connections in mind

THE NEUROSCIENCE OF PROCRASTINATION

Procrastinators' Brains

MRI scans of procrastinators have revealed that lots of different thing happen in the brain that seem to stop/ slow the logic brain from taking control and helping us get over our emotional reactions.

Daydream Distractor

One study showed that the default mode network, which is a series of areas of the brain that are active when we're daydreaming, resting, dreaming, or not focussing on the outside world, can interfere with the prefrontal cortex in chronic procrastinators.

Another study showed that procrastinators' brains tend to prefer immediate rewards to delayed ones which might make them "more impulsive".

Brain Architecture

Procrastinators' brains have bigger amygdalae - our threat response area - and they are less connected with the dorsal anterior cingulate cortex, the brain area that helps regulate our reactions around fear, and prompts task initiation.



Is Procrastination always a bad thing? Well, no!

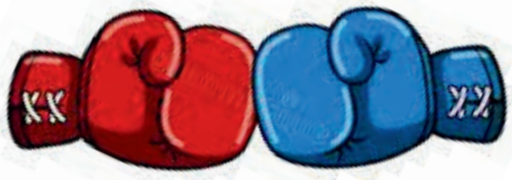
Procrastination can potentially give you more **time to think** before acting, which can sometimes help you make better decisions, Procrastination can sometime help you **prioritise** your tasks.

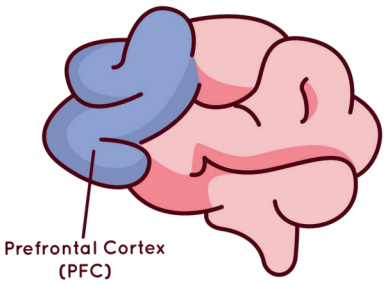
Procrastination can potentially improve your ability to **solve problems** in a creative way.
And in some cases it can **increase your motivation** to work, for example if it makes an otherwise boring task feel exciting, because it leads you to work on it under intense time pressure.

Most of all, learning about how to best manage your procrastination can be a really good tool to **develop a growth mindset**

But most of the time, for most of us, procrastination is an ongoing battle between two key parts of the brain

LET'S GET READY TO RUMBLE!



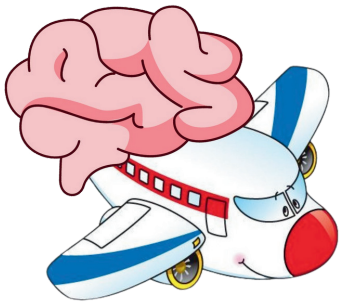


In the BLUE corner:

The Prefrontal Cortex

Like an air traffic control system in our brain, the PFC manages lots of different elements all at the same time and helps us stay focussed to safety land lots of different planes - or tasks.

Executive functions are cognitive control processes found in the prefrontal cortex of the brain. They are called executive functions because they help us to execute everyday tasks. - the decision-making part of the brain, responsible for our ability to plan and think about the consequences of our actions, to solve problems and control impulses.
It also plays a very important role in our ability to self-regulate.

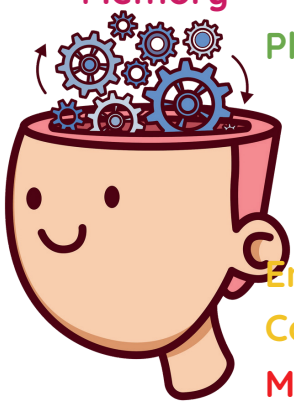


Executive Function Skills

The subprocesses that we need to coordinate to get things done are known as our **Executive Function Skills**. We use these skills, working together to achieve a particular task or set of tasks, to manage our time, to avoid us getting distracted and to regulate our emotions.

Executive functions only work optimally when we are well rested, well fed, feel safe, unstressed and connected to people in our environment.

Sustained Attention
Working Memory
Task Initiation
Response Inhibition
Planning & Prioritisation
Organisation
Flexibility
Time Management
Emotional Control
Goal-Directed Persistence
Metacognition



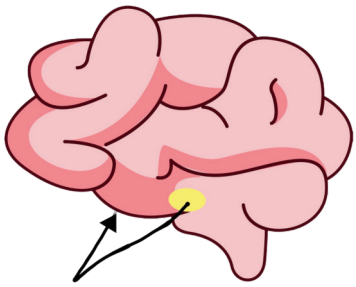
Which of your Executive Function SKills need the most calm and regulation to work well?





In the RED corner:

Limbic System -The Amygdala



Amygdala

The guard dog to our Executive Function. When this part of the brain is triggered and starts "barking", our executive function skills become inhibited. The amygdala protects us from danger and is in charge of ensuring we stay alive.

