Age affects eye-witness testimony accuracy

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Abstract

Eye-witness testimony are statements that represent an eye-witness memory, making it un-credible and unreliable as memory is flaw-ed. Through history, majority of innocents being convicted of crimes they did not commit were due to inaccurate or faulty eye-witness testimony. The research paper looks at how age can affect the accuracy of eye-witness testimony and subsequently suggest guidelines and solutions that can minimize this phenomenon.

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(1) Introduction

Eyewitness can be defined as a term used to represent on-lookers who saw an incident or event occurring. The statements taken from them then becomes a lawful term. Statements can include details of event, descriptions of a person, things that are of observable traits. According to

Saul McLeod a tutor at The University of Manchester and Sheehan a senior associate law counsel for the US Government, juries tend to believe and trust eyewitnesses statements, considering their statements as dependable. According to McLeod (2009) and Sheehan (2011), there have been arguments that refutes eye-witness statements as a reliable source, as the statements could be influenced by psychological factors such as stress.

Eye-witness testimony are representations in statements of the eye-witness memory, thus carrying the underlying element of subjective and perspective in it, which speaks volumes of it being un-credible and unreliable. According to statistics from the innocent project, 71% of the people who have been exonerated from their crimes they did not commit had to do with inaccurate eye-witness testimony and 17% of the people who were exonerated had to do with informant testimony.

The innocents project further demonstrated the issues of inaccurate eye-witness testimony with more than half of the exonerated cases as a result of inaccurate eye-witness testimony. It has led to the conviction and suffering of the innocent, and more importantly prevents convicting the real perpetrator.

According to West & Stone (2013) and McLeod (2009), psychological factors might not be the only factor that can affect the accuracy of eye-witness. There is a need to understand that memory is imperfect and could be flawed. However, despite claims of eye-witness testimony might not be such a credible and reliable source of information, it is still serves as important information in an investigation, especially in scenarios where eye-witness testimony is the only evidence or way to prove something. In such scenario, it is of utmost significance to check just how reliable our eye-witness statements are.

According to (Memon, Hope & Bull, 2003), and (Kukolja, Thiel, Wolf & Fink, 2008), records show psychological factors and age can work hand in hand, affecting the accuracy of the statement. In addition, by looking at how age can affect the reliability of eyewitness statements, we can also look into the integrity of eye-witness statements and consider how much trust could be placed on eye-witness statement based on their age. It also offers insight on the other factors in relation to age, which could affect the accuracy of eye-witness statement, such as stress, memory deterioration with age (Working Memory Capacity), and false memory in relation to age. Furthermore, eye-witness testimony as the representation of the memory in eye-witnesses symbolizes that the credibility and reliability of the statement is being exhibited through the eye-witness. After all, the truth that eye-witnesses have sworn or promised to tell is their perception of the truth and not the truth of the reality, thus by examining how age can affect the accuracy of the testimony, perhaps we can create a guideline for scrutinizing and using a testimony that has higher credibility and reliability.

The research paper hypothesizes age plays a significant role in the accuracy of eye-witness statement. Age can have effects on the accuracy of eye-witness statements through working memory capacity, false memory and stress.

The age range of younger adults should be considered from 18-30 and older adults age 52 onwards. Furthermore, the scope of inaccuracy would be defined as being unable to recall the full event or recalling false scenarios of the event or the mixture of both.

Limitations: Due to time restraints, only secondary resources such as studies and experiments of other researchers would be used. As such, the study might not take into account other external factors which could be present in a realistic event such as how a law enforcer might take the testimony. Due to the large range of ages, the study only takes younger adults as a representative for young individual and older adults for older individuals, thus further investigation needs to be conducted on children.

The methodology used in the research paper will be literature review, using the concepts, studies and experiments of other researchers to understand the problem and find a solution.

(2) Age as a factor in working memory capacity

(2.1) Working memory Capacity (WMC)

Working memory, is a term that was coined by Miller, Galanter and Pribam. It is the scientific name for short-term memory used for carrying out task that requires cognition and problem solving. The task can involve things such as learning, reasoning and comprehension. The working memory has a part to play in the minds information-processing system, having an active role in the encoding, storing and retrieving of information. The Working Memory Capacity is an ability that allows one to retain information that you have just seen (McGrew, 2009). It is a cognitive function that allows one to hold information in the mind, managing them. Additionally, the working memory capacity differs from individual, and is measured by

one's ability to recall. (Underwood, 2017). As a result, the state of an individual working memory capacity is related to the accuracy of one's testimony from their memory, as it can affect how well an individual can recall something they have seen.

(2.2) Age and its effects on working memory capacity

According to Keating, Brodie, Wiegand & Morcom (2017) and McNab et al. (2015), studies show that aging is a cause that diminishes the capability to retrieve information from episodic memory. From the studies, it has shown that the ability to consciously recall memory from the past has a link to age, affecting the retrieval of the information. As a common experience, senior citizens often complain about being unable to recall events. The higher the age of an individual, the greater the chances one has in failing to recall memory of the past. With older age affecting retrieval of information, affecting the ability to recall what have happened statements given by older adult should not be seen as a reliable source of information. This is especially so when the incident has passed for a long period time as the memory could have been diluted by time.

