

# How the mind works

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# What are we going to talk about today?

- Lots!
- How an understanding of how the brain works will improve our understanding of our clients and our ability to support them into the next stage of their lives
- From mirror neurons to the seven c's of change, we will use neuroscience to demonstrate how the brain works and what we can do about it 😊

# What are mirror neurons



# When do mirror neurons develop?

<https://www.youtube.com/watch?v=apzXGEbZht0>

<https://www.youtube.com/watch?v=1ctP9cLRbnE>

<https://www.youtube.com/watch?v= JmA2CIUvUY>



# Mirror neurons and social interaction



# Mirror neurons need focus to work



# Problems with mirror neurons

- If our mirror neurons don't work, how can we predict people's behaviour, intentions and motivations?
- Autism?
- Smarties task

# Mirror neurons and false memories: a study

- people with OCD were monitored for levels of disgust and brain activity when watching a film of an experimenter get his hands dirty and then again when they watched the experimenter wash his hands.
- Levels of disgust rose when the experimenter's hands were dirty and then fell and were replaced with feelings of relief when he washed his hands.
- BUT LOOK - when the people with OCD got their hands dirty, watching the film of the experimenter washing his hands gave them relief!
- The mirror neuron system activated the feeling of relief through seeing someone else wash their hands.

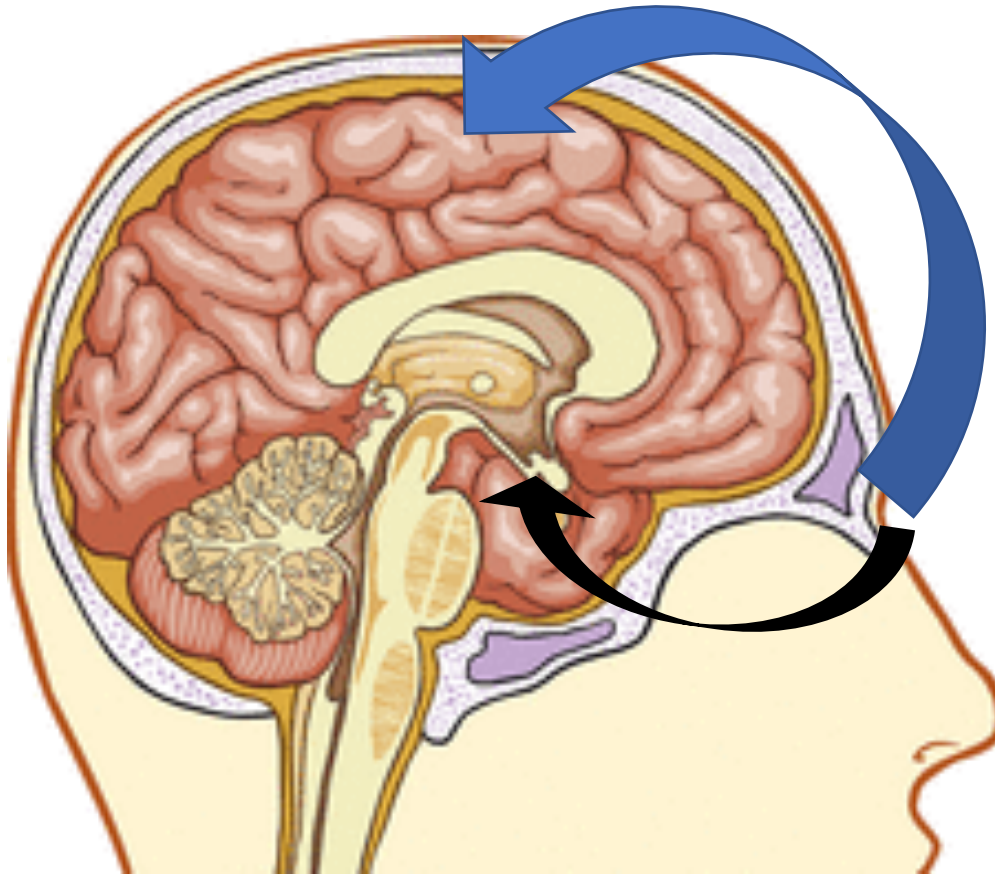
# Damage and rehabilitation

- Damage to frontal lobes results in:
  - Inability to coordinate movements
  - Inability to copy someone else's movements
  - Inability to recognize someone else's movements
  - Inability to understand the meaning of the movements of others.
- Rehabilitation
  - you can improve a person's ability to walk following stroke by the combination of repeated walking practice **and** the visualisation of walking
  - activates the motor planning and learning areas of the brain, encompassing the mirror neuron system, leading to an improvement in the person's ability to walk

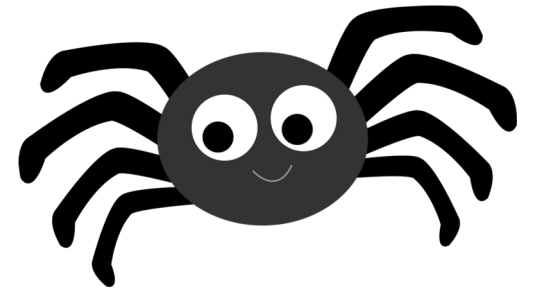




O ye'll tak' the high road, and I'll tak'  
the low road,  
And I'll be in Scotland a'fore ye,



Meh



Yikes!