The amygdala is part of the limbic system; sometimes known as the Survival Brain. The Amygdala is the integrative centre for emotions, emotional behavior, and motivation. The amygdala also preserves memories and attach them to specific feelings (such as happy, sad, angry, scared, etc) so it stores key information about scary and adverse experiences, times we we under threat and times we were safe.



The amygdala is basically our survival mechanism; it's scanning the environment for anything that might be a threat

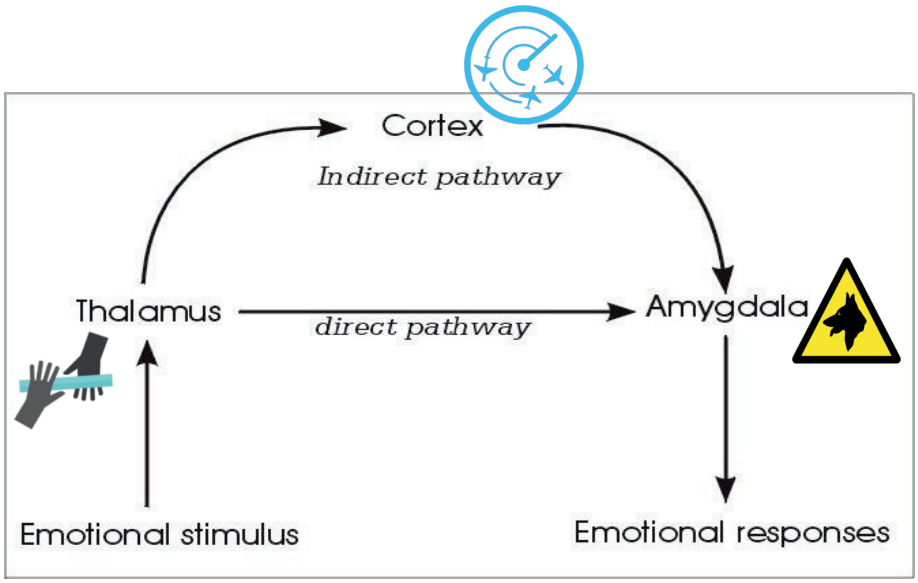
As soon as it detects something, the guard dog starts barking and triggers the release of stress hormones, cortisol and adrenaline - that change our physiology – pumping up our heart rate, and accentuating our hearing and vision getting us ready to survive the danger

How can you calm down your guard dog??





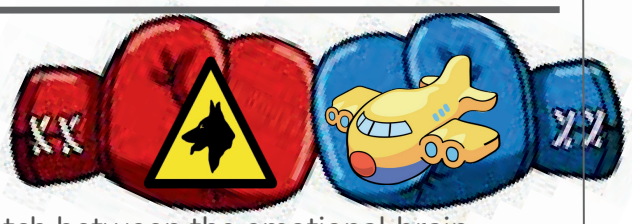
Amygdala Hijack



Executive Function (EF) in the Pre-frontal Cortex should process the input to determine if the danger is real. For low level threats, the EF can override your amygdala so you can approach the situation rationally. But in the case of strong [perceived] threats, or poor EF skills, the amygdala hijacks the brain and triggers the threat response. Also knowns as the Stress Response: Fight or Flight

The amygdala send the signals to get the body ready to react - signals the brain to pump stress hormones, preparing to either **fight** for survival, **flee** to safety, **freeze** to avoid being seen, **flounder** (i.e. panic), or **fawn** (which is to appease whoever is triggering the fear response to prevent them from causing harm.

Let the battle begin...



Procrastination is a struggle between these two systems.

If we're procrastinating, we're experiencing a wrestling match between the emotional brain (limbic system) and the rational brain (prefrontal cortex).

