

An Examination of the Impact of Corroborator Age on Alibi Assessment

by

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## CORROBORATOR AGE AND ALIBI ASSESSMENT

### **Abstract**

The purpose of the current research was to assess the impact of the age of an alibi corroborator on the perceptions and decision-making of alibi assessors. Across two studies, adult participants were asked to assume the role of a police detective and to assess the alibi of an armed robbery suspect. The alibi contained a single individual that was willing to verify the suspect's account (i.e., an alibi corroborator). In Study 1, I examined the impact of the alibi corroborator's age (i.e., 8-year-old vs. 25-year-old) and relationship with the suspect (i.e., stranger vs. neighbour vs. son) on ratings of five dependent measures related to corroborator credibility and suspect guilt. In Study 2, I examined the impact of the alibi corroborator's age (i.e., 4-year-old vs. 8-year-old vs. 25-year-old) and the level of cognition needed to remember the alibi event (i.e., delayed vs. recent event) on the same five dependent measures. Consistent with a two-factor model of witness credibility, results indicated that participants viewed an 8-year-old corroborator more favourably than a 4- or 25-year-old corroborator. Participants also demonstrated increased skepticism when the corroborator was interviewed after a longer delay as well as when the corroborator was related to the suspect. The current results help to shed light on an existing inconsistency in the alibi literature regarding the impact of corroborator age on alibi assessment outcomes.

*Keywords:* alibi assessment; crime perceptions; corroborator; credibility; child witness

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## Chapter 1: Introduction

An alibi refers to an individual's claim that he/she could not have been involved in a crime on the basis of having been somewhere other than the scene of the crime at the time of commission (Culhane & Hosch, 2012). Police officers commonly encounter alibis at the outset of an investigation when potential suspects are questioned in order to ascertain the likelihood that they were involved in the offence (Dysart & Strange, 2012). Officers must then assess the alibi and make decisions about which suspects to pursue and which to ignore – making the alibi assessment process a critical aspect of the investigation. Troublingly though, the large amount of wrongful convictions in both Canada and the United States (Innocence Canada, 2018; Innocence Project, 2018) suggests that the alibi assessment process may often lead to inaccurate conclusions regarding the veracity of alibis.

The alibi assessment process has important implications for investigative as well as adjudicative outcomes within the criminal justice system. An analysis of the first 40 wrongful conviction cases (as determined by DNA evidence) revealed that there were eight cases (20%) where the perceived low quality, or absence, of an alibi was regarded as 'incriminating evidence' and contributed directly to the miscarriage of justice (Wells et al., 1998). Elsewhere, researchers have suggested that the failure of alibis to yield sufficient protection for innocent alibi providers could be viewed as the leading contributing factor to wrongful convictions in the US, given that all DNA exonerees were convicted despite presumably providing some type of alibi (Dysart & Strange, 2012)<sup>1</sup>. Researchers have found that alibi assessors consistently attribute low levels of

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<sup>1</sup> That *all DNA exonerees had an alibi* may be a slight overstatement. As Garrett (2011) pointed out, some exonerees were genuinely without an alibi – they claimed they were at the scene of the crime but uninvolved in the offense. Nevertheless, such cases constitute only marginal exceptions to the general trend noted by Dysart and Strange (2012).

believability to the alibis of suspects and accused persons (e.g., Dahl, Brimacombe, & Lindsay, 2009; Olson & Wells, 2004), and that this level of skepticism can jeopardize innocent alibi providers (e.g., Wells et al., 1998). Nevertheless, alibi assessment, unlike other psychological phenomena that contribute to wrongful conviction (e.g., eyewitness identification; see Cutler, 2011) has yet to be examined sufficiently (Burke, Turtle, & Olson, 2007; Olson & Wells, 2004).

