



Metacognitive Training (MCT)

MCT 5 A – Memory

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Memory

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- Disadvantage: ???



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- **Advantage:** Our brain is not overloaded with useless information. Mostly, irrelevant information is lost ... *but*
- **Disadvantage:** ???



Memory

- Our capacity to memorize information is limited.

Example: approximately 40% of the details of a story we have heard half an hour ago cannot be actively recalled.

- **Advantage:** Our brain is not overloaded with useless information. Mostly, irrelevant information is lost ... *but*
- **Disadvantage:** ... important information also vanishes (appointments, memories from holidays, knowledge acquired in school ...)



How can I improve my memory?

???



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- repeat & work through; **COMPREHEND**



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- drink no/little alcohol
- go to bed after learning (no further distraction)



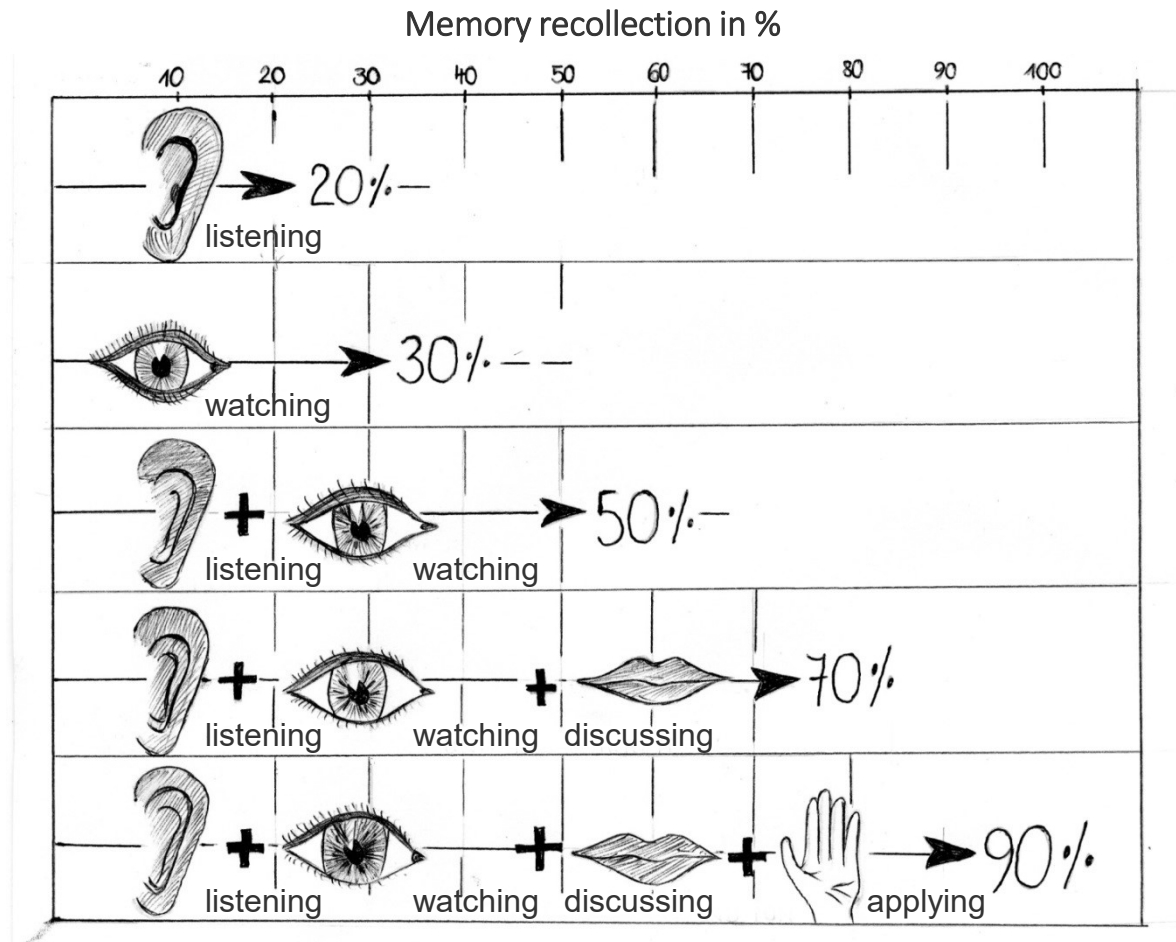
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- combine information with existing knowledge
- avoid studying too long
- drink no/little alcohol
- go to bed after learning (no further distraction)
- involve many senses while learning (e.g. listen, watch, write things down)



How can I improve my memory?

