

Intentional Forgetting: Investigating Interpretations and Future Potentials of Cognitive Control

Alysha Higgins

School of Computer Science, University College Dublin, Ireland
alysha.higgins@ucdconnect.ie

Abstract. Memory is a faculty that proves difficult to master. It is a natural human process to forget, and it is often done so unintended. The concept of intentional forgetting focuses on the memories one does not wish to keep, namely those that are associated with trauma or may give rise to negative emotions such as anxiety, sadness, regret or anger. This paper investigates the current research on intentional forgetting, specifically the narrow interpretations of both intention and forgetting a memory, paired with the issues that arise due to the assumptions associated with these terms. In addition, mental context, mental representations and repression are discussed in order to decipher how this control over the memory process occurs. These actions are further discussed in terms of degree of intention, noting a difference between unconscious repression and intentional, control-driven alteration of memory. Intentional forgetting remains difficult to achieve. This paper aims to investigate and surface those difficulties, organising the missing pieces to promote a thorough understanding and improve future implementation.

Keywords: Intentional forgetting, Directed forgetting, Executive control, Memory, Unwanted memory, Mental context, Repression

1 Introduction

Intentional forgetting research argues for the possibility to obtain a greater control over one's memory by purposely ridding unwanted memories that may cause negative emotion or thoughts. What if one could hold on to the good while leaving behind the bad? While a promising start to aiding in instances of trauma and anxiety, as well as associated negative emotions such as anger, sadness and regret, the process of intentional forgetting is not as straightforward or adaptable to real life as the research may prove. My focus is to highlight the oversimplification of the terms 'intention' and 'forgetting' in the current research and to further suggest how the intricate nature of the memory process, including unintentional or unconscious actions such as repression play a large role in the ability to intentionally forget.

2 Related Research

Intentional or directed forgetting involves executive control over the memory process in order to forget unwanted memories. Intentional forgetting is often utilized in cases of PTSD, anxiety and phobias, and is structured around the objective of memory recall holding more intention and control [2, 4, 9]. To test this, experiments often involve a series of pictures or list of words from which the participant is instructed to either forget or remember certain items [13, 15]. Or, for example, a participant may be asked to envision a future event, paired with a given text classified as positive or negative [16]. Those texts are either instructed to be forgotten or remembered. In yet another task, participants were instructed to complete a series of actions, followed by a series of memory-related questions [14]. Though implementation differs, the central goal remains – a better understanding of how we forget.

Amongst various studies a few things stand out. First, if an attempt at stopping retrieval succeeds, often memories linked or connected to the intentionally forgotten memory are more likely to be forgotten as well [1, 2, 13]. Experiences related to the selected unwanted memory are similarly impaired [1]. So, in the case of envisioning a future event paired with a negative or positive text, situations linked to forgotten memories were forgotten along with the paired text. Secondly, the ability to intentionally forget specific events is inherently difficult due to the intricate nature of memory itself [5, 6]. Memory adapts and changes over time and even visual perspective alters. Sometimes an event is pictured from the first-person perspective, for example, while other times memories are retrieved from the third-person point of view and this change in perspective may affect the overall accuracy of retrieval [14]. Gaps or forgotten parts in memories are filled in for sensical purposes, even if the added information is not entirely accurate. Beliefs, emotions, and knowledge all evolve, affecting how we recall our memories [8, 10]. Whether a recall mechanism is blocked, or an alteration in the reconstructive memory process occurs, executive control over memory affects the ways in which memory adapts and functions in the future. Directed or intentional forgetting, while beneficial in theory, proves to be increasingly difficult to successfully achieve, as the variables upon which it relies are so diverse and challenging to control.

Matthew Eredelyi makes two statements, both of which boil down to the notion that memory is not always reliable. “If we instruct a subject to ‘reject and keep something out of consciousness,’ can the subject do this, and if yes, what happens to the ‘something?’” [6]. Memory is not always accurate and people “may inhibit memories or amplify errors of previous constructions in a process akin to succumbing to one’s own propaganda and the creation of myth” [6]. Whether forgetting is intentional or not, is it all simply a form of coping or rewriting the story to be in our favour?