### **1.1 The Alibi Assessment Process**

The psychology of alibi assessment has been subjected to empirical examination only within the past decade or so. In their seminal 2004 article, Olson and Wells developed a taxonomy with which to gauge the relative believability of an alibi. The authors ranked the believability of an alibi as a function of two types of external corroborating evidence – (1) physical evidence and (2) person evidence. Physical evidence refers to ‘hard’ evidence such as fingerprints, photographs, etc., while person evidence refers to ‘soft’ evidence such as an individual who offers sworn testimony on a suspect’s behalf. The taxonomy contained three categories of physical evidence: (i) none, (ii) easy-to-fabricate (e.g., cash receipt), and (iii) difficult-to-fabricate (e.g., video footage). The taxonomy also contained four categories of person evidence arranged according to familiarity with the suspect and motivation to lie: (i) none, (ii) motivated familiar other (e.g., a spouse), (ii) non-motivated stranger, and (iii) non-motivated familiar other (e.g., an acquaintance). Within this basic framework, the various categories of physical and person evidence form a continuum of alibi believability, such that the least believable alibi is one without any form of corroborating evidence, and the most believable alibi is one supported by a non-motivated familiar other and a form of difficult-to-fabricate physical evidence.



Subsequent research findings have been generally consistent with the abovementioned taxonomy. Overall, alibi-assessors are more likely to believe an alibi and less likely to render guilty verdicts when strong corroborating evidence is forthcoming than when such evidence is lacking (e.g., Allison & Brimacombe, 2010; Culhane & Hosch, 2004; Pozzulo, Pettalia, Dempsey, & Gooden, 2015). Moreover, research has found that when physical evidence and person evidence are presented simultaneously, the impact of physical evidence largely overshadows the effect of person evidence (Olson & Wells, 2004). In other words, physical evidence is more convincing than person evidence. Both real-world cases and laboratory studies, however, have shown that people seldom produce physical evidence to support their alibis and instead tend to rely on the support of corroborating person evidence (e.g., Culhane et al., 2013; Olson & Charman, 2012). In one study, Culhane and colleagues (2008) found that alibi providers overwhelmingly relied on person evidence (90%; the majority of which consisted of family members and friends) and could only produce supporting physical evidence in a minority of cases (30%). More recently, Nieuwkamp, Horselenberg, and Van Koppen (2017) found that only 25% of innocent alibi providers reported having any form of physical evidence to support their alibis, while 90% reported at least one witness who could support their alibi.

These laboratory findings are consistent with data obtained from real-world outcomes in Canada and the United States. For example, Dysart and Strange (2012) found that a sample of law enforcement personnel indicated that suspects frequently offer motivated alibi witnesses to support their claims (i.e., family members, 40%, significant others, 34%, friends, 36%), whereas physical alibi evidence is offered in only a minority of criminal cases (24%). Furthermore, in a recent examination of the first 250 DNA exoneration cases in the United States, it was revealed that approximately 86% of exonerees who raised an alibi defense at trial had alibi witnesses

(121/140; Garrett, 2011). Clearly, the vast majority of alibis that undergo assessment are supported only by (motivated and familiar) person corroborators, and not by physical evidence. Therefore, in order to improve the alibi assessment process, it is necessary to develop a clearer understanding of those factors that affect perceptions of person evidence.

## **1.2 The Suspect-Corroborator Relationship**

The relationship between the suspect and the alibi corroborator is an important factor that has been shown to have an impact on perceptions of the veracity of person evidence (e.g., Olson & Wells, 2004). Hitherto, alibi researchers have revealed at least three major findings regarding the suspect-corroborator relationship that are in line with the aforementioned taxonomy. First, researchers have consistently found that alibi assessors are more skeptical of corroborators who are related to the suspect than those who are not related (e.g., Hosch, Culhane, Jolly, & Shaw, 2011). In a mock-juror study, Lindsay, Lim, Marando, and Cully (1986) found that alibi corroboration from a stranger significantly reduced the rate of guilty votes (27%), but corroboration from a relative (i.e., brother-in-law) did not reduce the rate of guilty votes (57%). Similarly, Culhane and Hosch (2004) found that when the alibi corroborator was the defendant's neighbour, conviction rates were significantly lower than when the corroborator was the defendant's girlfriend (41% vs. 51%, respectively). Consistent with these outcomes, Hosch et al. (2011) found that participants were more skeptical of an alibi when the corroborator was a biological relative as compared to an affinal relative, and were least skeptical of corroborators who were not related to the suspect. In a more recent study, it was found that in order to offset the exonerating effects of a non-familial alibi corroborator, participants requested significantly more evidence than when the corroborator was related to the suspect (Bruer, Price, & Dahl, 2016).

