate sequence. N@h3+ was best.

17... ♞@h3+ 18. ♞xh3 ♞xg2+ [...]

18. ♞xg2 @f3+ 19. ♞xf3 ♞xf3+ 20. ♞xf3 ♞@c6 21. @e4 @g4?! Checkmate is now unavoidable. Bb4 was best. (21... ♞b4) 22. ♞d2+ ♞@b4 23. ♞xb4+ ♞xb4 24. ♞@c4+ ♞b5 25. ♞d4+ ♞c5 26. ♞b3+ ♞b5 27. a4#

1-0  
Mat, Belije zmagal

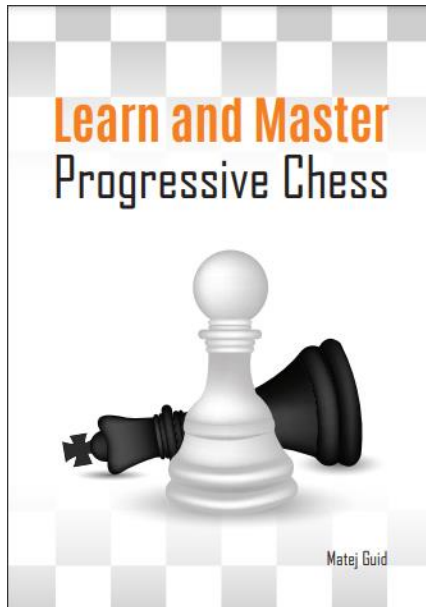




# GAMES LIKE CHESS: PROGRESSIVE CHESS

White starts with one move, black answers with two, white plays three and so on... 😊

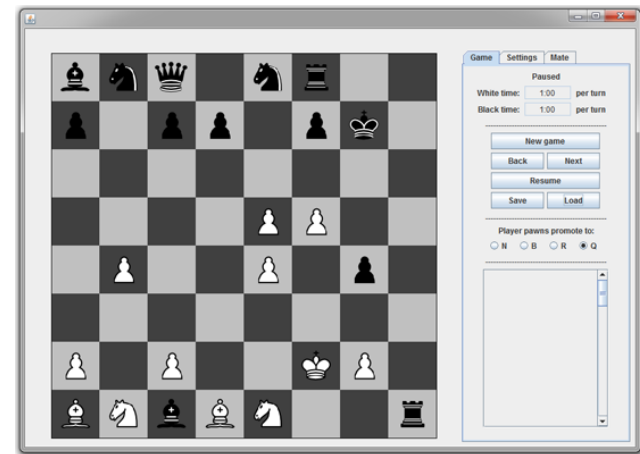
## Book



<http://zalozba.fri.uni-lj.si/guid2017.pdf>

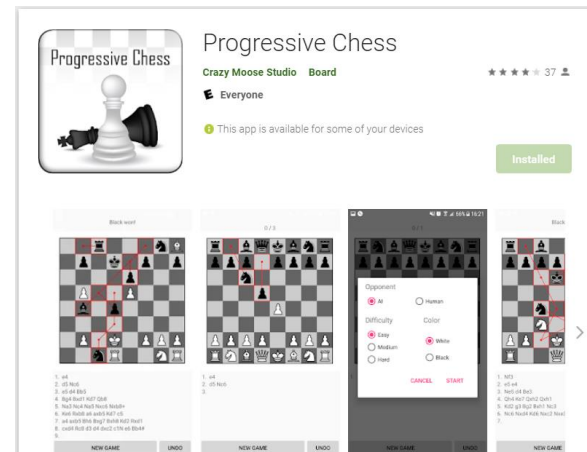
**YouTube** course by Doug Hyatt:  
<https://www.youtube.com/watch?v=YPMRbodCwYg>