The more senses that are involved during learning, the better recollection!





Do we all perceive and remember the same?



Example: Three different artists paint the same Spanish landscape ...



Please pay attention to differences relating to color and size in the paintings. Are there aspects that the artists have painted differently or have even omitted?



Andreas Weißgerber



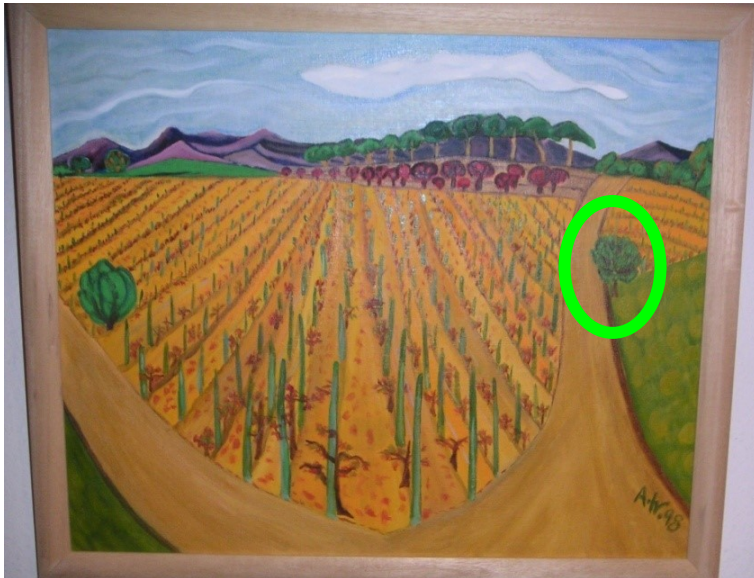
Bernd Hampel



Helmut Schack



Every person perceives things differently!
Like in the three paintings: The same landscape is depicted but with different emphases!



Andreas Weißgerber: The hills on this painting are smaller than on the two other paintings.



Bernd Hampel: The color of the landscape is much more *earthen*. The tree right to the path is missing (red circle).



Helmut Schack: On this painting, you see that different pieces of land outstretch until the horizon. The landscape is much more colorful. In contrast to the other two paintings, a group of trees partly stands directly in front of the horizon (no hills behind).



Exercise

- You will be shown complex scenes (e.g. beach, train station).



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- Afterwards, you will be asked to recall what you saw in the picture and how confident you are in your judgement.



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- Afterwards, you will be asked to recall what you saw in the picture and how confident you are in your judgement.

Try to recall as many details as possible!





At the beach

What did you see? How confident are you?

- beach umbrella
- lifeguard
- dog
- ball
- lifesaver
- water
- hat
- towel



At the beach

- beach umbrella
- lifeguard
- dog
- ball
- lifesaver
- water
- hat
- towel



= not presented





Station

What did you see? How confident are you?

- rails
- carriage
- train engine
- station
- schedule
- railway signal
- bench



Station

- rails
- carriage
- train engine
- station
- schedule
- railway signal
- bench





False memories in everyday life

- Not everything we recall has actually happened!



False memories in everyday life

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- Our brain replaces and adds missing information from previous and related events (e.g. typical beach scene from holidays).
Some objects are added by “logic” (in the example: ball, towel)!



False memories in everyday life

- Not everything we recall has actually happened!
- Our brain replaces and adds missing information from previous and related events (e.g. typical beach scene from holidays).
Some objects are added by “logic” (in the example: ball, towel)!
- Real memories can often be differentiated from false memories by their **vividness**: false memories are rather “pale” and less detailed.