Researchers have found that the above pattern of skepticism may not be entirely unwarranted. The second major finding regarding the suspect-corroborator relationship is that when asked what percentage of the time they would lie for a defendant, participants reported that they would be most willing to lie for a biological relative (42.02% of the time), less so for an affinal relative (32.72% of the time), and least willing if they were only socially related (19.03% of the time) (Hosch et al., 2011). These participants also reported a greater willingness to lie for defendants with whom they shared a close social relationship than for those with a more distant relationship. Lastly, moving beyond self-report data, Marion and Burke (2017) examined altruistic behaviour in an alibi context and found that alibi witnesses were more than twice as likely to corroborate a false alibi for a friend than for a stranger. In sum, (1) people are more skeptical of corroborators who are related to the suspect (e.g., Hosch et al., 2011), (2) people *report* a greater willingness to lie for a relative than for a stranger (Hosch et al., 2011), and (3) people *actually* are more likely to corroborate a false alibi for a suspect with whom they have a close relationship (Marion & Burke, 2017).

### **1.3 The Age of the Alibi Corroborator**

In addition to the suspect-corroborator relationship, the age of the alibi corroborator has been shown to influence perceptions of person evidence (e.g., Eastwood, Snook, & Au, 2016; Dahl & Price, 2012). Unlike the effect of relationship, however, the directionality of the effect of corroborator age on alibi believability and suspect guilt has been notably inconsistent across studies. For example, Dahl and Price (2012) used a mock-investigator paradigm to examine the impact of suspect-corroborator relationship (i.e., neighbour vs. son) and corroborator age (i.e., 6-year-old vs. 25-year-old) on perceptions of alibi corroborators. It was found that, irrespective of the relationship between the suspect and the alibi corroborator, child corroborators were

significantly more believable than were adults (see also Price & Dahl, 2014). In contrast, Eastwood et al. (2016) used a policy-capturing methodology (i.e., a regression-based assessment of decision-making) to examine the impact of five dichotomously coded features on the alibi assessment process (i.e., suspect-corroborator relationship, corroborator age, amount of corroborators, corroborator confidence, and memorability of the event) and found that adult alibi corroborators were rated as more believable than child corroborators.

There are at least three potential reasons for the discrepancy in results between these studies: (1) differences in the reported alibi event, (2) differences in the relationship between the alibi corroborator and the suspect, and (3) differences in the mode of presentation of the alibi corroborators. On the first point, regarding the alibi event, Dahl and Price (2012) used a daylong interaction between the corroborator and the suspect, while Eastwood et al. used only a brief encounter. Second, regarding the relationship variable, Dahl and Price used a son vs. neighbour paradigm whereas Eastwood et al. used a family member vs. stranger paradigm. It is worth reiterating that a stranger (nonmotivated and unfamiliar) may be more likely to be met with greater skepticism than a neighbour (nonmotivated and familiar) (Olson & Wells, 2004). Lastly, with regards to the differences in the mode of presentation of the alibi, Dahl and Price presented participants with audiovisual recordings of alibi statements, while Eastwood et al. presented written descriptions. The lack of methodological parity across these studies limits our ability to draw clear conclusions about the effect of corroborator age. Fortunately, the child witness literature offers a theoretical basis for untangling the existing discrepancy.