## Desktop application

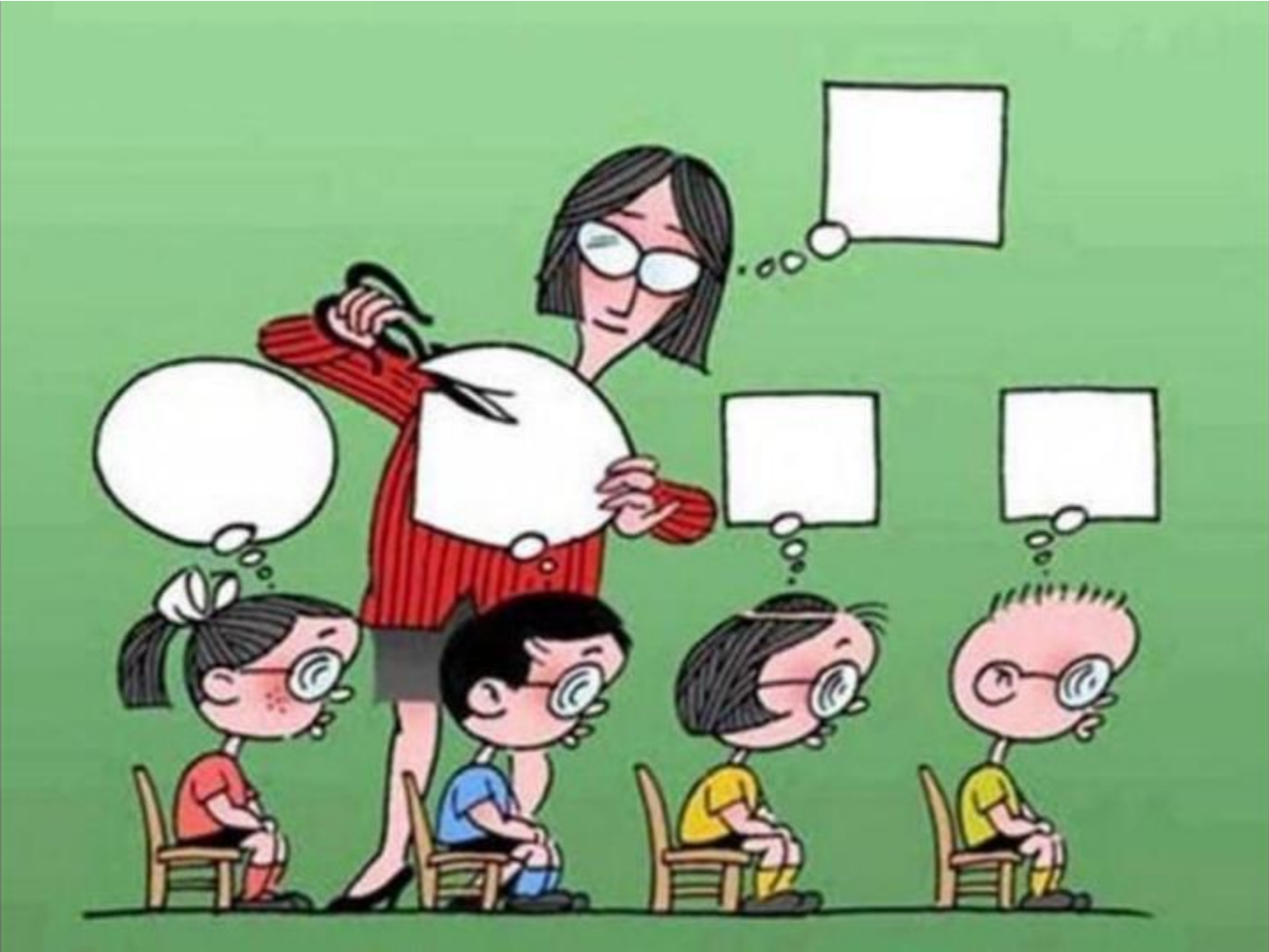


<https://ailab.si/progressive-chess/>

## Mobile application



# WE DON'T HAVE TO BE THE SAME



*"Chess is a matter of delicate judgement,  
knowing when to punch and how to duck."*

(Bobby Fischer, former world chess champion)