Emotion, time elapsed, and the connection to other memories all play a vital role in remembering [18]. The mental context connected to a memory also becomes increasingly important. “The mental context in which we experience an event plays a fundamental role in how we organize our memories of an event (e.g. in relation to other events) and, in turn, how we retrieve those memories later” [13]. The context in which a person remembers something effects how or why the memory is recalled. The olfactory memory is a fitting example. Perhaps the smell of fresh cut grass transports the

mind to running about as a child or enjoying an outdoor lunch with close family and friends. These same memories, of course, have cause to connect to related memories and events as well. The fMRI research utilising two word lists weaved imagery in between words in one of the two lists in order to facilitate a form of mental context into the experiment, demonstrating that these mental contexts or representations affect how we remember [13]. In the case of a word experiment, this context refers to everything outside of the task at hand, which, in this case, refers to the word recall task. ‘Everything’ could refer to anything from the provided imagery between words to personal thoughts about the commute to the experiment, the colour of the researcher’s hair or feelings of stress or excitement during the experiment (and much more). Mental context refers to any thoughts that may be occurring during the experiment that are in turn unrelated to the task at hand. The researchers take extra care to note, “...each participant will have their own idiosyncratic constellation of slowly drifting thoughts” [13]. An instruction to forget causes an alteration in mental context. Participants no longer focus on these words they were asked to pay attention to moments ago and revert to what they were focused on before (the ‘everything else’) or instead focus on new information present at hand. Concluding remarks of this particular experiment include the term ‘recent past’ [13] which begs to prompt the question, what about former past events? Two gaps immediately stand out in this research, the first being the reliance on remembering as attention. Is forgetting only an absence of attention? Even if suppressed, forgetting is only depicted here in the present moment. What is suppressed or shown a lack of attention now, can with probable cause (the correct mental context, for example) be remembered later. And is intention simply directed attention? One cannot direct attention to forget for long, as the ‘everything else’ will undoubtedly return, but I think the role of mental context opens a pathway for discussion. Recreating the representation or contextual picture of an unwanted memory proves worthy of further research. Intentional or directed forgetting thus morphs into an intentional reconstruction of memory. The second gap being the narrow focus of intentional forgetting. While promising for recent memories, how does this research translate further to past memories? Often unwanted memories are not so recent, memories that one only comes to realise are unwanted due to the negative impact they have had over time.

Other research suggests that intentional forgetting results from a change in context but benefits of directed forgetting occur with a change in the encoding process [17]. It should be noted that this is not the single link to beneficial directed forgetting, but one that has been researched. Perhaps the participant does not take the forget and remember cues seriously, remembering all words, but the cue itself may not be as important as the encoding process [17].

Two questions remain from the current research. The first being, what exactly is intention? Second, how is a memory categorised as forgotten?

3 Repression

A discussion of intentional forgetting is only concrete so long as the opposing paradigm is made clear. As early as research completed by Johann Herbart to Sigmund Freud, the

terms ‘repression’ and ‘suppression’ are cast about, sometimes even interchangeably [3, 11]. Herbart found repression necessary, as our capacity for conscious thinking is not infinite [11]. Breuer and Freud paid special attention to acts of suppression and repression, the difference between the two boiling down to conscious state [3]. Suppression occurs consciously, not unlike a change in mental context as described above. Perhaps a person experiences a trying relationship that ends in heartbreak. A conscious reformulation of the memory over time may result in an altered context. The same memory that was once filled with negative emotion is now remembered as a positive, personal growing experience. When the person is reminded of the specific memory, they consciously change the context or emotions attached to the memory. The unwanted memory slowly morphs into something less painful, more manageable and even positive. Repression, on the other hand, is done so unconsciously. Both terms are depicted as motivated forgetting or a method of self-defence [3, 7]. Defending or protecting oneself, whether unconsciously or consciously is usually due to unwanted emotions or thoughts produced by the memory. Under this view, repressed memories would not be classified as intentionally forgotten, as the person may be completely unaware that they have repressed the memory at all. In order to intentionally forget, the repressed memory would need to surface. Had Freud then described a form of intentional forgetting as suppression? No matter the term, still the same difficulties remain, as forgetting intentionally is not as simple as it seems.

