To what extent can a child’s testimony be seen as reliable as an eyewitness?

introduction

Children, just as adults, often become involved in legal matters and may be required as a witness in the justice system. More often than not, they are seen as invalid due to apprehensions regarding the reliability of recall in youth. Eyewitness testimonies are crucial constituent to the management of justice, hence when a child is a lone witness, they are crucial for successful prosecution despite allegations of unreliability. Anample amount of psychological research exists on children’s memory *(Myers, 1996)* . The perception has been that children are susceptible to vivid imaginations, labelling them as suggestible and prone to distortion. Therefore, they are thought to be inaccurate as evidence *(Howe & Knott, 2015).* Psychological research on eyewitness memory, brain development and recall are consequently of significant practical value, and questions regarding the validity and reliability of children as witness may arise. These questions provoke notable public debate, again highlighting the significance of this topic. It is known that human memory, regardless of age, is inevitably susceptible to change and decay. The extent at which memory in children is more or less susceptible, when in comparison to adults, will be discussed. To what extent can a child’s testimony be seen as a reliable source during an eyewitness situation?

Many components of psychology are relevant within the court room such as investigator bias, defendant characteristics and of course, subject specific eyewitness memory flaws. Eyewitness testimony is a specialised focus within cognitive psychology. It can be defined as a specific form of evidence, obtained from a first-hand witness who makes a solemn statement or

declaration of fact in a court setting. Communication of evidence linking to an offence by the witness is a sacred duty of assisting the court in the discovery of the truth. During this process of declaration, children are seen as unreliable due to factors mainly regarding children’s brain development and associated memory abilities, suggestibility, distortion and false memory. However, in this paper it will be discussed whether the idea that children are unreliable in recall is a stereotype or fact?

To be country specific, the Australian Government and its associated law have traditionally viewed children as unreliable witnesses. This view led to rules being put into place, limiting children’s capability to give evidence and requiring corroboration and judicial warning in relation to the accuracy of children’s evidence. For example, in Section 23 of the *Evidence Act 1958* it is stated,“(1) *Where, in any legal proceedings, any child under the age of fourteen years called as a witness does not in the opinion of the court understand the nature of an oath, his evidence may be received, though not given upon oath, if, in the opinion of the court, he is possessed of sufficient intelligence to justify the reception of the evidence, and understands the duty of speaking the truth" (Government, 1958)* .

Due to the commonality of children being involved in the witnessing of an event requiring legal action, society struggles to accommodate and utilise these children within the legal context. The possible resulting injustice of child victims due to having this section in the statutes is another societal issue around the perception of children’s reliability. The perception has been that children are more prone to vivid fantasy and imagination than adults; their brains have not yet fully developed and that they are suggestible

meaning their evidence is inaccurate *(ALRC. 2019).* This view has been directly reflected in Australian rules of evidence.

Studies looking into the ways in which memory can be altered and its validity after a period of time have been conducted in the past, producing valid results. Factors including brain development stage, suggestibility, the situation and of course, age. Therefore, a difference in recall ability and validity of adults in comparison to children should be evident. Studies such as *Goodman & Reed (1986)* agree that there is a difference in recall ability between adults and children, resulting in the doubt of validity in children eyewitnesses. However, other studies and theories such as *False Memory* and *Henry Otgaar (2018)* have shown that the invalidity and suggestibility in memory recall is just as evident in adults.

Claim: Children are Unreliable Eyewitnesses

Memory and Affecting Factors

For the purpose of this essay, memory will be defined as the scheme that allows us to retain information for either a short, or long period of time in order to recall. Memory storage can be defined as the retention of information, whereas memory retrieval is the ability to bring information into consciousness to recall *(Mastin, 2019).* Retrieval and recall can be assisted by cues associated with pre-existing schemas and the original learning that facilitates recall of memories. Iconic memory is a sensory store that holds a mental representation of a visual image for a split second, which can be prompted by stimuli during an eyewitness situation. Echoic memory is

similar to iconic memory, simply related to auditory memories instead of visual. Sensory memory is the storage system that holds memory of sensory impressions for a very short time. All of these forms of memory combine to assist people to gather, retain and recall information from an experience and are hence relevant to eyewitness situations.