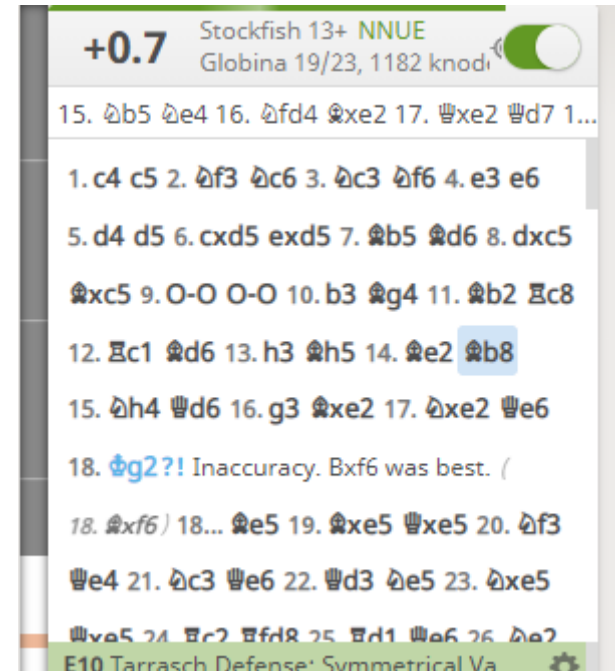
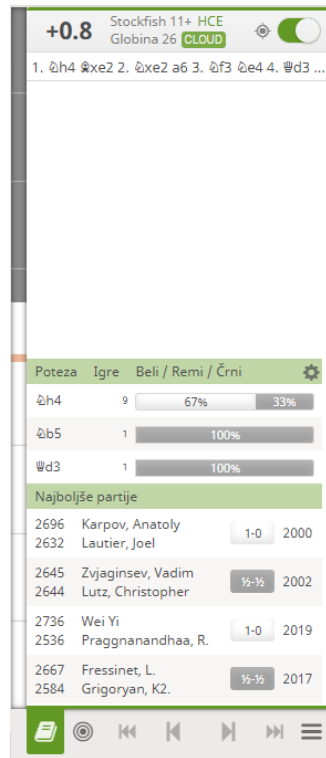


## Key takeaways

- Be aware of the SWOT analysis aspects
- Follow all steps of the decision making process: problem definition, list of possible solutions, evaluation of the proposed solutions, selection of the best solution, re-evaluation of the final solution
- In your evaluation, do not forget to be objective and do not try to deceive yourself with false assessments
- Always understand why you have made the chosen decision
- Intuition is often more correct than calculation
- Admit your mistakes rather than apologize for them



# SELECTING A CHESS MOVE



# SELECTING A CHESS MOVE

White to move. Can you find the best continuation?

**Chessboard**



**Chess player**



- Associations / pattern recognition



- Release of useless patterns and information



- Sintesis of useful patterns and information in a coherent unit



- Thinking twist/idea



- Calculation and control of the idea

# SELECTING A CHESS MOVE

## 1st step

- After each opponent's move, before each intended move, sometimes even while calculating the variants, a chess player asks himself:
  - Which move is a threat and control over which important fields has it gained?
  - What did the move ignore and did it give up control of any important square?

## 2nd step

- Evaluation of the position.

## 3rd step

- Based on the evaluation of the position, a chess player makes a plan for the further play.

## 4th step

- On the basis of the evaluation and the plan select all candidate moves that should be considered when choosing the best move.

## 5th step

- Calculate all candidate moves and based on the calculation of each move make an assessment.

## 6th step

- He selects the best move, the move with the best assessment score. When he re-check it, the move can be played.



## EVALUATION

White is slightly better. Black's d5-pawn is isolated, it is a long-term weakness.

## PLAN

White will try to exchange pieces and play against the isolated d5-pawn.

## CANDIDATE MOVES

- 15. Nf3-h4 (exchange pieces)
- 15. Nc3-b5 (control d4-square)
- 15. Qd1-d3 (finish development)

# SWOT ANALYSIS

**SWOT** stands for Strengths, Weaknesses, Opportunities, and Threats. Assessments of these aspects are used to make a proper analysis of your business and to make the most of what you've got, to your organization's best advantage. By understanding what you're lacking, and eliminating hazards that would otherwise catch you unaware, the chances of failure are reduced.



## Strengths

What do you do well?  
What unique resources can you draw on?  
What do others see as your strengths?

## Weaknesses

What could you improve?  
Where do you have fewer resources than others?  
What are others likely to see as weaknesses?