Types of memory errors

???



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- Forgetting



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- Memory biases:
 - normal memory bias: positive events are better memorized than negative events
 - depressive memory bias: negative events are better memorized than positive events



Types of memory errors

- Forgetting
- Memory biases:
 - normal memory bias: positive events are better memorized than negative events
 - depressive memory bias: negative events are better memorized than positive events
- Illusions/false memories: remembering things that have not taken place!



False memories



Contrary to popular belief, Captain Kirk (William Shatner) never said the phrase “Beam me up, Scotty” in Star Trek.



False memories



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Some eye witnesses of the bombing in Dresden (Germany) remembered that after the bombardment low-flying planes were chasing fleeing people. Historians increasingly doubt this (e.g. dust and spreading fires would have made such acts impossible).



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The famous psychologist Jean Piaget remembered being kidnapped as a two-year old, which turned out to be a story his nanny had made up when he was a child.



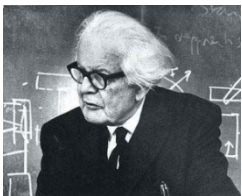
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In an experiment, participants were shown advertisements for Disney World, on which Bugs Bunny was shown. 30% of the participants remembered meeting the rabbit when visiting Disney World as a child, although Bugs Bunny is a Warner Brothers and not a Disney character.



Why are we doing this?

- Studies show that many people with psychosis (but not all!) are more confident in false memories than people without psychosis.



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- At the same time the confidence for true memories (i.e. things that really happened) is decreased in psychosis.



Why are we doing this?

- Studies show that many people with psychosis (but not all!) are more confident in false memories than people without psychosis.
- At the same time the confidence for true memories (i.e. things that really happened) is decreased in psychosis.
- This may lead to difficulties differentiating true from false memories and may obstruct a healthy, realistic view of the environment.



How memory errors promote misinterpretations during psychosis – examples

Event	False memory	Actual situation
Argument with mother	Remembering she said “You are not my daughter anymore!”.	Mother actually said: “I did not know you were like that!” – with time, the exact wording could not be remembered.
Group therapy session	No one cares about my problems.	Other participants did try to console in that situation but this was later forgotten.

Can anyone contribute a short personal experience?



Exercise

- Again, you will be presented complex scenes.



Exercise

- Again, you will be presented complex scenes.
- Try to detect what has been shown and what has been left out.





Kiosk

What did you see? How confident are you?

- kiosk sign
- sausage
- garbage can
- bench
- flags
- price tags
- bottles
- vendor



Kiosk

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■ = not presented





Garden

What did you see? How confident are you?

- watering can
- sunflowers
- flower bed
- tree
- shovel
- rake
- hose



Garden

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Optional: Videoclip

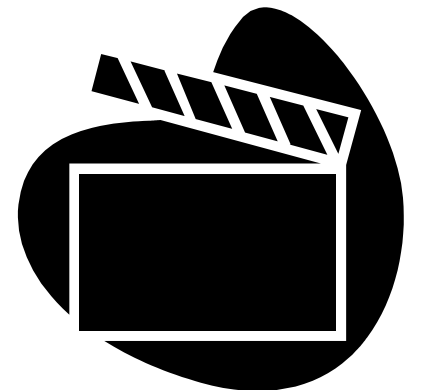
Video clip presentations that address today's topic are available at the following web site:

http://www.uke.de/mct_videos

After the video, you may discuss how it is related to today's topic.

[for trainers:

Some movie clips contain language that may not be appropriate for all audiences and across all cultures. Please carefully pre-screen videos before showing]







Brainstorming

What do you see in a typical classroom?

...

...

...

...



Classroom

What did you see? How confident are you?

- backpack
- teacher
- map
- books
- benches
- teacher's chair
- blackboard
- teacher's bag



Classroom

- backpack
- teacher
- map
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■ = not presented





Fisherman

What did you see? How confident are you?