(2.3) Lower WMC affects processing speed

Through experiments, according to Kersten, Earles & Upshaw (2013) and Rosa & Gutchess (2013) younger people have a better representation and information that is more accurate in regard to the actual event or incident. Futhermore, according to Caplan & Waters (2005) and Keating, Brodie, Wiegand & Morcom (2017), studies have also shown that age has an impact on processing speed in older adults. Young adults were seen to have higher processing speed and working memory capacity, and older adults tend to have lower processing speed and working memory capacity. Therefore, with the lowering of memory capacity in older adult due to age, it has affected their processing speed. In addition, there is a link between the duration of exposure and processing speed. In an experiment, it was observed that when it comes to events or incidents regarding short exposure, younger participants do much better as compared to older

participants. (Memon, Hope & Bull, 2003). The above findings, supports how older age is related to lower processing speed, and suggest that lower processing speed can cause lesser encoding of information in short exposure for older adults. In addition, it suggests that older adults might not be able to remember the whole process of what they have witnessed during the incident thus causing their interpretation of the event to be less accurate then younger adults.

(3) Age as a factor with regards to false memory

(3.1) False Memory

According to Loftus who coined the term false memory, it is distorted memory of an actual experience which could result from past experience. (Loftus,1994). The phenomenon known as false memories provides insights as to why confidence in remember something accurately does not mean that it is accurate, suggesting that memory is something that is fallible and not fool-proof accurate. As a common phenomenon being experienced in people, often times there are different versions of what one remembers and what the other party remember. The disparity is a result of different recollection from different individual or parties, especially when one believes that his or her version is the truth and the other's false. In an experiment conducted from a study, it has shown that it is distinctly possible for eye-witness to be confused about the actions carried out in the scene. The eye-witness could be confused between the actions of the victim and the perpetrator. Eye-witnesses can also remember inaccurate information. Eye-witness might even remember actions or sequences that did not occur during the event or scene creating the situation of false memory recollection**.** (Kersten, Earles & Upshaw, 2013). According to an article *why does the human brain create false memories* published by Hogenboom, a BBC science reporter, false memories can have very serious implications when it comes to contributions of eye-witness testimony, leading to eye-witness misidentification. Furthermore, with constant reinforcement of memory being an unreliable source of information, especially when there is some history of false memory being used as evidence in the past cases causing the conviction of the innocent, it is important that one checks the eye-witness testimony.

(3.2) Age affects False Memory

In addition, an experiment conducted in another study played out a staged assault, the eye-witnesses were passer-by who were oblivious to the experiment. According to the experiment conducted, 40% of the viewers were able to identify the correct transgressor whereas 25% of the viewers identified the wrong transgressor. The experiment also showed that when it comes to events or incidents regarding short exposure, younger participants do much better as compared to older participants. (Memon, Hope & Bull, 2003). The experiment illustrated the dangers of solely using eye-witness testimony, and demonstrates the fallibility of these statements. Furthermore, the experiment sheds light on the necessity of testimony reinforcer such as evidence which could consist of video-footage, forensic evidence and etc. In the experiment, it also showed that older adults are more likely to have false memory recollection as compared to younger adults. This is due to the older adults being susceptible to using their experience or familiarity, to associate it with the information of the event. (West & Stone, 2013). The study suggests that false memory have strong connection to high self-descriptiveness. It observes that older adults have higher rates of high self-descriptiveness being used in their statements and noted that the higher rate of high self-descriptiveness used in older adult statements, could have caused statements to be inaccurate and even the creation of false memory. (Rosa & Gutchess, 2013).

(4) Age as a factor in stressful situation

(4.1) Stress during Encoding of information and Retrieval Period

The encoding period of information refers to the period where an individual stores information intentionally or unintentionally during an incident, event or situation. According to Kukolja, Thiel, Wolf & Fink (2008), it was observed that that during the encoding period, stress can have a positive effect in the prefrontal activity in the young but not in older subjects. This phenomenon proposes that factors such as the situation of what the eye-witness had been through and age should be taken into account together. It furthermore suggests that if the younger adult was in a stressful situation such as being the victim, the encoding of the

memory would be stronger, which in-turn could help in the accuracy of the eye-witness statement. However, if the eye-witness is an older adult, and have been through a stressful situation, his memory of the event might not be as accurate. The findings suggest that this could be a consideration when determining whether the eye-witness could be a reliable and accurate source of information. Furthermore, perhaps surveillance camera or certain kind of evidences should be collected to reflect the situation of what the eye-witness have been going through during the incident.

The retrieval period of information refers to the period where an individual recalls information of a certain event, incident or situation. In addition, the study has reflected that higher stress level affects older adults negatively as compared to younger adult during the retrieval of information. (Kukolja, Thiel, Wolf & Fink, 2008). The calculation of stress level can be determined through the cortisol saliva, and should be calculated before and after their testimony. With stress having a negative effect during the retrieval period for older adults, perhaps when using older adult's statements as eye-witness testimony we should conduct it in a less stressful environment, in places of comfort such as their homes. If the testimony of the old adult was taken when his or her cortisol level is high, we should not consider it as a reliable source of information and should check their information with other statements or evidence. Furthermore, investigators should not use intimidating tone or words that could put the eye-witnesses at stress or unease, as this could affect the accuracy of their testimony.

(5) Discussion

As a whole, the findings do not support the hypothesize age playing a significant role in the accuracy of eye-witness statements. However, findings show that age does have some effects on the accuracy of eye-witness statements.

Additionally, the older one is, the more one is subjected to giving statements that is inaccurate. Age can cause one to be subjected to higher risk and tendency in recollecting false memory and inaccurate

information. Investigators should be more aware of eye-witness statements given by people who are older, could be inaccurate or even from false memory.

//Additionally, investigators should create environment that is more favourable for older eye-witness, to help them give accurate information reducing the chances of receiving inaccurate information or false memory eye-witness testimony. The environment can consist of taking statements earlier and helping the eye-witness to get into a relaxed mood. Subsequently, factors such as eye-witness exposure duration to the incident, and the way the testimony is being recounted should also be taken into account especially for older adults.

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