

Memory
Prof. Manish Kumar Asthana
Department of Psychology
Indian Institute of Technology Roorkee

Lecture - 28
Forgetting - IV

Hello, I welcome you all to the lecture series on memory. Previously, we discussed different types of forgetting, and in detail, we discussed decay, interference, trace degradation, NQ, impairment, and availability. Today, we are going to talk about the idea of forgetting before psychology came into light. The time when Sigmund Freud, an analytical psychologist, was talking about defense mechanisms, when he was talking about the coping mechanisms an individual undergoes. As a result, the individual comes up with 12 different types of defense mechanisms.

One such defense mechanism Freud talked about was repression. At that time, psychology hadn't evolved to its fullest potential. Today, in the modern world, psychology is addressing several issues related to forgetting. However, the time when Freud was proposing the concept of repression, it was very new. He proposed that some memories are inhibited in a human being through a process called repression, which is motivated forgetting. People are motivated to forget this information. Why are people motivated to forget this information? Because of a coping strategy. From what they want to cope with.

The individual wants to cope with the anxiety, shame, and guilt which they hold. And this anxiety, shame, and guilt are stemming from unconscious conflict which an individual is experiencing. As a result, the individual tries to repress these feelings, these emotions over a period of time. And this repression of information is a defense mechanism. The individual forgets it deliberately. The goal of the defense mechanism, when Freud was proposing it, was to temporarily delay the negative feelings which an individual is feeling. A brief moment of time when you can avoid your negative feelings which result in the building of a person. Unconscious traits which come up from some past or present situation.

So when Freud proposed this repression, he suggested that it's a motivated forgetting. An individual is trying to forget the information as a result of shame, guilt, and anxiety. Several psychologists talked about the issues related to repression. If a person is repressing the memories of his or her past and then when this person is recovering this

information during therapy, verifying if the event has actually occurred or not, If that event, if that traumatic event or a specific traumatic event is actually interfering and affecting the life of an individual, then people try to understand that.

And at the time of retrieval, at the time of recovering that traumatic information, what they have observed is that they produce false memories. The memories which are not real in nature. The memory which they create. The memory which they are creating to gain sympathy. This is mostly unintentional.

But it doesn't provide clarity on whether the event actually occurred or not. So repression is the information which an individual has repressed, the memory of a certain event or incident, at the time of recovery, it could be a false memory. Many instances people have seen this and reported it. We know there are many ways to forget information.

And as we have seen in earlier talks, decay, interference, cue availability, cue impairment, trace degradation are such methods through which the information is getting lost. So should forgetting of a traumatic event occur? And many researchers want to establish this notion that repression was a cause of forgetting. rather than a form of forgetting. Repression is leading to a cause rather than it being a type of forgetting.

Researchers have established the notion that repression is one of the defense mechanisms which individuals use to cope with anxiety, shame, guilt, etc. Any sort of negative feeling which people tend to avoid. They try to repress it. Now, when we talk about such aspects and ideas, it is important for us to understand how the monitoring is being performed.

This repression which we are talking about, this forgetting which we are talking about, are we able to monitor the output? Most of the time, what we have seen is that we have talked about the effortfulness of controlled learning. We cannot recall some information simply. We need to pay attention to detail at the time. So, how much time are we paying attention to some events?

How much attention are we paying towards that event? And if we are paying more time to information, then we are doing the rehearsal. And when we have time for rehearsal, then the information is going to be resistant towards forgetting. So, the detail of the time that is inattention and the lack of paying attention. The consequences of inattention are strongly on prospective memory errors.

Prospective memory provides us with insight into the planned actions that an individual has to perform today, tomorrow, or the day after tomorrow. When irritation is present, it

may directly impact the course of action. The course of action or remembering to take some actions in the future. So when this failure occurs, when the failure of prospective memory occurs, it is the failure of output monitoring. What does this mean? There is a course of action. Action 1, action 2, action 3, action 4. This leads to G, which is a goal.

Action. So what we see here is that people are failing in output monitoring. This suggests that people are not paying enough attention to what they are doing. So if action 1 to action 2 to action 3 to 4 leads toward the goal, but if you are not paying attention here, the process will not move. And that is what output monitoring is talking about.

If we talk about output monitoring, we have to understand the two kinds of output monitoring. And this output monitoring is extensively used in human factor ergonomics. In the study of human error management and human errors, we study the taxonomy of the error, the error types. Here, what we are talking about Two kinds of output rendering.

Omission, where we think that we have performed the action, but we have not done it. Commission, when the action has to be performed, but something else has been done. When an action has been performed other than the usual. You have to do Control F, but instead, you did Control D. You have deleted it.

The action but did not happen. It didn't happen. So, when we are talking about omission, we are thinking that we have performed some action, but actually, we haven't. A lapse has happened. So, the taxonomy of error, if you talk about it, there are several types of errors.

To name a few, it could be knowledge-based, rule-based, slips, lapses, or violations. Repetition. When we forget that we performed an action, we still repeat it again and again. This monitoring indicates that a certain action has already been performed. As a result of repetition, a repetition error occurs.

Repeating something that has already been done. Goal switches. Moving from one goal to another during an activity without realizing it. What is goal switching? This is a form of attentional shift.

