Metacognitive Training (MCT)

MCT 5 A – Memory

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Memory

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• Advantage: ???

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

- **Disadvantage:** ???
Memory

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  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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- with abstract matters: try to think of examples or simple mnemonic aids (e.g. for screws: *lefty = loosy; righty = tighty*)
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• 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

= not presented
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

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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)!

• Real memories can often be differentiated from false memories by their **vividness**: false memories are rather “pale” and less detailed.
Types of memory errors

???
Types of memory errors

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

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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.
### False memories

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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.
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- 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

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

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

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

= not presented
Garden
What did you see? How confident are you?

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

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

= not presented
Optional: Videoclip

Video clip presentations that address today’s topic are available at the following web site:
http://www.ukc.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
- books
- benches
- teacher’s chair
- blackboard
- teacher’s bag

= 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

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

= not presented
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

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

■ = not presented
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
- carousel
- kite
- skateboard
- ball
- trees
- swing
- toys
- sandbox

= not presented
Wedding

What did you see? How confident are you?

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

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

= not presented
Soccer
What did you see? How confident are you?

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

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

= not presented
On the moon
What did you see? How confident are you?

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

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

= not presented
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

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

= not presented
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.
Transfer to everyday life

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  Especially for important events (quarrel, eyewitness testimony etc.), keep in mind:
  If you cannot remember vivid details about an event:

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- Seek additional information (e.g. a witness).
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.
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.

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.
What does this have to do with psychosis?

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**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.

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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<th>Picture Name/Name des Bildes</th>
<th>CC = used with corresponding creative commons license; PP = used with personal permission of artist</th>
<th>Description/Kurzbeschreibung</th>
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<tr>
<td>Bernd Hampel, Helmut Schack, Andreas Weißgerber</td>
<td>Private/privat</td>
<td>Untitled/ohne Titel</td>
<td>PP</td>
<td>Paintings of Spanish landscape/Gemälde einer katalanischen Landschaft</td>
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<td>PP</td>
<td>False memory pictures/False Memory Bilder</td>
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<td>PP</td>
<td>Playmobil figures/Playmobilbilder</td>
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<td>Ximena Del Villar Derpsch</td>
<td>Private/privat</td>
<td>- - -</td>
<td>PP</td>
<td>Drawings/Zeichnungen: Kiosk/Kiosk, Garden/Garten, Fisherman/Fischer, Road Crossing/Straßenkreuzung, Playground/Spielplatz, Football/Fußball</td>
</tr>
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