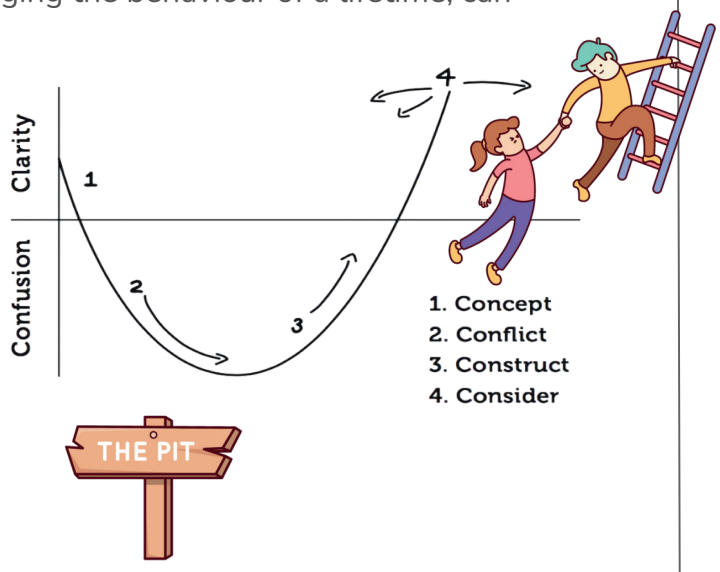
This emotional response is to decide that the task we're procrastinating on is unpleasant or uncomfortable and motivating us to emotionally avoid it. That helps us feel better...in the short term! The amygdala can't really tell the difference between real danger and perceived threat, so once it starts barking, our body recognizes the task we're avoiding as a threat and it creates anxiety. Our natural reaction is to get away from the threat. The problem here is that more often than not, getting away from the task is only going to make it worse.

Meanwhile, the prefrontal cortex, is trying to get us to ignore those negative feelings and push on with the task. It recognises that it might be unpleasant now, but that the rewards of getting it done are worth it.

The Learning Pit

Sometimes a task like overcoming procrastination can seem huge and scary, but that isn't always a bad thing. Through persistence and problem-solving you learn skills to overcome challenges. And facing up to a hard things, like changing the behaviour of a lifetime, can bring great learning.

When facing challenges in learning we can be very tempted to take the shorter or easier route and stay in our comfort zone. Your comfort zone may be the most familiar way to deal with learning. However we can learn a lot more by taking the challenging route and jumping into the learning pit. By braving out way through the Learning Pit, we develop new skills and reinforce change

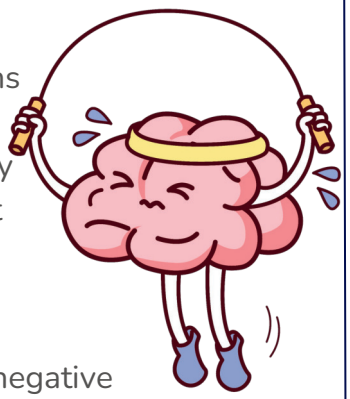


Learning by trying out new techniques, and not giving up even when I mess up, can be a real struggle – to get through the pit and change my behaviour can use our struggles to generate good learning and develop vital skills in the learning zone such as persistence, and resilience.



Write down your thoughts about your own Learning Pit here:

Neuroplasticity



Neuroplasticity is how the scientists refer to the amazing ability of our brains to rewire. It may not feel like it sometimes, but your brain has the powerful ability to modify, change, and adapt both its structure and function. Not only can you teach an old dog new tricks, you can quite literally talk yourself out of procrastinating. By building new habits, you can form and myelinate (insulate) new neural networks, and change your thinking and behaviour.

The more you exercise the parts of your brain that regulate the fear of any negative consequences of getting started, the easier it will become to get started! It's time to join forces with your brain and help end the procrastination battle!

Habit Formation



It takes on average 66 iterations of a task before it becomes automatic

What gets in the way for you in forming a new habit?

Habit Stacking

Habit stacking, or anchoring, means stacking new habits on to strong existing ones.



What regular habits/practices / routines do you have you could stack onto?

What habit would you like to form to help with your procrastination? (work on one at a time)

Workable Habits are:

Simple

Value-based

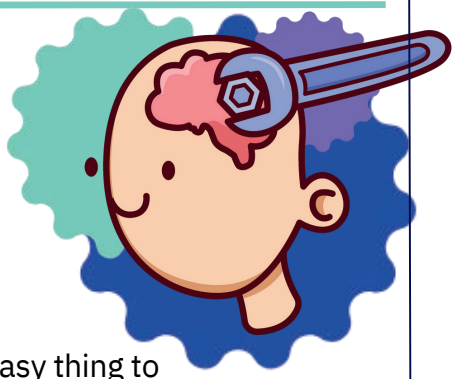
Short

What type of person do you want to become?

Does the habit fit?

"Every action you take is a vote for the type of person you wish to become." - James Clear - Atomic Habits

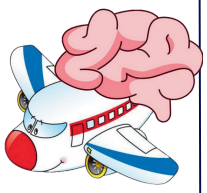
Re-wiring my Brain to become a Task Ninja!



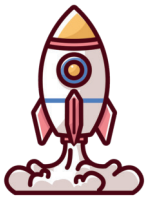
Procrastination can be overcome. We can short-circuit our natural impulse to delay tasks, and instead direct our minds towards being productive and proactive.