Earlier, we discussed that attention is shiftable, sustainable, selective, and divisible. So when we talk about goal switches, it means we have to shift our attention from one goal to another. Omissions and reversals. Forgetting a key step in a chain of actions. When a chain of actions is missed, you return to execute the task again.

Because you are not reaching the goal site. So omission is happening, and then again the reversal. So we assume that the action we have performed, but we have missed it. Another point in the output monitoring is how we are monitoring it. It is confusion and blends.

Mixing up the object needed for an action with another action at the same time. So, a certain action needed to be performed at the same time. But, instead of performing action 1, We performed action 2. We mixed the actions.

The actions just got mixed. And this mixing resulted in confusion. So when we are talking about output monitoring, what we are trying to understand here is the nature of the error itself. This understanding gives us clarity on how much information is getting either lost, we are incapable of retrieving, or resulting in failure toward the goal. When we are talking about output monitoring, we have to talk about source monitoring failure.

What is the source of your information? What is the source? And if we are talking about the source, then the source is our mental lexicon. Source monitoring failure is the metacognitive act of judging. Metacognition, cognition of cognition.

Knowing about your cognition. The source of memory. Such as whether we read a particular bit of information and where we have read this or we haven't read this information at all. This understanding, this information storage, encoding, and storage is enhancing our mental lexicon. When we fail to retrieve where we have learned this information,

And what information we have learned, then the error is happening. So it is very important for an individual to understand what is the source of this information. Many a time we collect the information from a specific source X. From source X, we collected the information and we modified it. We modified it either in X form or an extremely new form. So, the question is, what is the origin of memory in source monitoring?

Details of the circumstances of the event we have to discuss in deciding what is there. So, the physical environment is there, where the event is going to occur, what sensations were evoked at the time, and other people who were present. When we talk about the sensation, this is the sensory system, and when these sensory systems are being triggered, They send this information to the human cognitive system. The human cognitive system then undergoes perceptual processes, attentional mechanisms, memory systems, in-memory systems, working memory, retrieval of long-term memory, response selection

happens, response execution happens, then again the feedback loop is given, going back to the sensory system.

Providing the feedback to the sensory registry that the information which you have collected from the physical environment is this. Do you mean this? Or do you mean something else? This feedback is a constant process. And this circular mechanism process is happening again and again to just monitor it.

To ensure the information which is coming from the sensory system. What is its source? Is it present in the environment or is it not present in the environment? Now, when we talk about the source monitoring failure, earlier we discussed the source monitoring failure. So, when we talk about the source monitoring failure, information about a specific time period tends to be lost as well.

And what is retained is relatively coarse in nature. This is a very simple process. Why are we losing this information? Sometimes specific information, autobiographical memory is there, and episodic memory is there without getting impaired. However, the information sometimes related to a time period is lost because of the complexity, because of cognitive load.

So, when we recall the source event information, memory becomes more difficult when different sources are highly similar. So, when we talk about wild cats, recalling the source information about the wild cat may create confusion. One explanation is that we monitor the details of the memories we retrieve and see if the details match our expectations and the source they come from. This monitoring provides an insight into the source from where I have gotten this information. The reason being, we are bombarded with thousands of stimuli.

And we encode these stimuli based on our selection. The information which we pay attention to only passes down to the short-term memory or working memory for further processing. But every time we monitor, we are making our system more and more robust and resistant towards the consolidation of information. So, We monitor it so that we know what information we have retrieved and if the information we have retrieved matches our expectations or not.

If there is a mismatch with our expectations, then the retrieval of the information is a failure. As familiarity with the source increases, you become more and more familiar with the source. Our ability to use the source information about the source seems to

decrease. Because once you get familiar, it becomes automatic. The information is readily available to you.

It's just like rehearsal, rehearsal, and rehearsal again and again. It's like repetition again and again. So what we studied in this lecture is repression. The concept and idea proposed by Sigmund Freud long before when psychology was still blooming. He proposed and discussed why repression is important.

He proposed that repression is motivated forgetting. Why is it motivated forgetting? Because people do have guilt, people do have shame, people are anxious, and in order to defend against these negative emotional and affective experiences, one has to come up with a coping mechanism. How to overcome these problems?

And to overcome these problems, he proposed 12 different mechanisms. Out of those 12, one is repression. People try to repress the information. The information which they do not need. We will try to study and investigate the role of output monitoring.

The role of output monitoring failure. Why is it failing? Why is it important for an individual? Why is it important for an individual to understand how much attention is being paid or how inattentive they are? If they are inattentive to the stimuli or the information processing, then the response selection, response execution, encoding, storage, retrieval, everything will be compromised. Before we discussed it, the source of monitoring failure. What is the source of information? From where are we collecting the information? Why is the source monitoring failure there?

How can we understand these processes and how they can be beneficial for the people? In the long run, we will also understand when the source is not present, when people are retrieving the information with the therapist, a false memory is being produced, and the high chances of false memory production are there. We have been discussing these elements in the eyewitness testimony, and one great example researcher in memory is Elizabeth Loftus, who discussed several concepts and ideas related to repressed memories, false memories, reasons for such failures, reasons for such processes, the need to repress information, the need to understand where the source of information is coming from and where it is going. Such an insight gives us an understanding and clarity about forgetting, the nature of forgetting, and why we forget information.

With this, I will end this session here. In the next lecture, we are going to conclude the topic of forgetting with some new topics. Thank you.