It's tough up here  
on the moral high ground...





# The prefrontal cortex

Your anger gives you great power.

But if you let it, it will destroy you..

- Batman Begins 2005

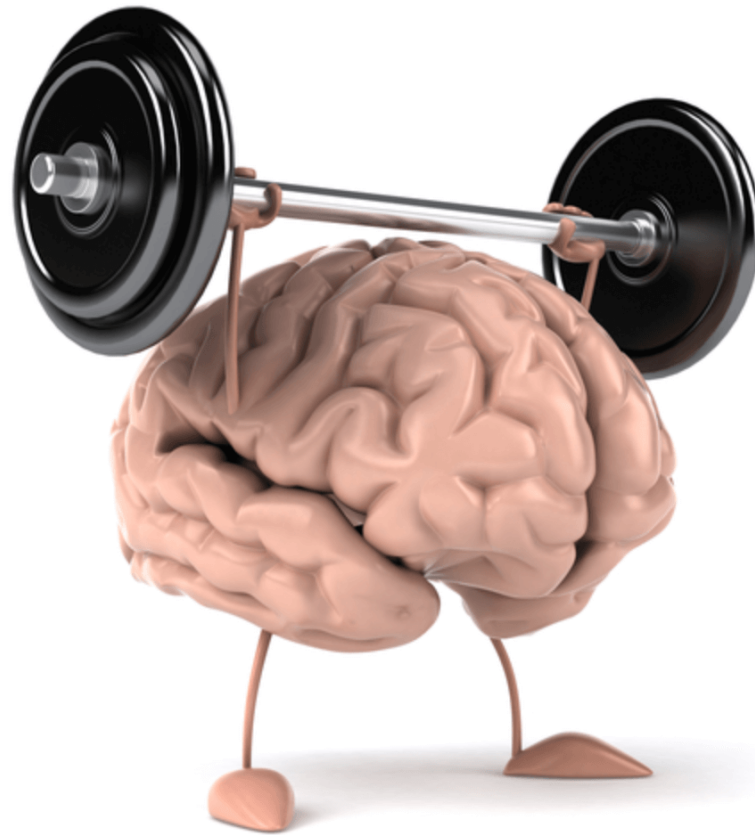
# So what?

- We need to be able to use both sides of the prefrontal cortex if we are to judge the emotional state of others
- We also use the prefrontal cortex to pay attention and remember events of the past, potentially creating context for understanding the emotion of others
- The prefrontal cortex is also busy when we are trying to remember happy and sad events in our past

# Psychopaths

- Lack empathy, 'cold-hearted'
- Shallow emotions, rarely experience shame, guilt or embarrassment
- Blame others for things that are their fault
- 'charming', insincere speech, lie
- Over confident, boastful
- Extreme focus of attention, cannot change what they are doing if new information appears
- Selfish, ego-centric, incapable of love for others
- Unable to plan for the future
- Violent, low threshold – frustration, irritation, aggression when things stop going their way

So, can we train our brains?



# If I go to the gym, will I be...

- Smarter?
  - Meh, exercise doesn't make you smarter, but the increased blood flow does help with memory
  - Exercising into old age helps you keep your memory and skill
- Less aggressive?
  - Yep, it's not that you are burning off energy but in fact, exercise inhibits the aggressive feelings developing in the first place
- Quit smoking?
  - Five minute brisk walk reduces nicotine withdrawal symptoms
  - Stimulates the release of dopamine which replaces the need for nicotine



# Daydreaming is good for us!

- [https://www.ted.com/talks/manoush zomorodi how boredom can lead to your most brilliant ideas/transcript?language=en](https://www.ted.com/talks/manoush_zomorodi_how_boredom_can_lead_to_your_most_brilliant_ideas/transcript?language=en)

- Daydreaming is real, deliberate activity of the brain
- The daydreaming Raichle refers to is not fantasy based but reality based.
- has a very useful evolutionary function.
  - By reflecting on past events, we learn important lessons from them, learning not to do it that way again or reminding ourselves that what we did is the best way to accomplish something.

When we do not have the time to daydream, we start to feel frazzled, that our work is getting on top of us and we start making mistakes





# Anxiety and the default mode network

In anxious people, the DMN does not activate fully, suggesting that the person is perhaps left disadvantaged and unable to play out the options available to them, make sense of them and choose an outcome that does not activate the fight or flight response.



