



Eyewitness recall and identification abilities of adolescent and young-adults



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ARTICLE INFO

Keywords:

Adolescent
Young adult
Eyewitness identification
Lineup procedure
Eyewitness recall
Perpetrator descriptor

ABSTRACT

Descriptive and identification abilities of adolescent and young-adult eyewitnesses were examined. Adolescents ($M = 16.41$ years; $N = 319$) and adults ($M = 20.03$ years, $N = 300$) viewed a videotape of a staged theft and then were asked to recall and identify the perpetrator from a target-present or target-absent lineup. Participants were shown one of five lineup procedures (i.e., simultaneous, wildcard, elimination, elimination-plus, or elimination with wildcard). Adolescents reported fewer descriptors compared to adult eyewitnesses, although the proportion of accurate descriptors was comparable. When examining identification accuracy, no age differences were found. Overall, participants were more accurate in target-absent compared to target-present lineups. When examining the data by target presence, there was a trade-off between the rate of correct identifications and correct rejections as a function of lineup procedure. The confidence-accuracy relationship and the relation between describing and identifying also are discussed.

1. Introduction

Often, after witnessing a crime, an eyewitness may be asked to provide a description of the perpetrator, and also may be asked to make an identification from a lineup. Although perpetrator descriptions and lineup identifications may be heavily relied upon during an investigation and the prosecution of a suspect, there are few studies that examine the ability of adolescent witnesses to accurately provide these details (Pozzulo, Dempsey, & Pettalia, 2013; Pozzulo & Warren, 2003). The lack of attention on adolescent eyewitnesses is concerning, given that adolescents are a unique population that are at an increased risk to be both victims and/or eyewitnesses to violent crime (Statistics Canada, 2008; US Department of Justice, 2012). In fact, in 2009, Statistics Canada reported that the rate of violent victimization against adolescents and young adults (i.e., aged 15- to 24-years-old) was approximately 15 times higher than that of older adults (i.e., aged 65-years-old or older; Perreault & Brennan, 2010). Mid-adolescents (i.e., ages 16- to 17-years-old) also are more likely to be involved in, or accused, of criminal activity when compared to younger adolescents (i.e., 12- to 15-year-olds; Alam, 2015). Similarly, in 2010 in the United States it was reported that mid-adolescents (i.e., ages 15- to 17-years-old) had a higher rate of serious violent crime against them compared to younger adolescents (i.e., ages 12- to 14-years-old; 15.9 vs. 12.0 per 1000, respectively). Taken together, these statistics suggest that adolescents are often involved in, victims of, or witnesses to criminal activity.

Despite adolescents' increased likelihood to be involved in a crime, the role that youth play in the criminal justice system – specifically as

an eyewitness – is rarely considered (Havard, Memon, Clifford, & Gabbert, 2010; Pozzulo et al., 2013). Instead, the eyewitness literature has focused on the ability of adult and child witnesses' ability to recall and/or identify a perpetrator and has generalized these findings to adolescents (Pozzulo et al., 2013). This is problematic, as adolescents are cognitively different from children and adults (i.e., they are continuing to develop; Pozzulo et al., 2013).

For example, research has shown that memory skills (i.e., acquisition of memory strategies) that aid in encoding and memory retrieval tasks (e.g., free recall) can continue to develop with age and experience (e.g., Schneider, Knopf, & Stefanek, 2002). Furthermore, as discussed by Jack, Leov, and Zajac (2014), it is necessary to consider the performance of adolescents compared to adults because their brain, and therefore their cognitive skills necessary to perform eyewitness-related tasks, are still developing. Specifically, areas of the brain associated with cognitive processing and executive functioning (e.g., prefrontal cortex) are continuing to change during adolescence (Paus, 2005; Sowell, Thompson, Holmes, Jerigan, & Toga, 1999). Continuing maturation of the brain can influence performance on verbal working memory tasks and response inhibition, among others, associated with the frontal cortex (Paus, 2005), which may in turn impact adolescents' ability to perform eyewitness tasks (e.g., ability to provide consistent, relevant information in reports; Jack et al., 2014). Additionally, Jack et al. (2014) argue that adolescents are still heavily influenced by perceived social pressure when compared to adults (i.e., they may be more susceptible to demand characteristics). As a result of cognitive and social development still ongoing during adolescence, it is unclear