- pipe
- bucket
- button on hat
- “Sport” sign on boat
- fishing rod
- red sweater
- water
- fish

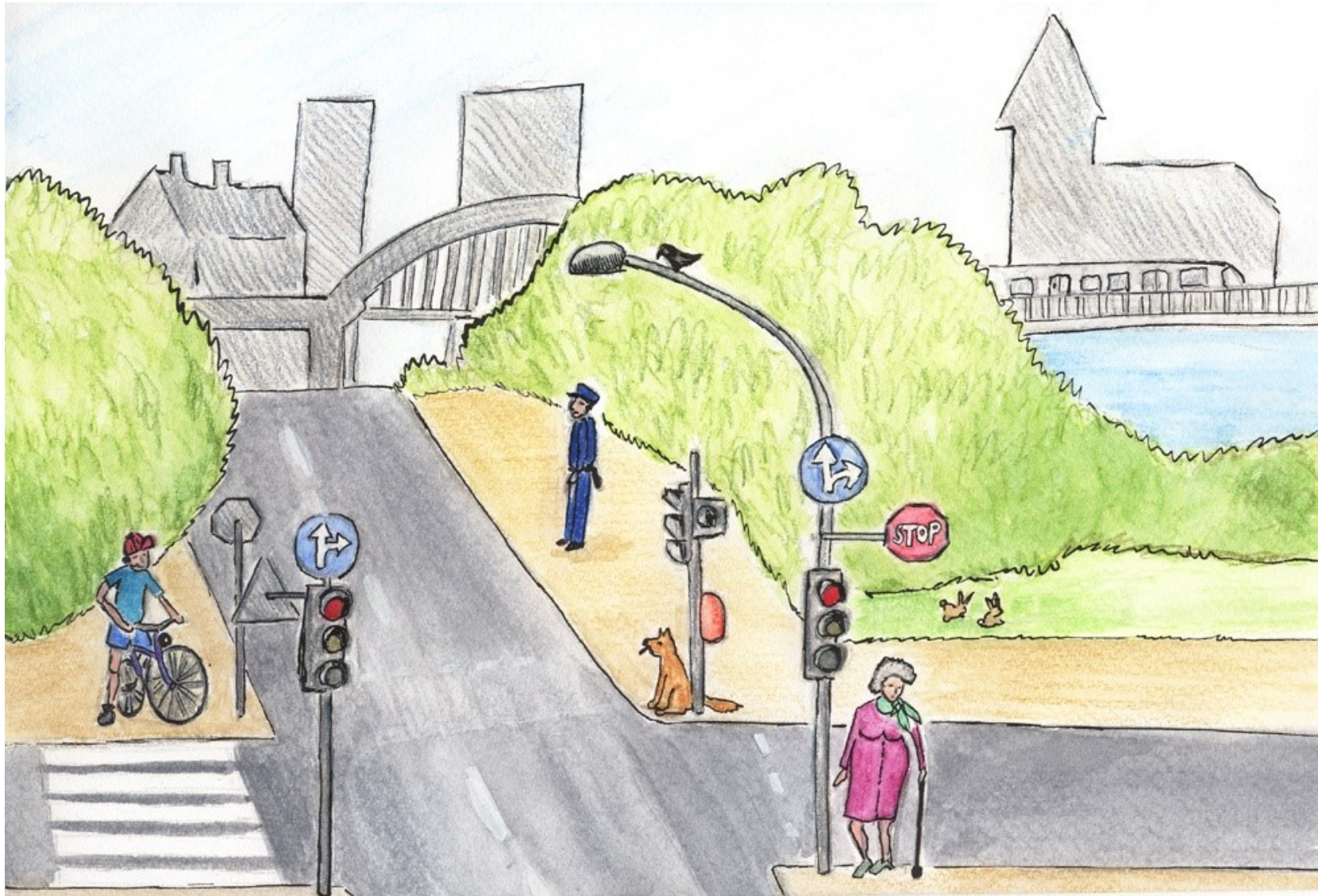


Fisherman

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Brainstorming

What do you typically see at a crosswalk?

...

...

...

...



Crosswalk

What did you see? How confident are you?