## Opportunities

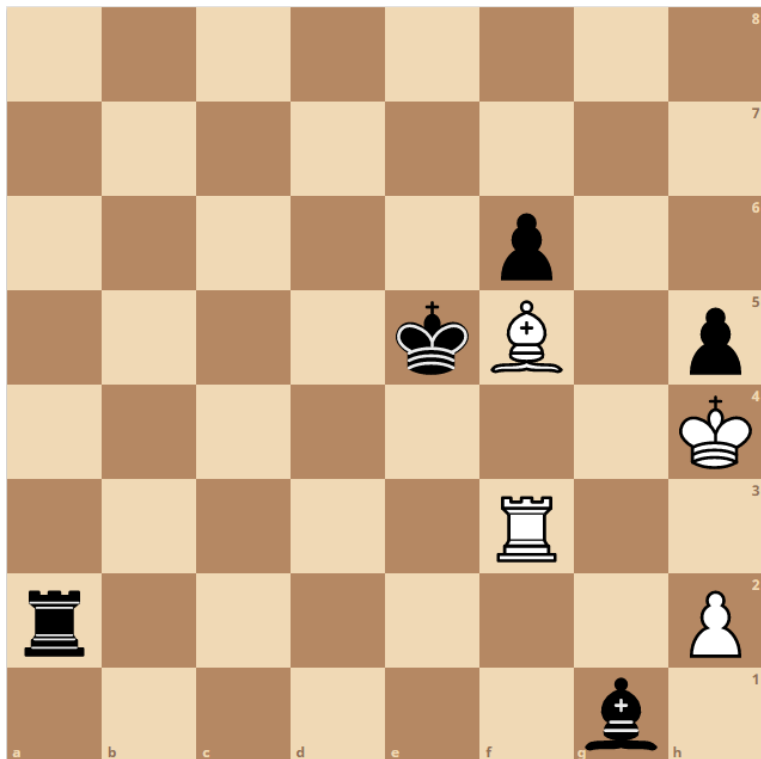
What opportunities are open to you?  
What trends could you take advantage of?  
How can you turn your strengths into opportunities?

## Threats

What threats could harm you?  
What is your competition doing?  
What threats do your weaknesses pose to you?

## EXERCISE: CANDIDATE MOVES

In chess there is often more than one possible solution that should be considered. Even in those cases where one move seems to be the only one. Take 10 seconds to evaluate the following position.



Which move did you first consider? Is there any other move that is worth considering?

I guess your first thought was 1...Ra2xh2. In this case, with opposite-colored bishops on board, there are good drawing chances.

After 1...Ra2-f2, however, White resigned immediately.

Leko, Peter (2749) vs. Kramnik, Vladimir (2766)  
Amber-blindfold 16th Monte Carlo, 2007

# DECISION MAKING

Making decisions means **taking responsibility for your own actions.**

*"A human being is a deciding being."*

(Viktor E. Frankl, psychologist and psychotherapist)

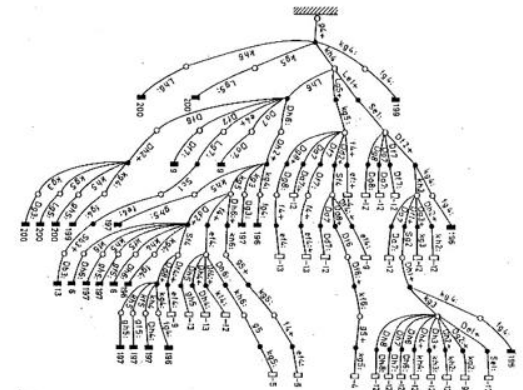
*"Avoid the crowd. Do your thinking independently.  
Be the chess player, not the chess piece."*

(Ralph Charell, writer)

**Decision making process in management.** In management, real decision making begins with thinking and ends with acting (example no. 1 in the Table). In chess, it may seem that decision equals action, but often it happens that a chess player decides to make a particular move and then begins to rethink or even play another move. In this case (example 2 in the Table) the process of decision making is not complete. Sometimes a chess player finds himself in a thinking loop (example 3) without reaching a decision or acting on it. There are cases of impulsive decision making and acting (example 4). I think this is not the same as making decisions on intuitive ground. The latter still leaves room for a thinking process in the evaluation phase. Sometimes there is only action. In chess there is a proverb saying that someone "moves the wooden blocks", which means that he plays without thinking at all (example 5).

