

Watches Television

Mission: Impossible Amnesia

"Your mission, should you decide to accept it..."

- It was a textbook *Mission: Impossible* episode. In *Operation Rogosh* (originally broadcast October 1, 1966), a master criminal was in Los Angeles and had implemented a plan that would kill thousands of people. He was considered unbreakable by the usual methods (hypnosis, torture, etc.), so in order to find out what his plan was, the Impossible Mission Force staged a traffic accident, knocking the man unconscious. When the man awoke, he found himself (he thought) in his home country, awaiting execution for treason. Telling him he had just had a sudden onset of amnesia, Barney, Willie, Cinnamon, Rollin and Dan Briggs convinced the terrorist that it was three years later, and his plan had gone off without a hitch. They spent the rest of the episode trying to get the terrorist to talk about the plan, so they could find out what it was and put a stop to it before it occurred.

That got me thinking about the use of amnesia as a plot device. I've seen it in lots of shows, but I've never met anyone who had it (or so I thought). I decided to investigate a little further, and this is what I learned.

What is Amnesia?

- First clinically described in 1854, amnesia is the loss of memory resulting from brain trauma, shock, alcoholism, illness, fatigue, or senility. Information once remembered is temporarily forgotten.

The Process of Forgetting

- You will forget something if there is a failure in your cerebral cortex of one of the three stages of memory processing:
 - encoding (the creation of a memory)
 - storage (keeping the memory over time)
 - retrieval (recovering the memory for use in thought or action)

Physically, there are many things that could happen to your brain that would not allow it to process memory. Lesions on the temporal lobe would affect both encoding and storage. As well, each individual memory is broken up into sections and distributed all over your cortex. Something called the hippocampus creates a "map" which allows all the necessary bits and pieces to be retrieved and reassembled. Any damage to the



*The original cast;
click to hear the theme (395k
.au file)*

hippocampus could lead to amnesia: no retrieval of memory would be possible. Also, as we get older, the brain's capacity to retrieve information becomes less efficient, although some studies now suggest that this effect disappears if you practice memory skills. All of these events would produce different types of amnesia.

What Types of Amnesia Are There?

- The study of amnesia (a branch of medicine called cognitive neuropsychology) has resulted in many types being recognized:
 - childhood amnesia (memory loss of events from when you were aged 5 to 7)
 - posthypnotic amnesia (forgetting things that happened while under hypnosis)
 - verbal amnesia (inability to recall words)
 - visual amnesia (loss of memory for things that you see)
 - Broca's amnesia (loss of ability to understand language in spoken or written form)
 - hysterical amnesia (loss of memory of an emotionally traumatic event; this usually results from the person's desire to dissociate from a particularly intolerable situation, causing that person to suppress natural feelings and impulses; in some cases, the person assumes a new identity that can act out those repressed feelings, resulting in multiple personality disorder)
 - amnesia arising from diseases (cerebral malaria, collagen diseases, diabetes, amyloidosis, sarcoidosis, etc.; this type disappears with medical treatment)
 - amnesia caused by toxic agents (carbon monoxide poisoning, alcohol or barbiturate abuse, etc.; this type usually last less than 72 hours)
 - lacunar amnesia (loss of memory of specific events)
 - **sleep-induced amnesia** (the most common kind)
 - post-traumatic retrograde amnesia (loss of memory following some physical trauma)

This last one, post-traumatic retrograde amnesia, is the one you see on television the most, so that's the one we'll focus on.

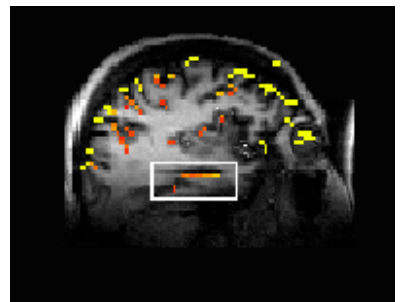
Post-Traumatic Retrograde Amnesia

- Any trauma to the head can damage the brain, bruising the cerebral cortex, the part of your brain that deals with memory, and causing problems with memory retrieval. Trauma can cause personal memories (for example, your identity) to be temporarily lost; less personal memories (for example, language skills and word recognition) are stored in a different part of the brain, and are not lost (which would explain why you might forget your name but would still remember how to talk). Normally, following the trauma, there are isolated events that are remembered very well. These are called "islands of memory," and act as anchors for memory recovery. As the bruising heals, those "islands of memory" get larger and larger; the gaps are filled in, and memory returns. This usually takes around 72 hours (anything longer than a week indicates severe brain damage).

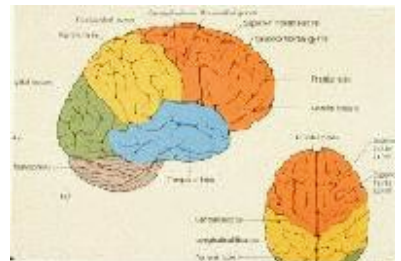
In almost all cases, most memories, except for the accident itself (due to an encoding deficit that occurs during the moment of trauma), are normally recovered. Those that don't, due to permanent brain damage, are called "islands of amnesia."



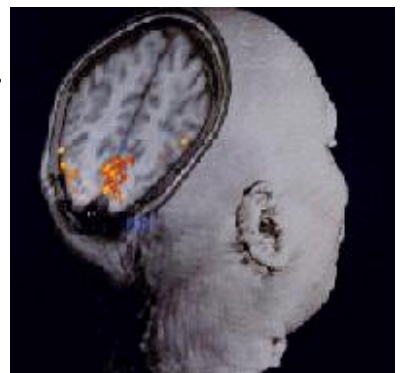
Rogosh (played by Fritz Weaver) reacts to the news he's forgotten the last three years;
photo copyright Paramount Pictures; click to hear "The Plot," that catchy cello music they play when the plan is underway (390k .au file)



Activation of the hippocampus during memory tasks



Lobes of the brain



View of active occipital lobe

In Conclusion...

- On the show, they brought in a "doctor" to tell the terrorist that it was possible to have delayed post-traumatic amnesia, three years after the event. If the terrorist knew anything about amnesia, however, he probably wouldn't have been fooled by the IMF's ploy. There's no instance of a post-traumatic retrograde amnesia that would occur after such a long period of time. What the doctor should have told him he was suffering from was hysterical amnesia: the memories of the accident proved so painful that he repressed them. Of course, with the type of things the terrorist was accused of doing, I don't think a little accident would be that emotionally traumatic, so he probably wouldn't have bought it. Still, it was a pretty good episode!

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[Mission: Impossible \(The Movie\)](#) (Paramount's official site; for series info click on "Archive")

[Memory](#) (from a class in cognitive psychology at Northwestern University)

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