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when adolescents' abilities become distinct from the abilities of children, and more similar to adult eyewitnesses (Pozzulo et al., 2013). The purpose of the current study was: (1) to compare the quantity and accuracy of free recall descriptors provided by adolescent and young adult eyewitnesses; and (2) to compare identification accuracy of adolescent and adult eyewitnesses across five different lineup procedures.

1.1. Perpetrator descriptions

Researchers examining eyewitness recall have mainly focused on adult and child eyewitnesses (e.g., Davies, Tarrant, & Flin, 1989; Eisen, Goodman, Qin, Davis, & Crayton, 2007; Pozzulo & Warren, 2003; Sutherland & Hayne, 2001) and have found that adults provide more descriptive information compared to children (Jack et al., 2014; Pozzulo, Dempsey, Crescini, & Lemieux, 2009; Pozzulo & Warren, 2003; Shapiro, 2009; Sutherland & Hayne, 2001), with quantity increasing with age (Chapman & Perry, 1995; Davies, Tarrant, & Flin, 1989; Eisen et al., 2007; Pozzulo & Warren, 2003; Shapiro, 2009).

Much research has found that while the quantity of descriptors provided by a witness tends to increase with age, there are generally no significant differences in the proportional accuracy of descriptors across age (Poole & White, 1991; Pozzulo et al., 2009; Pozzulo & Warren, 2003). For example, Pozzulo and Warren (2003), Sutherland and Hayne (2001), and Jack et al. (2014) all found no differences in the accuracy of the information reported across age groups, despite finding developmental differences in the amount of information provided.

Along with the quantity and accuracy of descriptors reported, it is also important to consider the type of descriptors provided by eyewitnesses, as some details may be more useful than others (e.g., facial characteristics vs. clothing). Although body descriptors (e.g., height, weight) and internal facial features (e.g., nose shape) may be the most useful type of descriptor during an investigation, most eyewitnesses tend to report clothing (Pozzulo et al., 2013; Pozzulo & Warren, 2003) or hair descriptors (Davies et al., 1989). The few studies that have examined adolescent eyewitnesses have found that adolescents are likely to report clothing, exterior facial features, or body descriptors (e.g., Pozzulo & Warren, 2003).

1.2. Perpetrator descriptors and adolescent eyewitnesses

Although the superiority of an adult eyewitness' recall compared to a child's is echoed across a number of studies (e.g., Davies et al., 1989; Pozzulo & Warren, 2003; Sutherland & Hayne, 2001), few studies have included an adolescent sample. Studies that have included adolescent eyewitnesses have found that adolescents perform differently than both adults and children, such that adolescents tend to report more information during recall tasks than children (e.g., Chapman & Perry, Experiment 2, 1995; Jack et al., 2014) and less information than adults (e.g., Jack et al., 2014). For example, Jack et al. (2014) found that adolescents (14-to 16-year-olds) were better able to recall a perpetrator after witnessing a staged crime when compared to children (9- to 11-year-olds), but provided fewer descriptors than adult eyewitnesses (25- to 60-year-olds). Furthermore, some research has found no differences in the number of descriptors reported between adolescents and adult eyewitnesses (e.g., Pozzulo et al., 2013).

Overall, research examining adolescent eyewitnesses indicate that adolescents report more information when compared to children, suggesting the developmental trend in which children report more information as they age, continuing into adolescence. This trend however, is not as clear when comparing adult and adolescent recall across studies – in some cases adult eyewitnesses have outperformed adolescents, whereas in other cases they have been reported to be comparable. These differences in findings suggest that there may be variability in the quantity, but not accuracy, of information provided. The current study will compare adolescent and adult recall for the quantity, accuracy, and nature of person descriptors after viewing a video of a mock theft.