Don't feed the dog! The limbic system will seek fun and easy thing to do. Take control and don't give in with rewards that haven't been earned!



Don't overwhelm the airways with overly-ambitious goals. Tasks seem threatening when they are broad and vaguely-defined. Divide tasks into many realistic, achievable, and thus sustainable chunks.



Get started. Don't wait for that perfect moment when the stars align. The single best way to finish a task in time is by STARTING it!

Rewards are your friends. Create short blocks of time dedicated to the task interspersed with well-earned rewards at the successful completion of a task-chunk. Let your brain know that you will reward it for focusing and being attentive.





Don't let the squirrel drive – very often procrastinating behavior starts with a distraction trigger. Identify your trigger squirrels and avoid them. Try limiting your distractions – and never, ever multitask!

Don't try to be perfect. Perfectionism is the partner-in-crime to procrastination. Wanting to do a good job is great, but striving for perfection rarely helps. So just do your best.



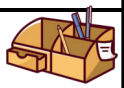


Don't punish yourself. You will still end up procrastinating on occasion.Don't give yourself a hard time when you do. Do some self-reflection, re-evaluate your goals, take a breath, and try again!

What steps will you take to end the battle and become a Task Ninja?



Executive Function Skills Explained

Skill	Definit ion
Response inhibition 	The capacity to think before you act; this ability to resist the urge to say or do something allows your child the time to evaluate a situation and how his or her behaviour might impact it.
Working memory 	The ability to hold information in memory while performing complex tasks. It incorporates the ability to draw on past learning or experience to apply to the situation at hand or to project into the future.
Emotional control 	The ability to manage emotions to achieve goals, complete tasks, or control and direct behaviour.
Sustained attention 	The capacity to keep paying attention to a situation or task in spite of distractibility, fatigue, or boredom.
Task initiation 	The ability to begin projects without undue procrastination, in an efficient or timely fashion.
Planning/ prioritisation 	The ability to create a roadmap to reach a goal or to complete a task. It also involves being able to make decisions about what's important to focus on and what's not important.
Organisation 	The ability to create and maintain systems to keep track of information or materials.
Time management 	~~The capacity to estimate how much time one has, how to~~ allocate it and how to stay within time limits and deadlines. It also involves a sense that time is important.
Goal-directed persistence 	~~The capacity to have a goal, follow through to the completion of~~ the goal, and not be put off by or distracted by competing interests.
F lexibility 	~~The ability to revise plans in the face of obstacles, setbacks, new~~ information, or mistakes. It related to an adaptability to changing conditions
Metacognition 	~~The ability to stand back and take a bird's-eye view of yourself~~ in a situation, to observe how you problem solve. It also includes self mentoring and self evaluative skills (e.g., asking yourself, ~~"How am I doing?" or "How did I do?"~~



Self-Development Strategies

Executive Function Coaching: Book a free consultation here.

- Calming techniques (e.g. deep breathing, meditation, counting exercises, and soothing music)
- Role-playing different skills
- Thought-stopping strategies

Improve communication by:

- Demonstrating and requesting compassion, consistency, empathy, patience, reassurance, and validation
- Using simple, clear, and concise language
- Ensuring ample time to process any information
- Minimising the presence of any distractions

Learn diverse skills including:

- Delaying gratification
- Developing routines
- Emotional processing
- Building and maintaining positive relationships
- Removing one's self from bad situations

Change Your Brain:

Research shows that if you are a chronic procrastinator, your guard dog, the amygdala, is likely considerably bigger than average – BUT there is a way to shift your brain structure to help.

Research shows that 8 weeks of mindfulness meditation actually shrinks the size of the amygdala and changes the neural connections to the prefrontal cortex to help reduce amygdala hijack.

So be kind to your brain with mindfulness, which emphasises attention and focus - and give some of our Self-Development Strategies a go - you may be able to make your brain more capable of taking the wheel and overruling the limbic system!



Further Resources

Intro to Executive Functions course

https://cimlearning.com/courses/intro-efs/

Growth Mindset Course
https://cimlearning.com/courses/neuroscience-

modulegrowthmindset/

Looking for a supportive community in our group sessions?

Weekly Support Group

https://cimlearning.com/courses/weekly-support-session/

Fortnightly Strategy Group
https://cimlearning.com/courses/connected-mindsmembership

-strategy-sessions/#

Parent Facebook Group

https://www.facebook.com/groups/executivefunctionssupportg roupparents

Adult Facebook Group

https://www.facebook.com/groups/executivefunctionsupportforadults/