A twofold mechanism of repression is adopted in recent years, suggesting the process is (1) inhibitory, or a degradation of the unwanted signal and (2) elaborative, or an embellishment or addition of the wanted signal [6]. While focusing mainly on repression, Eredelyi aims to pick apart the term, further separating it from similar terms that are often categorised under the same branch. But with or without the adopted unified theory, repression remains a type of memory distortion, one that aids in the intentional forgetting of unwanted memories, begging the question: can anything be truly suppressed forever?

4 Intention

4.1 Interpretation

Being instructed to forget a word on a list could mean not paying attention to it in the first place. More so, when one is instructed to not think of something, that something is only thought of even more. What do the current findings mean by intention? What is their specific definition of intention? Intentional forgetting experiments often involve a list of words. The participant is instructed to either forget or remember the words on that list in order to test the ability of intentional forgetting [13]. If intention is simply a form of control over the recall process and being instructed what to remember and what to forget depicts that process of control, then this definition of intention may prove difficult to translate beyond a simple list of words and facts.

Intention in these models is based in attention. A ‘forget’ instruction prompts the participant to pay no attention to the word, while a ‘remember’ instruction prompts attention and rehearsal. In the case of non-experimental events, a person may want to

forget something far in the past. The use of attention at the time of the event is much more useful than after the fact, but that suggests predicting what the future holds in order to escape the possibility of a bad memory. One cannot predict what the future holds so the attention rule is diminished in the present.

4.2 Problem

True intention is difficult to judge, whether that be the intentions of another's actions or in this case, the intention to forget or remember a specific word in an experimental setting. Humans forget due to many different stimuli, whether they be internal or external. Emotional state or stress at the time of the event could play a role in whether the participant remembers the word or not. Stress or anxiety may prevent one from correct recall, similar to the inability to remember an exam question or one's presentation points. But once the exam is over and the stress subsides, recall suddenly becomes clear. Experiments involving word recall thus address a very specific notion of control over memory, one that is not yet broad enough to transfer to real life situations where it may be needed most such as cases mentioned above like PTSD, anxiety and negative thinking. For example, just as one may question another's motive or intention for acting the way they do, successful forgetting in these experiments does not necessarily prove successful forgetting based on intention. Emotion plays a key role in memory [8, 10, 12, 16]. Unwanted memories are associated with negative emotions such as fear, anxiety, etc., and motivation to forget subsequently increases in these negative incidences.

In order for the current research to translate to a real, situational memory linked to human emotion and most likely further attached memories branched from the focal memory, a large number of variables would need to be controlled for. Even in the case of a simple word experiment, different words could potentially hold different connotations or prompt certain memories that may seem unlikely at the start. For example, an assumed 'positive' word may prove negative for someone that links that particular word to a recent bad experience or memory. In order to test intentional forgetting on a detailed memory, it becomes difficult to take emotion out of the equation, as it may be the driving force behind what makes the memory unwanted in the first place. What develops is a definition of intention that spans wider than attention.

5 Forgetting

5.1 Interpretation

Current experiments that involve picture or word memorization assume the participant has successfully intentionally forgotten by failing to produce a certain item. At that particular moment, the memory would be described as forgotten. What happens next after the experiment ends? We unintentionally forget all the time. *What was that man's name again? Where did I park?* In order for intentional forgetting to be truly successful, the selected memory would need to fail to return at all. This proposes a second unanswered question, that being what is meant by forgetting?