Memory can be conceptualised as comprising of three stages: encoding or perception; storage or retention; and retrieval *(Hannibal, 2009).* A failure in one of these stages may result in a person’s failure to recall accurately *(Thomson, D. 2019).* All witnessing is dependent on a person’s retention abilities. In this paper, the way in which differences in age and personal abilities affects a person’s cognitive abilities will be explored *(Fredin, G. 2011)* .

Brain Development

The majority of cognitive activities require high levels of brain development; hence children are disadvantaged in early stages of life. One of these cognitive activities is memory and recall. The way in which a child’s brain develops is directly related to both genes and the environment of the child’s upbringing. It is this interaction between biology and experience that shapes and affects the developing brain. While genes supply the initial blueprint for development, it is the experiences, traumas and relationships children have in their daily routines that decipher the shaping of their brains. Families have a vital, ongoing influence on children’s development due to their gene contribution and control over environment *(aedc. 2019).*

Each child develops in their own way, at their own unique pace. For example, some children have exceptionally strong logic and reasoning skills, while others excel in memory abilities. The same can be said for cognitive weaknesses. This shows that every child has different cognitive strengths and weaknesses and perhaps the perception of children being unreliable eyewitnesses should not be so general, but instead, child specific.

According to Dr. Noa Ofen: Professor in Wayne State’s University Institute of Gerontology and Department of Paediatrics; cognitive ability dramatically changes between childhood and adulthood. This significant change parallels with dramatic developments that occur in the structure and function of the brain over years of growth. Piaget’s Theory divides this growth into stages: pre operational, concrete operational and formal operational *(Cherry, 2019).*

Primarily during the ages of two through to seven (pre-operational stage), children develop skills in memory and imagination. The ability to understand things in a symbolic manner, and to recognise, understand and enforce the ideas of past and future is also developed during this stage. During this stage, it is accepted that the validity of a child’s witness statement may be lowered simply due to the lack of vocabulary children hold. Despite the child having the cognitive ability to recall the event, they simply do not hold the necessary descriptive vocabulary to report details. Hence, during these ages’ drawings illustrated by children may be used as a statement rather than a traditional verbal statement.

This disadvantage through vocabulary is an affecting factor during interviewing. The literature on interviewing uses complex adjectives to

describe questions and retrieve details; including open-ended, focused, specific, suggestive, and leading questions, to name the most common. Suggestibility is a common concern during this interviewing process and often leads to children falling victim to answering questions differently based on leading questions. This process of suggestibility will be discussed in detail further on in the paper.

For the following four years of the child’s life, up to age eleven, children begin the concrete operational stage. This stage involves the awareness of external events and the understanding of empathy and feelings other than their own, becoming more socially aware of surroundings and losing the egocentric traits that come with young age. The child begins to recognise and become aware of the way emotion can be linked to situations. After the age of eleven, the child enters the formal operational stage and finally gain the ability to use logic to problem solve, view and associate with the world around them, and be aware of and organised for the future.

In 2012, Dr. Ofen and her fellow co-workers conducted a study exploring the development of the brain associated with successful retention and recall of scenes. The aim of the study was to explore the way in which brain development (in areas functionally associated with recall) affects memory retrieval for scenes.

Ofen et al. explored the development of neural underpinnings of memory from childhood to young adulthood by asking 80 volunteer participants (aged eight to 21 years old) to study 140 images of specific indoor and outdoor scenes, presenting each image for 2. 5 seconds. The participants then

judged whether the image depicted an indoor or outdoor scene. Immediately after the study phase, an fMRI scanner was used whilst the participants were shown the same 140 scenes along with 140 new, unseen scenes. They were asked to dictate whether or not each picture was presented originally. The participants provided consent forms, fixation crosses were used to assist participants with focus and variable intertrial intervals were used to increase fMRI validity.