- cars
- policeman
- child on a bike
- elderly woman
- green traffic light
- zebra crossing
- stop sign
- city skyline



Crosswalk

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Brainstorming

What do you typically find on a playground?

...

...

...

...



Playground

What did you see? How confident are you?

- slide
- carousel
- kite
- skateboard
- ball
- trees
- swing
- toys
- sandbox



Playground

- slide
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Wedding

What did you see? How confident are you?

- church windows
- best man
- bridal veil
- girl with flowers
- benches
- door



Wedding

- church windows
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Soccer

What did you see? How confident are you?

- scoreboard
- goal
- sidelines
- player
- soccer ball
- fans
- advertisement
- flags

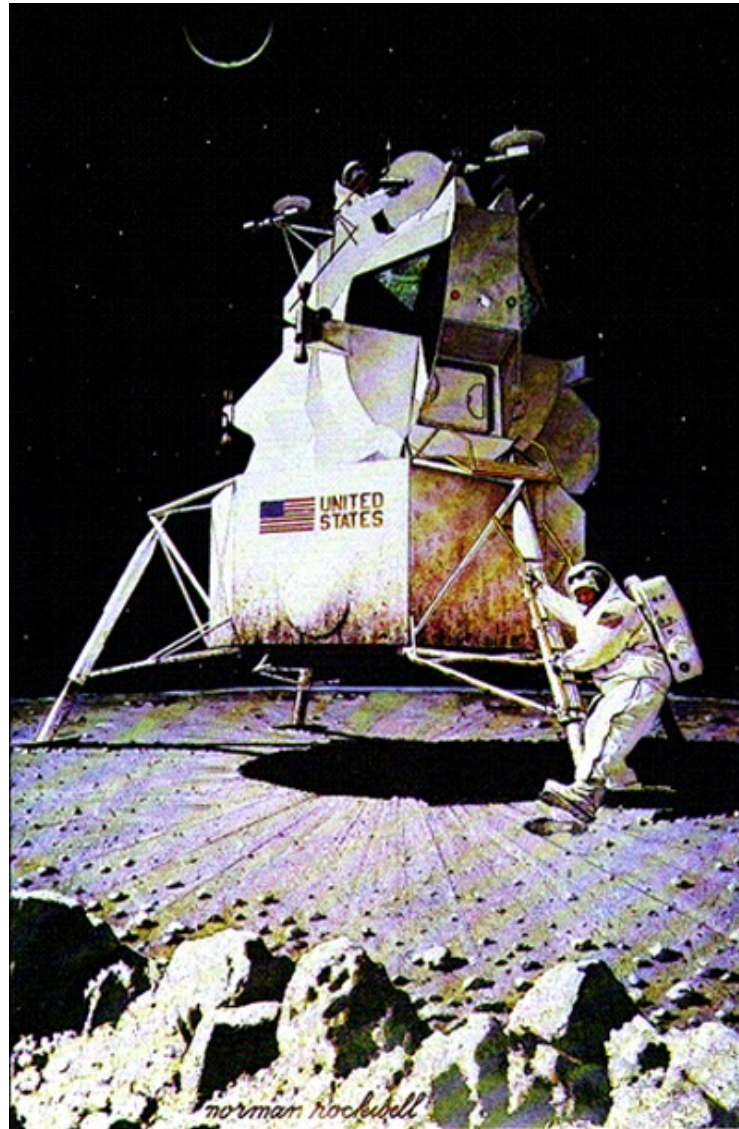


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On the moon

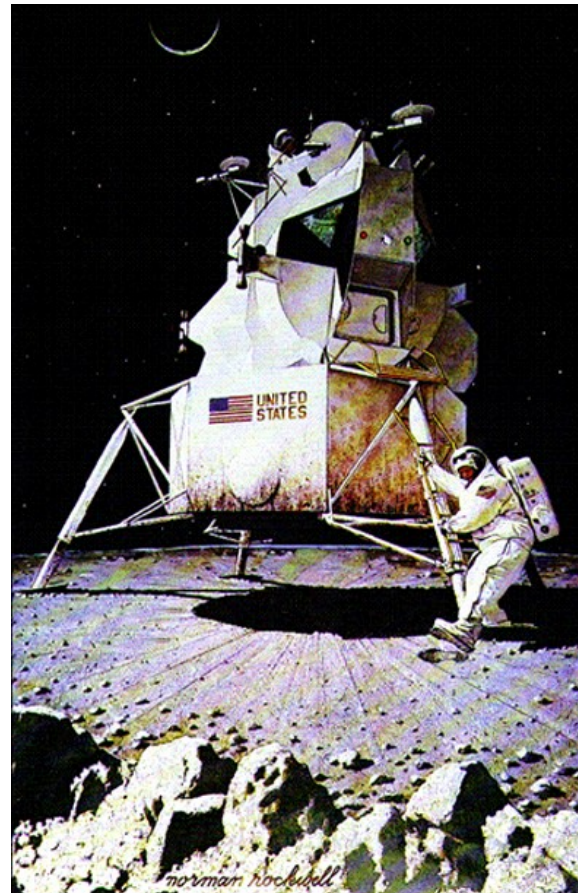
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- rocket stand
- oxygen tank
- helmet
- moon craters
- rocket nozzle
- crescent-shaped planet in the background



On the moon

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Rescue

What did you see? How confident are you?

- helicopter
- rubber dinghy
- diver
- capsized boat
- water
- stretcher
- lifesaver
- pilot



Rescue

- helicopter
- rubber dinghy
- diver
- capsized boat
- water
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Brainstorming

What do you typically see at a construction site?

...

...

...

...



Road works

What did you see? How confident are you?

- pipes
- wheelbarrow
- barrier
- excavator
- jackhammer
- shovel
- stop sign



Road works

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Transfer to everyday life

Learning Objectives:

- Our memories can play tricks on us!
Especially for important events (quarrel, eyewitness testimony etc.), keep in mind:
If you *cannot* remember *vivid* details about an event:
- Don't be too sure that your recollection is true.



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Example: You had a quarrel with someone and *vaguely* remember that he/she made insulting remarks to you.