#### **1.4 The Two-Factor Model of Child Witness Credibility**

An abundance of research within the eyewitness and child victim literature has shown that laypeople and legal personnel generally believe that children, as compared to adults, are

inherently more honest (i.e., less likely to intentionally lie) but also are less cognitively competent (i.e., more likely to be unintentionally mistaken; Bottoms & Goodman, 1994; Connolly, Price, & Gordon, 2010; Goodman, Golding, Hegelson, Haith, & Michelli, 1987; Ross, Dunning, Tolia, & Ceci, 1990; Ross, Jurden, Lindsay, & Keeney, 2003). The perception of child witness credibility as a function of these two distinct factors – honesty and cognitive ability – has been referred to as the two-factor model of child witness credibility (Ross et al., 2003). Similar expressions of this basic formula have been presented in earlier work as well. Goodman, Bottoms, Herscovici, and Shaver (1989), for example, proposed that jurors' perceptions of children's credibility is largely influenced by two underlying 'theories' – (1) jurors may believe that children are honest and therefore believable, and (2) jurors may believe that children are less cognitively developed and therefore less believable (see also Ross et al., 1990). Similarly, Haugaard and Reppucci (1992) highlighted the distinction between two important components – competency and credibility – where competency reflected children's ability to understand the truth, and credibility consisted of children's perceived honesty. Each of these formulations converge on what will henceforth be referred to as the two-factor model.

In two studies, Ross and colleagues (2003) examined whether mock-jurors' perceptions of children's credibility could be accounted for by the two-factor model and whether the two factors could predict verdict outcomes. In study 1, mock-jurors were presented with a video recording of a child sexual abuse trial including testimony from the child (victim), father (accused), and an expert witness. Participants then rendered a verdict and rated the child's credibility on 14 items. An exploratory, principle components analysis revealed that items loaded on two dimensions: honesty and cognitive ability. The same procedure was carried out for study 2 but participants viewed only the child's testimony. Confirmatory factor analysis

replicated the model obtained in study 1. Together, these studies provided empirical support for a two-factor model of child witness credibility. Results indicated that honesty and cognitive ability were related but conceptually autonomous factors, and that honesty (but not cognitive ability) predicted verdict outcomes.

Research on adults' perceptions of the credibility of child witnesses has generated a mixture of results – sometimes children are perceived as more credible than adults (e.g., Ross, Dunning, Toglia, & Ceci, 1990), sometimes less credible (e.g., Goodman et al., 1987; Leippe & Romanczyk, 1989, Study 2), and other times adults and children are perceived as equally credible (e.g., Bottoms, Diviak, & Davis, 1997). The two-factor model affords us considerable insight into these inconsistencies. In cases of child sexual abuse (CSA), younger children may be viewed as more credible as they are perceived as being honest but also sexually naïve (i.e., lacking the necessary cognitive ability to generate a false account of sexual abuse) (e.g., Bottoms & Goodman, 1994). In non-CSA cases, however, young children may be viewed as less credible (e.g., Goodman et al., 1987). Thus, as suggested by Goodman et al. (1989), perceptions of child witnesses may ultimately depend on which of the two factors – honesty or cognitive ability – is given greater consideration by jurors. With regards to the relative importance of honesty and cognitive ability in adults' assessments of children's credibility, some research has shown that honesty may have greater predictive value than cognitive ability (Ross et al., 2003; Talwar, Lee, Bala, Lindsay, 2006), while other findings appear to demonstrate that cognitive ability may be more important than honesty (Price & Dahl, 2017). Discrepancies in the inherent importance of honesty versus cognitive ability notwithstanding, the two-factor model provides a useful and empirically supported conceptualization of perceptions of child witness credibility.