Results showed that despite the highly accurate HIT rates in the study phase (96. 9%), there was a positive correlation between accuracy in encoding and age ($r = 0.50$, $p < 0.001$). This suggests that attention was lacking resulting in poor accuracy. Reaction time for encoding was not influenced by age. It was found that it was more likely for younger participants to not respond at all ($r = 0.43$, $p < 0.001$) or to press two different buttons for an item ($r = 0.32$, $p = 0.006$) during the recognition test.

These results allowed the researchers to identify how the brain reacts during the process of recall. The findings proposed that cortical regions of the brain had relations to attention and strategic control showed the highest developmental changes within the brain for memory retrieval. It was that older participants used the cortical regions more than younger participants when accurately retrieving past experiences, which supports upcoming claims of attention having significant importance in recall *(Ofen, N., Chai, X., & D. I, K. 2012).*

Another difference between adult and child recall is the amount of information regarding an event that is available to be noticed. In order for

information to be useful in recall, it needs to be earmarked as significant and then stored in memory. The information that a person selects for remembering is determined by a person’s amount of life experience, level of knowledge, stage of cognitive development. Ability to use reason to draw inferences from pre-existing schemes and the specific way in which the person copes with the stress that comes with trauma. Therefore, children are obviously disadvantaged simply due to the level of brain development and limited experiences that comes with age *(Myers, 1996)* .

While children are physically and cognitively developing; attention, or lack thereof, can affect memory recall in eyewitness situations at a substantial level, as supported by Ofen et al.’s study. Attention has one of the highest impacts on memory recall during the encoding phase. Ofen showed that children tend to create weak “ memory” connections in the brain due to lack of focus and accuracy of recall is therefore flawed.

Suggestibility and Distortion

Further cognitive factors affecting the recall in younger subjects include suggestibility and distortion. *Goodman and Reed (1986)* explored recall as a function of age. Distortion is extremely common in recall and could be the result of reversal in false memory. A developmental reversal in false memory is the seemingly illogical phenomenon of higher levels of false memory in older children, adolescents, and adults than in younger children *(Holliday, R. Brainerd, C. & Reyna, V. 2011).* This phenomenon of recalling something differently to how it originally occurred, was initially studied by pioneering psychologists Pierre Janet and Sigmund Freud. False memory and forgetting

are the two most basic forms or distortion in episodic memory. Goodman and Reed conducted a study to explore this phenomenon further.

Goodman and Reed’s study examined the effect of age differences in eyewitness testimony. Children (three and six years of age) and adults interacted with an unfamiliar man for five minutes. The witnesses were then asked four to five days later to answer questions (both objective and subjective), recall events that occured during the interaction and identify the confederate from a line-up.

It was found that adults and six-year-olds achieved similar results regarding their level of performance during recall of events prompted by objective questions. However, it was also seen that adults were able to recall a larger amount of information (regardless of whether or not it was correct or incorrect), than children. Three-year-olds were not able to answer as many objective questions accurately and were the most suggestible. They also recalled a small amount regarding sequence of events and were less successful in identifying the confederate. Goodman and Reed’s study furthers knowledge on the ability for children to provide accurate eyewitness reports. The conclusion to be drawn is unequivocal; stating that recall steadily improves with time from three to twelve years of age and, in some cases, beyond twelve.

Feben’s study in 1985 also represents ways in which children’s recall abilities can be limited. Feben showed her subjects a three-minute video on firefighting and then tested the subjects’ ability to recall details. Feben’s study found that when children were asked to recall specific details of

objects shown in the videos (e. g. colour of something); their success rates did not differ greatly from the results gained by adults. However, the accuracy of children’s recall of the overall theme of the videos and the sequence that events played out was significantly lower than adults. These findings suggest that the relationship between recall and age is far from a simple matter.

Saywitz (1987) had participants listen to descriptions of crimes, then gave them three different types of memory tests. There were two relevant findings. Firstly, it was seen that eight and nine-year-olds had the tendency to embellish the story more than older participants. Secondly, younger children were accurate in recall when asked about specific features of objects (such as hair colour and clothing) and events. These latter findings are consistent with the findings of *Feben (1985),* stating that detailed memories were as easy for children to recall as adults, but simple story lines and sequence of events was not recalled as accurately. This may be due to abstraction by children.