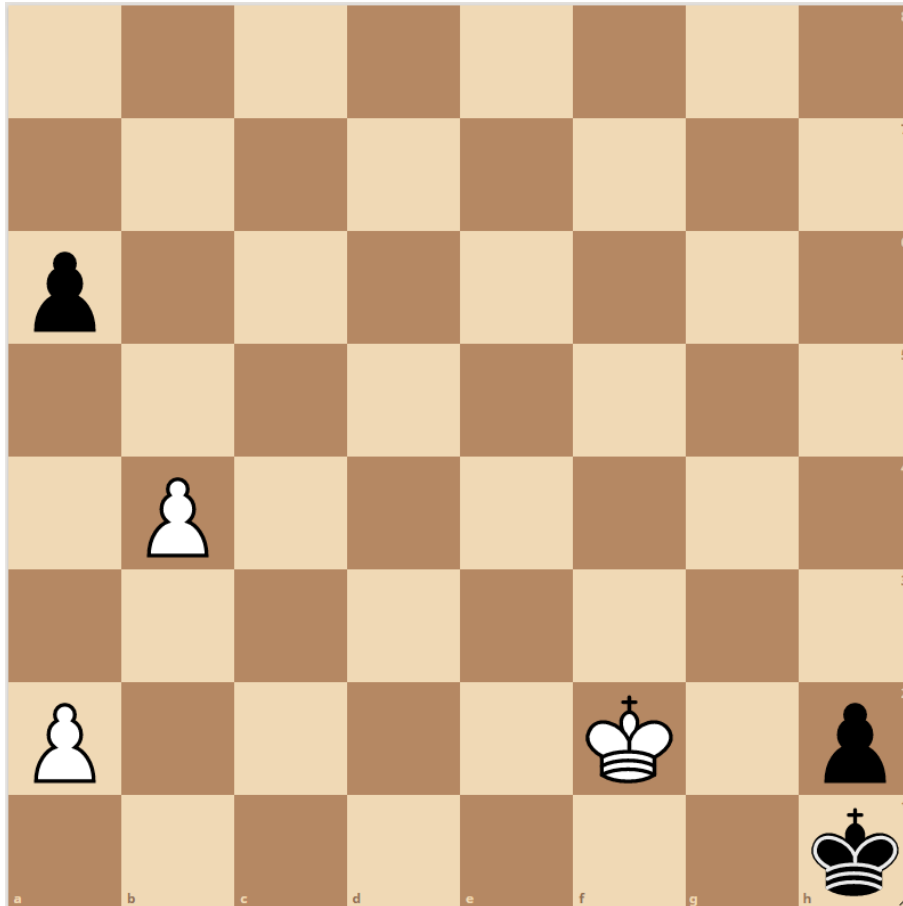
Table. Decision making process in management (Source: Pičinin, 2012, pp. 21).

Example	Thinking	Decision	Acting
1.	+	+	+
2.	+	+	-
3.	+	-	-
4.	-	+	+
5.	-	-	+
6.	-	-	-



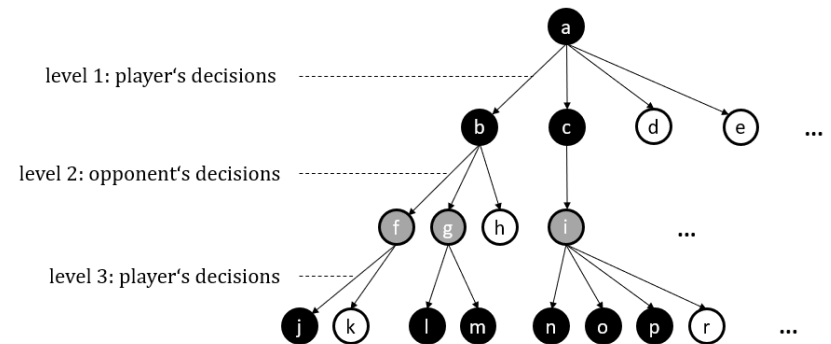
# EXERCISE: DRAW THE ANALYSIS TREE

Sometimes in order to find good candidate moves we need to have good *candidate ideas*.



Read more:  
<https://chessimprover.com/techniques-to-calculate-better-part-ii/>

**White moves and wins.** This is a position where there are no positional evaluations and only precise calculation will allow us to find the way to victory.



Construct a tree that will help you to reach the right decision.



