I'm been a horrible day today. I have been thrashed and trampled by people around. To top it all, someone arrives and tells me my test scores (which are bad as usual) and without giving it a second thought, I shout and scream at the friend so bad that she almost bursts into tears. It wasn’t her fault that I had a bad day.

Actually it was nobody’s fault. Wait a minute; actually it was Miss Amy’s fault. It was she who made me burst out in this way.

Miss Amy has been with me since ever and has spent her entire life resisting everything important I’ve ever wanted to do. When confronted, she fights filthy by knocking me out both physically and emotionally!

Now, who is this Amy and how does she control me!

Miss Amy, Amygdala, is the emotion hub of the human brain. It occurs in pairs and is an almond or pear-shaped structure situated in the mesencephalon or the mid-brain. Amygdala, along with the thalamus, hippocampus, fornix and mammilary bodies forms the limbic system of our brain.

The limbic system is the most primitive region of our brain and thus is related to the basic emotions of our system. It is considered as the animal brain or a beast inside our thinking box.

The neurocortex with logical reasoning makes us humans and thus has evolved long after our limbic dragon through the process of progressive evolution. With the use of our cerebral cortex, we can think, decide, take logical decisions and avoid unfavourable disputes. But our Amy, the limbic beast, neither understands nor involves thinking. Being primitive in its origin, it still carries with it the response mechanisms utilised by our nomadic ancestors.

While evolving, lives were hard and survival was the sole aim. Fulfilling even basic needs involved humongous physical efforts. The basic threats our ancestors had to face were physical ones, say, being attacked by predator animals. They either had to fight instantly or run away or freeze, aping non living things to avoid being eaten by animals. Though we have now evolved, these responses have been saved and locked inside our limbic system.

Today, we are more likely to be caught in an emotional situation than being preyed about. For us, today, the greater threat is getting humiliated by the boss than being chased about by a big ferocious cat.

Our limbic system, though, cannot differentiate between physical and emotional threats. So if someone tends to put us under emotional stress which we find hard to handle, the amygdala, even before the involvement of the thoughtful cortex, breaks out physically to protect...
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In the normal context our brain and the signal it receives work in this way.

![Diagram of signal path in normal context](image)

In the amygdala, a flood of hormones and enzymes are released to create suitable emotions and actions.

The signals or stimuli received by our senses viz. eyes, ears, tongue, nose or skin.

Sensations directed to thalamus

Thalamus acts as “Traffic police” and keeps the signal moving to the Cortex for processing.

To the neurocortex

The cortex ‘thinks’ over the signal and then logically processes it.

Now for the involvement of emotions, this processed signal is sent to amygdala.

In the amygdala, a flood of hormones and enzymes are released to create suitable emotions and actions.

The signals or stimuli received by our senses viz. eyes, ears, tongue, nose or skin.

Bypassing of signals by the thalamus during any unexpected threat.

Fig. 2: Route of signal path

In the amygdala, a flood of hormones and enzymes are released to create suitable emotions and actions.

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Fig. 3: Route of the signal path during amygdala hijack.

We all have been in situations where we have overreacted ferociously out of a sudden impulse or shouted at people around, or abused someone obnoxiously or even got frozen and blacked out during an important presentation or interview. Did you feel you were out of your own self or as if someone else had got control over you? You are partially correct... in such situations your brain, believe it or not, gets hijacked!

The term ‘Amygdala Hijack’ is used for situations when our logical brain gets impaired due to emotional outbursts caused by the amygdala. It is impossible to control the amygdala from thrusting out with such a response. The reason is that there are no actual connections from the prefrontal cortex to the amygdala although a lot of communicative pathways from amygdala to the cortex have been studied.

In the normal context our brain and the signal it receives work as shown in Fig 2.

During the “Hijack” though, this route is diverted by the “Traffic police” thalamus, which sensing the threat, bypasses the signal directly to the amygdala instead of sending it straight to the neurocortex for processing.

The thalamus, a part of the limbic system and of primitive origin, understands that in such threat conditions involving logic would be a waste of time. So sending the signals directly to the amygdala and expecting an instant action to prevent from the threat is the motive behind this bypass.

The immediate result of the hijack is depreciation in working memory of the individual. Adrenaline is released in high amounts and will be present and effective for 18 minutes. Other hormones are also released into the bloodstream which takes 3-4 hours to clear. In this duration, anything and everything seems incorrect.

The hijack causes people to narrow their accessibility to see more than one solution. With only one solution available, we either break out or freeze and black out during hijack. Within a few seconds, when the hijack pathway is completed, we start questioning ourselves, “How could I do that? What was I thinking?” Well apparently, our thought process was completely ceased at that moment.

Forcing the brain to evaluate logically and involving thinking during the hijack
may prevent us from the outburst and may save our job and relationships. There are a few measures that can be taken into account the next time your amygdala hijacks your logical thinking.

1. **Name it:** I call mine “Miss Amy”, naming the emotion centre and every emotion we go through keeps our cortex involved. So if you feel insulted, furious or even scared, keep focussing on understanding what emotion you are going through instead of trying to prove yourself. This gives a visual understanding of the root of the hijack.

2. **Stop:** As soon as you realise you are going out of control, stop doing whatever you are doing. Try to think about all the good things that have happened in your life so far and are about to happen. Changing the thoughts make our emotions dilute giving our cortex time to take over charge again.

3. **Breathe:** This is the oldest and most abundantly used measure to control anger or anguish. Breathing provides high amount of oxygen to the brain. Deep breathing and keeping a watch on your own breathing for sometime helps you forget the stimulus for hijack. So, breathe deep. Good in, bad out.

4. **The 6-second rule:** Counting till 6 slowly helps to get back your senses. The reason behind this is that most of the stringent hormones involved in hijack calm down and get diluted (if not completely disappear) in about six seconds. So when under hijack threat, counting till 6 and not reacting can let you get hold of yourself back.

5. **Reconstruction of event:** The amygdala responds on previous recorded experiences and memories. So even when the event of hijack is over, if we think rationally about it over and over again, it helps to construct a new set of beliefs for the amygdala to function upon the next time.

6. **Laughter is the best remedy:** Humour loosens the muscle and dilutes the hormones. So laugh a lot. Even when somebody is trying to pull you down with their words and actions, laugh inside because those who are being mean to you are way more pitiable creatures than you.

Amygdala is actually not our enemy. It is just trying to protect us from being hurt or harmed from the threats it understands in its own way. Training our neurocortex by doing mental work makes it more efficient to take control over the situation before the involvement of the amygdala.

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