Distinguishing Fact from Fantasy

Recent studies have investigated whether or not children have the ability to distinguish fact from fantasy and whether or not they have a propensity to lie deliberately. Research has found that often children are just as accurate as adults when it comes to discriminating the origins or memories. Ironically, research indicates that the main problem with children’s evidence is in fact not the risk of false allegations (although this is still a possibility) but instead, their significant level of false denials and retractions. Although it is possible

to encourage children to claim that an event occurred (even when they are well aware that it did not occur), it is a challenging task. Children lack the ability to lie seamlessly. Hence, when they make false statements, often they are not very credible, and the child does not persevere with the lie *(ALRC. 2019).* They simply do not have the ability to maintain a realistic and credible false story, this ability however is something that adults hold.

Counterclaim: Adults are just as Unreliable as Children

Falling Victim to Suggestibility

Adults memory, like children, is not infallible. Although there are developmental differences between children and adults in regard to recall ability, children can provide accurate and significant information.

Until Elizabeth Loftus, John Palmer and colleagues began considering the details behind the reliability of memory in 1974, court systems often assumed that the testimonies given by eyewitnesses were based on highly accurate memories. The aim of Loftus and Palmer’s study was to investigate the ways in which retention and recall can be influenced by information learned after the event occurred, exploring the way in which people (regardless of age) fall naturally susceptible to suggestibility. Their experiment involved mature age, adult participants, which makes its findings of interest when comparing previously discussed research on children.

Loftus and Palmer has their participants watch multiple different videos of car crashes occurring at different speeds ranging from 30 to 70 km/ph.

After the participants watched the videos, they were asked, “ Approximately what speed were the cars moving at when the crash occurred?” For other participants, the word that was used (“ crash”) when asking the speed was switched for a synonym (“ bumped”, “ collided” and “ hit”). In Loftus and Palmers analysis, it was found that the answers that participants gave to the question did not accurately match the realistic speed. Instead, the participants tended to rank the speeds differently depending on the descriptive word they received. For example, participants answered higher speeds when the word “ smashed” was used when compared to lower modality words like “ bumped”. This was one of the first experiential demonstrations of our memories’ vulnerability to suggestion and proved Elizabeth’s particular concern regarding how subsequent information can affect an eyewitness’s account of an event *(Loftus, E. F., & Palmer, J. C. 1974).*

Loftus’ findings indicate that the way in which questions or prompts are asked can cause original memories to be modified, changed, affected or supplemented at all ages. This alteration of memory from external factors is called suggestibility, seen in children *and* adults.

False Memory

False memories are mental experiences that people believe to be accurate representations of past events, when in reality, they are false. While simple memory failures are experienced by most every once in a while, false memories are different. They represent a clear recollection of an event that never occurred in reality. They often revolve around trivial details or more

serious involvements which makes them particularly common during eyewitness situations.

Many studies similar to Loftus and Palmer’s have found that memory is prone to accepting suggestions when a false memory is provided. Recent research conducted by Dutch psychologist Henry Otgaar Maastricht University, reports that under certain conditions, children may be at less risk of falling victim to false memories than adults. *(Otgaar, H., Howe, M. L., Merckelbach, H., & Muris, P. 2018).*

Otgaar’s report compares research on memory and suggestibility in adults and children, keeping in consideration assumptions that children are less accurate witnesses. In comparison to adults, they are thought to be less reliable in their recall, and more prone to false memories and suggestibility.

In 1959, John Hopkins and James Deese conducted a collection of experiments on memory and in particular, false memories. Their experiment began with participants been shown groups of words. The words all related by belonging to a category. For example, one group may contain the words “ baker,” “ dough,” and “ flour” but miss an important correlating word such as “ bread”. The participants were later asked to recall the words. It was found that many participants said that they recalled the important correlating word (“ bread”), although they were never physically shown this word. It was seen that adults and older children claimed to have seen the missing word more regularly than younger children. The adults were also very firm and confident when declaring they had seen the missing word.