# BELIEVE IN YOUR INTUITION...

*"Intuition - you can't ignore it and you can't explain it."*

(Agatha Christie, writer)

**Intuition** is an immediate understanding or knowing something without recourse to conscious reasoning. The intuition is the pattern-matching process that quickly suggests feasible courses of action.

*"Only our experience and instincts can combine all the objective factors into context, a complete view not only of how things works, but of why they work that way. Intuition means understanding, not just knowing. All our memories, talents and skills come together to produce what a dictionary defines as "knowing without the use of rational processes."*

(Kasparov, 2007)

We have a mechanism that connects our vast knowledge base stored in long-term memory with our current focus of consciousness. It is called intuition. Often our intuition "knows" more than we think. We must learn to trust our intuition.

In recent psychology, intuition can encompass the ability to know valid solutions to problems and decision making. Gary Klein found that *under time pressure, high stakes, and changing parameters, experts used their base of experience to identify similar situations and intuitively choose feasible solutions.* (Klein, 2003)



## ... BUT TRY TO UNDERSTAND IT

Thinking, Fast and Slow is an accessible overview of Nobel prize-winning insights from psychologists Daniel Kahneman and Amos Tversky' into **how human intuition works**.

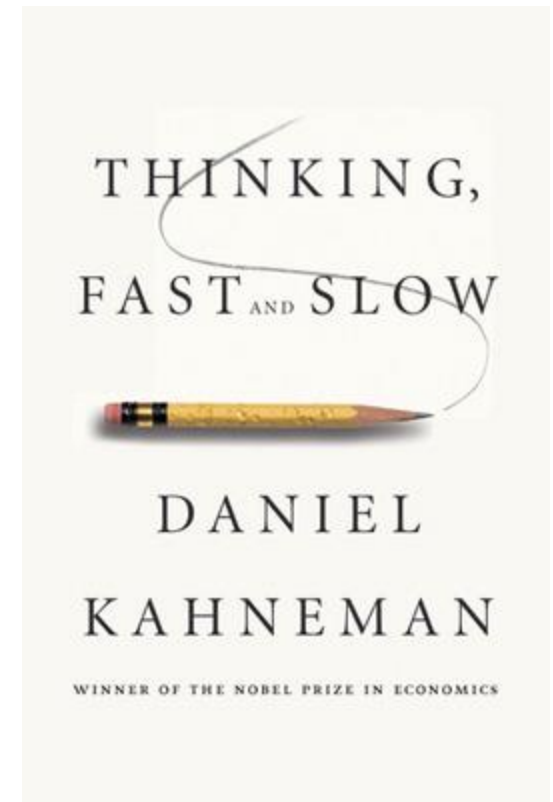
Two basic modes of thinking:

“**System 1**” thinking is *intuitive thinking* – fast, automatic and emotional – and based on:

- **heuristics**: simple mental rules of thumb
- **biases** (cognitive biases) that result in impressions, feelings and inclinations

“**System 2**” (OS 2) thinking is *rational thinking* – slow, deliberate and systematic – and based on considered evaluation that result in logical conclusions.

Read more: <https://brandgenetics.com/thinking-fast-and-slow/>

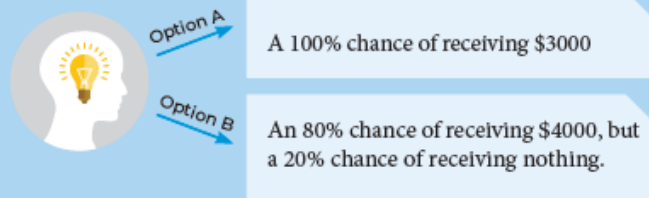


# RISK AVERSION

Kahneman and Tversky (1979) found that if a group of people are offered the choice between:

What would you choose?