Participants were more successful in intentional forgetting when a list of words was neutral, compared with a greater failure to forget when provided with a negative list of words, demonstrating an emotional constraint to intentional forgetting [15]. Experiments such as these assume that certain words will be depicted as neutral or negative by all participants. The role that emotion plays in forgetting is changeable. Unwanted memories are often linked to negative emotions of stress, anxiety, fear and sadness. In the case of the word recall tasks, certain words may carry different meanings to some. Emotions also change over time [8]. What once was negative could potentially turn positive and vice versa.

5.2 Problem

So far, countless studies suggest intentional forgetting is possible, but at the same time hold a very specific definition of what it is to intentionally forget. Intentional forgetting is characterised by successfully controlling one's memory, usually in attempt to forget unwanted memories that may give rise to negative emotions and thought processes. The manner in which intentional forgetting is often tested is by word memorisation and recall. Participants are instructed to either forget or remember certain words, followed by an instruction to recall those words. If the participant successfully forgets a word associated with a 'forget' instruction, the trial is marked as an intentional forgetting success [13, 16]. But is it safe to say the word is truly intentionally forgotten as long as the participant cannot recall it when prompted?

Intentional forgetting is placed into a box it seems, with the definition not reaching far beyond memorisation and recall in a laboratory setting. Although experimental studies control for external factors that may impact the participant, the very setting of an experiment itself could affect how the participant remembers. The definition often used for intentional forgetting is narrow and bares room for improvement. What happens after the study is complete? In order for intentional forgetting to be entirely successful, the forgotten words would need to fail to return even after the experiment is closed. The repercussions of recalling a word in the later months seem mundane but become increasingly impactful when transferred to real life memories. Intentional forgetting may be possible, but it proves more complicated than mere 'forget' and 'remember' instructions.

Word experiments suggest forgetting is the inability to recall when asked; when the person is reminded of the event or prompted to describe a particular detail, they are unable to recall the memory. This definition of forgetting fails to take into account the acts of repression and suppression the literature dives so deeply into. What is intentionally forgotten may be only unconsciously repressed or consciously suppressed until a later date when something triggers the memory. My suggestion is that the current models of intentional forgetting are too simple. The current research focus on strict experimental study, which relies too heavily on the notion that intention is steeped in attention and fails to explain forgetting in the long term.

6 General Discussion

It should be noted that while the word or picture-based experiment creates room for error when its core principals are transferred to real, complicated human memories, these types of experiments suggest important probable techniques for intentional forgetting. To construct an experiment with the same ideals but using existing unwanted memories associated with trauma, anxiety, phobias or the many negative emotions that may arise because of these, would prove increasingly difficult based on the complexities of memory described, including but not limited to suppression, repression, linked memories, false memories and attention.

Alongside the obvious examination of practical use, there lies an imminent concern in timing. Take for instance the example of contextual change as a factor in forgetting [13]. Imagery produced before or after words affected memory, as well as if the words were labelled as positive, neutral or negative. In the case of trauma patients, those negative words may prove even harder to intentionally forget. These experiments listed are usually conducted in one day or over a span of days, with ‘remember’ instructions almost immediately following a ‘forget’ list. It is rare that we see long-term effects tested.

Forgetting is often associated with negative connotations. Forgetting is a hinderance in many cases – we want to remember every detail of a beautiful, memorable day, so much so that we take photos and may even write down specifics to read over at a later date. Grocery lists, daily and weekly agendas are all written down so as not to forget because forgetting would be troublesome. Research is plentiful on how to prevent or postpone forgetting associated with aging. But in certain situations, perhaps forgetting could be viewed as beneficial. What can be unintentional and seemingly out of one’s control can also be intentional, as the goal of intentional or directed forgetting is to take action, controlling the memories one wants to forget. Just as one utilises memorisation strategies in order to remember, alternative tactics can be used in order to purposely forget. Intentional forgetting can be used in cases of trauma, anxiety and other negative emotions and thoughts brought about by unwanted memories that may in turn negatively impact one’s cognitive process in terms of future goals, present tasks and thinking at hand, desired alternative positive emotions, as well as a multitude of other hinderances.

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