1.3. Eyewitness identification

Similar to person descriptors, there are only a handful of studies that examine adolescent eyewitnesses' ability to identify a perpetrator from a lineup (e.g., Brewer & Day, 2005; Havard et al., 2010; Pozzulo et al., 2013). Research examining identification abilities between children and adolescents find that adolescents make more correct, positive identifications than children (e.g., Brewer & Day, 2005) while other research that has examined adolescents and young adults has found that both age groups perform similarly on identification tasks (e.g., Pozzulo et al., 2013). The current study sought to examine whether adolescents and adults produced comparable rates of identification accuracy across five different lineup procedures.

1.4. Lineup procedure

The type of lineup procedure shown to an eyewitness can significantly impact an eyewitness' ability to correctly identify a perpetrator in a lineup, or conversely, correctly reject a lineup if the perpetrator is absent (Wells et al., 1998). As a result, numerous lineup procedures have been developed in an attempt to increase eyewitness identification accuracy. The simultaneous lineup is arguably the most commonly used lineup procedure (Wells, 1993), which involves showing all lineup members to the eyewitness at one time. The simultaneous lineup is thought to encourage a relative judgment decision-making strategy, whereby the witness compares each of the photographs to each other and selects the lineup member who most closely resembles their memory of the perpetrator (Wells, 1984; Wells, 1993). The use of a relative judgment is arguably beneficial when the guilty suspect is in the lineup (i.e., a target-present lineup) as the guilty suspect is the best match-to memory (Lindsay, Pozzulo, Craig, Lee, & Corber, 1997). However, the reliance on a relative judgment may be detrimental when an eyewitness is shown a target-absent lineup (i.e., an innocent suspect replaces a guilty suspect), because the eyewitness may still chose the person who best matches their memory of the perpetrator (Lindsay et al., 1997; Wells et al., 1998).

The sequential lineup procedure was developed in an attempt to combat eyewitness' reliance on relative judgments by presenting each lineup member to the eyewitness individually (i.e., serially; Lindsay & Wells, 1985). When shown a sequential lineup, eyewitnesses must compare each photograph to their memory of the perpetrator (i.e., an absolute judgment). Currently, there is a debate on which procedure is superior with adult eyewitnesses (e.g., Mickes, Flowe, & Wixted, 2012; Wells, Smalarz, & Smith, 2015; Wells, Smith, & Smalarz, 2015; Wetmore et al., 2015; Wixted & Mickes, 2014). Research that has examined the utility of the sequential lineup procedure on adolescent eyewitnesses has found that it results in a comparable rate of correct identifications when compared to other lineup procedures (i.e., simultaneous and elimination), however it has been found to decrease accuracy when adolescent eyewitnesses were shown a target-absent lineup (i.e., compared to the elimination procedure; Pozzulo et al., 2013).

A modification to the simultaneous lineup procedure, known as the wildcard procedure, includes a salient rejection option (e.g., a blackened silhouette; Zajac & Jack, 2015; Zajac & Karageorge, 2009). The wildcard lineup procedure has been shown to be beneficial for increasing the rate of correct rejection among child eyewitnesses while maintaining the rate of correct identification in target-present lineups (Karageorge & Zajac, 2011; Zajac & Karageorge, 2009). However, there are mixed findings concerning whether the wildcard lineup is beneficial for young adults (e.g., Bruer, Fitzgerald, Therrien, & Price, 2015; Pozzulo, Reed, Pettalia, & Dempsey, 2015). To our knowledge, no published study to date has examined the wildcard lineup with an adolescent population.

The elimination lineup procedure was originally created to help increase the rate of correct rejection among child eyewitnesses and

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