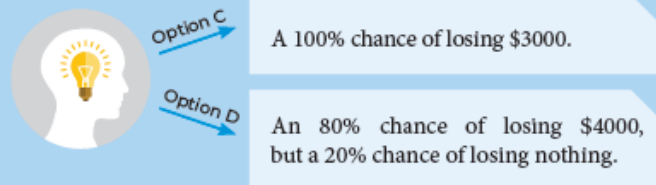
Source: pngfuel



About 80% of the subjects will choose option (a). In other words, *when it comes to making money, the average person prefers a guaranteed gain rather than gamble on the possibility of winning a greater amount of money but with a threat of getting nothing.*

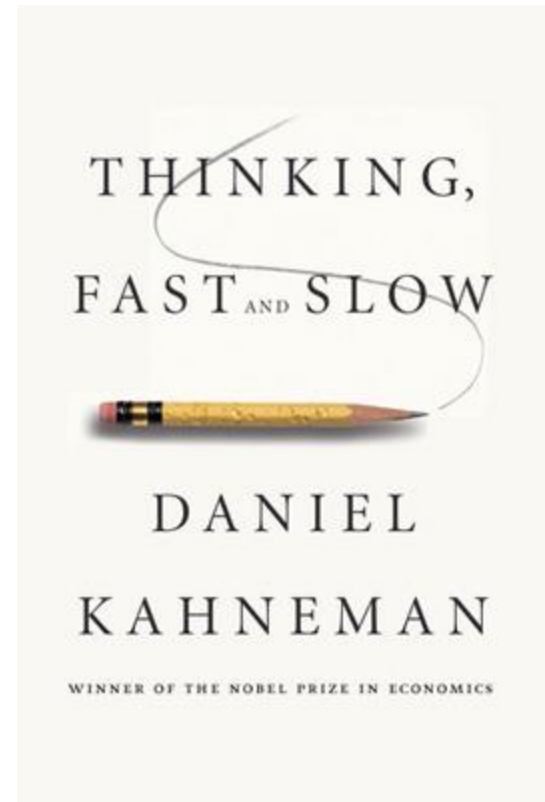
However, when given a very similar choice:

What would you choose?

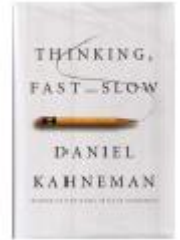


Some 92% of the subjects will choose option (d). In other words, they would *rather risk losing more money with a small chance of not losing anything.*

From a logical perspective, of course, this does not make sense. Assuming people are using the same internal maths to evaluate the risk in both cases, we should see similar results. But of course, humans are not logical. Moreover, most people are extremely poor at evaluating risk and especially threats.



## Heuristics



- **Affect Heuristic** – we intuitively think that if the decision feels good, it's the right decision (basing decisions on emotional reaction rather than a calculation of risks and benefits)
- **Anchoring Heuristic** – we intuitively think that recently acquired information is relevant when making a decision – even when it is not
- **Availability Heuristic** – we intuitively think the things we remember are more likely to happen again and that they are more important (attributed importance is based on the ease they are retrieved from memory, and this is largely determined by the extent of coverage in the media)
- **Representativeness Heuristic** – we intuitively think that different events that seem similar to us have a similar likelihood of occurrence – when often they don't
- **Commitment Heuristic** – we intuitively think that if we've already invested in a decision, we should continue to do so (AKA “endowment effect” – people justify increased investment in a decision based on the cumulative prior investment, despite new evidence suggesting that the cost, starting today, of continuing the decision outweighs the expected benefit).

## Biases (our thinking is biased...)

- **Belief Bias** –by how believable we personally find a conclusion
- **Confirmation Bias** –towards interpreting information in a way that confirms preconceptions
- **Optimism Bias** –towards being over-optimistic, overestimating favorable and pleasing outcomes
- **Hindsight Bias** –by the illusion that past events were as predictable at the time they happened as they are now.
- **Framing Effect** –by how information is presented (90% fat-free feels better than 10% fat)
- **Loss Aversion** –by an aversion to loss – eliminating the risk of losing is preferable to increasing the risk of winning (prospect theory).
- **Narrative Fallacy** –by the assumption that good stories are true stories
- **Regression Fallacy** –by not taking into account the chance component of events
- **Planning Fallacy** – our thinking tends to overestimate benefits and underestimate costs, making us more likely to engage in risky behaviour
- **Halo Effect** –by existing judgements about a person – if we judge them positively in one respect, we're likely to assume they'll be positive in another
- **The Law of Small Numbers** –by generalising from the particular – we make the assumption that a small sample is representative of a much larger population.
- **WYSIATI** –by the assumption that – What You See Is All There Is – so we discount or ignore what we don't know

Save  
the  
Date

31ST  
JULY