Consider that your memory may have played tricks on you or that your recollection may be distorted. Also, ask people who were present at the occasion.



What does this have to do with psychosis?

During psychosis people are prone to remember things that did not happen at all or happened in a different way.



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Example: Philip is convinced that someone has stolen his bike.

Background: His bicycle is not in front of his door as usual and he is 100% certain that he left it there last night. He then sees his locked bike in front of the supermarket next door, and is about to call the police as he suspects the burglar is in the supermarket. For him, the incident is yet another indication for a conspiracy since his wallet was stolen 3 weeks ago.

But: In the telephone booth, Philip puts his hand into his pocket and notices the bicycle key. He suddenly remembers that he himself left the bike in front of the supermarket.



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False memories are more likely to arise when one is afraid or under a lot of pressure. Before drawing consequential conclusions: Think carefully whether your assumptions are objective and well-founded! Also take into account: In comparison to real memories, false memories are often hazy!



Thank you for your attention!

for trainers:

Please hand out worksheets. Introduce our app COGITO (download free of charge).



www.uke.de/mct_app





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The Rocketeer	flickr	Kirk Talks to Spock about his Fez Addiction	CC	Star trek/ Raumschiff Enterprise
lyricsart	flickr	Dresden bombing	CC	Bombed Dresden/ Zerbombtes Dresden
Nobik Attila	flickr	Piaget	CC	Piaget/ Piaget
missha	flickr	bugs bunny	CC	Bugs Bunny/ Bugs Bunny
Norman Rockwell Edited by/Editiert v. Michael B. Miller	---	---	PP	False memory pictures/False Memory Bilder
Geobra Brandstätter; Stefan Merz & Frank Burmeister	---	---	PP	Playmobil figures/ Playmobilbilder
Ximena Del Villar Derpsch	Private/privat	---	PP	Drawings/Zeichnungen: Kiosk/Kiosk, Garden/Garten, Fisherman/Fischer, Road Crossing/Straßenkreuzung, Playground/Spielplatz, Football/Fußball