In 2016 and 2017, Otgaar and his colleagues tested this same study idea in more realistic, modern scenarios. The investigation gained results shown that after participants viewed a video of a specific scene (e. g. a bank robbery without a gun present), children were less likely than adults to agree that the associated element (the gun) did in fact exist in the video; despite the fact that they never saw it in reality. This study, along with follow-up and extending experiments supported the concept that young children are not as prone to suggestive false memories than adults. Adults also tend to go along with suggestions when they can be linked to a pre-existing mental schema. Both Hopkins, Deese and Otgaar showed through their investigations that under specific conditions, adults are more susceptible to suggestion and false memories when compared to children.

Distortion is another way in which recall of events is inaccurate. Despite methodological flaws; this process of distortion and the different forms it exists in can be seen in *Bartlett’s* study in 1932.

Koocher et al. conducted studies demonstrating how young children’s memory fades more quickly than adults in some events, however this finding is not conclusive. It is also important to understand that *“ for salient features of an event to which children attend, consider important, and thus encode well, children may at times be no more susceptible to forgetting, memory impairment, and suggestibility effects than adults” (GP, 1995).* Despite the definitive resolution of research on memory fade over time, there is general understanding and agreement on importance of prompt interviewing after witnessing.

Direct Comparison of Age

Barbara VanOss et al. identified that the use of children in criminal and legal proceedings has been a controversial issue for some time, leading her to question whether or not a child should be permissible to testify? VanOss and her colleagues conducted a study comparing children and adults on eyewitness tasks, showing the extent at which, the age gap affects recall abilities. Participants aged five to 22 years viewed a confederate interacting with the experimenter and later were asked to recall the events, answer objective questions (including a leading question) and to identify the confederate from six photos. The results indicated that although young children were unable to freely narrate what they had observed as thoroughly as adults (simply due to lack of vocabulary), they were as accurate as adults in answering objective questions and in identifying the confederate. Additionally, there were no age differences in susceptibility to leading questions *(VanOss Marin, B., Holmes, D., Guth, M., & Kovac, P. 2019).*

Conclusion

In meeting the challenge of children as victims of crime, interviewees, and witnesses in court, the search should not be for simple or categorical answers; there are none. Instead, the judges, legislators, and lawyers who make and administer the law should acknowledge the complexity that comes with young witnesses.

Abundant amounts of research including *Goodman & Reed (1986), Ofen (2012), Feben (1985) and Saywitz (1987)* have produced studies with results suggesting that children when compared to adults, are unreliable witnesses.

The effect of attention, positive correlation between recall ability and age and pure complexity of this relationship was explored.

Loftus & Palmer (1974), Hopkins and Deese (1959), Otgaar (2018) and *Barbara VanOss et al. (2019)* conducted studies and research on the processes on memory and compared the abilities of both adults and children and found that the gap between the two may be less significant than claimed. It was found that original memories can be altered at any age, lack of vocabulary leading to poor accuracy may be more of an issue than recall abilities themselves and false memory is even more evident in adults than young children due to larger amounts of pre-existing mental schemas and the ability to lie.

Professionals trained in law can benefit from closer alliances with mental health specialists conducting research on memory and the impact of the testifying process on children in eyewitness situations. Additional considerations relating to this paper include the performance of children on the witness stand (ability to communicate, awareness and respect for solemnity of situation) and the way in which specific circumstances may affect a child’s recall ability. For example: sexual abuse and domestic violence are common forms of trauma experienced by children. Research has shown that both neurocognitive impairments and a history of childhood abuse are highly prevalent in patients with schizophrenia (Shannon, 2011). This shows the negative association between childhood trauma and memory function, which is of benefit to further explore.

Enhanced communication between mental health and legal professionals will increase fairness for defendants, will facilitate compassionate and age-appropriate treatment of young witnesses, and, in the final analysis, will further the ultimate goal of discovering the truth.

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