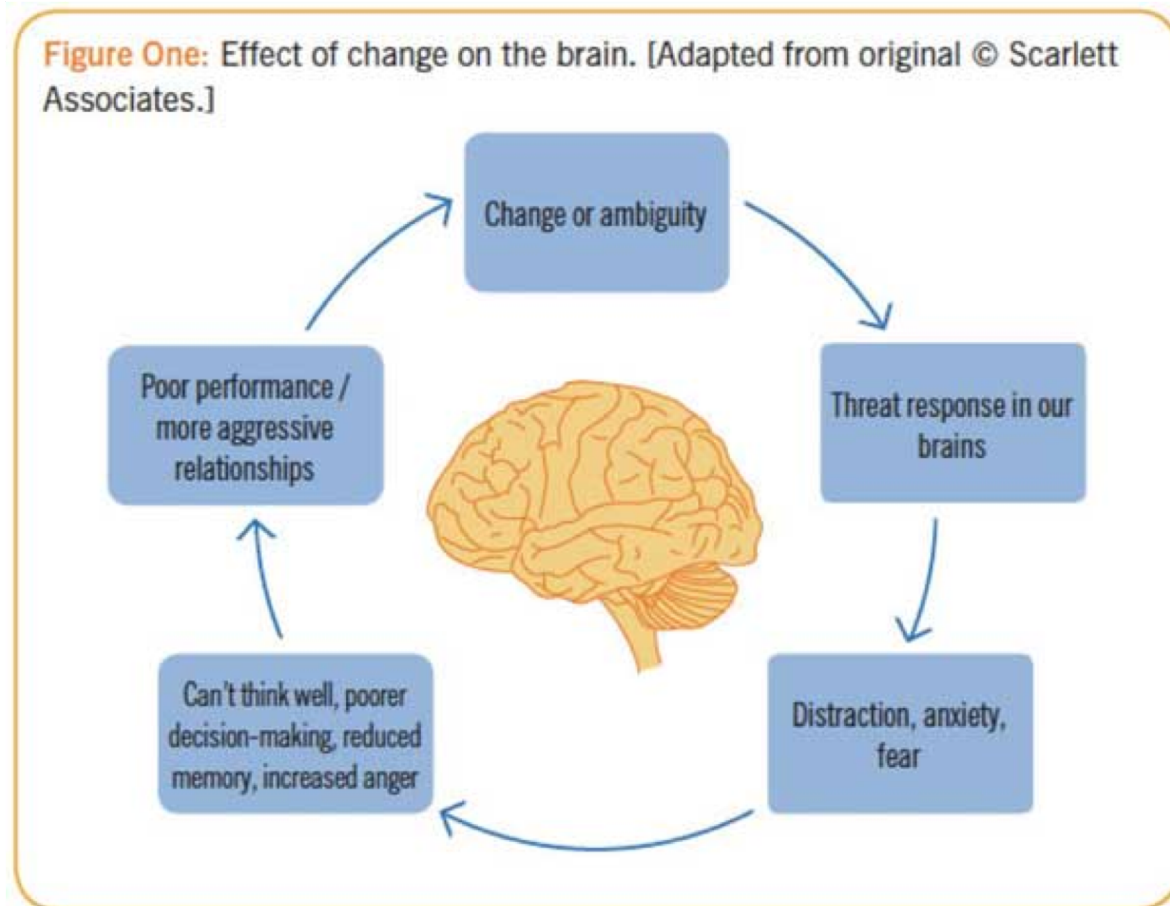
# Depression and the default mode network

- the daydreaming function in the depressed brain does not seem to want to switch off
- 'hooked' on negativity
- the brain does not seem to want to come out of the daydream
- By remaining in the daydreaming state, the depressed brain is unable to move its focus away onto positive events and thus struggles to regulate mood

# Is daydreaming the same as trance?

- Are we, by putting our clients into trance, creating a state of daydreaming?
- Two types of trance:
  - Self-hypnosis is self-created
  - Hetero-hypnosis is created by another person
- A motivated state, perhaps triggered by the miracle question or by the words we use in trance
- Trance associated with an increase in activity of the parasympathetic nervous system
  - Calm, relaxed, coping better with pain
  - Reduced anxiety and fearfulness
- Effects of daydreaming may last a few hours, effects of trance can last for a year or more

# The challenge of change



# The 7 C's of change

Clarity

Continuity

Certainty

Consistency

Cooperation

Confidence

Communication



# The 7 C's of change

## **Clarity**

- make clear goals that are specific and measurable (the use of scaling and the miracle question).

## **Continuity**

- information is forgotten quickly, repeat the message and maintain a continuous pathway through the change (the use of revision and explanation in all of our sessions with a client).

## **Certainty**

- change will occur and the company will continue to succeed (trance is of course very effective, you will see change).

## **Consistency**

- change comes easier when it is done consistently and in small doses (this will take 8, 9, 10, 11, 12 sessions).

# The 7 C's of change

## **Cooperation**

- people find comfort in their relationships with others (positive action and positive interaction).

## **Confidence**

- anxiety occurs during change when you lose confidence that you are able to cope with it (negative forecasting, negative introspection, etc.,).

## **Communication**

- people want to feel that they have a voice and that it is being heard, to be a part of the change as much as possible for it to be successful
- in SFH our clients lead the session, they learn to detect change through the use of the 'what's been good about your week?' and deciding where they want to see change and how through the use of the miracle question.