The two-factor model offers a reasonable account of the inconsistent effects of corroborator age reported by Dahl and Price (2012) and Eastwood et al. (2016). First, Dahl and Price (2012) presented a scenario in which the suspect spent the entire day with either their son or their neighbour. This situation casts very little doubt on the accuracy/ cognitive ability of the corroborator and instead may have primed participants to consider corroborator honesty (as the authors pointed out), increasing the believability of the child corroborator. Conversely, Eastwood et al. (2016) presented a scenario in which the suspect only briefly encountered either a family member or a stranger. This situation casts considerably more doubt on the accuracy of the corroborator and may have deemphasized considerations of honesty, increasing the believability of the adult corroborator overall.

### **1.5 Perceptions of Children in an Alibi Context**

Over the past several decades, a great deal of research has been conducted on adults' perceptions of child witnesses (reviewed above). There are, however, some important differences between alibi witnesses and witnesses to crime. First, children who witness a crime may or may not be related to, or even familiar with, the criminal suspect. While research has shown that, in reality, defendants are often familiar to the victim (Flowe, Mehta, & Ebbeson, 2011), the majority of eyewitness research has been conducted using stranger-perpetrators (Pozzulo, 2017). Research with stranger-perpetrators, however, may only be relevant to a minority of alibi corroborators. That is, the overwhelming majority of alibi corroborators are related to, or at least familiar with, the criminal suspect (the alibi provider) (e.g., Culhane et al., 2008). The existence of a close relationship between the corroborator and the suspect is of particular relevance for child corroborators given their lack of independence and their need for supervision.

In addition to the suspect-corroborator relationship, another major difference between criminal and alibi contexts is the directionality of the effects of witness credibility on perceptions of suspect culpability. Eyewitnesses to crime, if believed, produce an inculpatory effect, whereas alibi witnesses are inherently exculpatory (at least to some extent). A form of ‘tunnel vision’, however, can lead investigators to focus on and more readily accept inculpatory evidence as compared to exculpatory evidence (see, for e.g., Findley & Scott, 2006). Thus, an asymmetry may exist in the evidentiary weight of exculpatory alibi evidence versus inculpatory eyewitness evidence. Similarly, Dahl, Brimacombe, and Lindsay (2009) found that alibi providers were generally rated as less credible than were eyewitnesses. Finally, as others have noted (e.g., Charman, Reyes, Villalba, & Evans, 2017; Price & Dahl, 2017), there is a considerable difference in the underlying salience of an alibi event compared to a criminal offence. Alibis often consist of ordinary events, lacking the emotional, moral, and motivational dimensions of crime. Alibi witnesses are unlikely to be aware that they may later be asked to recount the alibi event, whereas those who witness a crime may be more apt to intentionally encode the event as it unfolds. Therefore, witnesses to crime may be more likely to have an accessible memory trace for the criminal event than an alibi witness would have for an alibi event.

## **1.6 Overview of the Present Research**

As mentioned, the assessment of alibis can impact decision-making at various stages of the criminal justice process – from the investigation through to adjudication. Given that alibi assessment outcomes differ according to the assessment context (Sommers & Douglas, 2007), it is important to note the context of the current research. In line with a great deal of existing alibi research (e.g., Eastwood et al., 2016; Dahl & Price, 2012; Olson & Wells, 2004; Price & Dahl,



2017), the current work was conducted using a mock-investigator paradigm. That is, all participants were instructed to take on the role of a police detective investigating an armed robbery case. This approach contrasts a mock-juror paradigm – also commonly used in the alibi literature (e.g., Culhane & Hosch, 2004; Hosch et al., 2011). One reason for the present focus on the investigative context is that, in reality, far more cases require investigation than proceed to jury trial. Therefore, alibi assessment is often (though not always) a process that begins and ends during the investigative phase of the criminal process. Secondly, any inaccurate conclusions reached about alibis during the investigation may produce undesirable downstream effects. For example, Sommers and Douglas (2007) found that mock-jurors were more skeptical of alibis than were mock-investigators and suggested that this effect may have been due to mock-jurors' belief that an alibi must not be compelling if the case made it to trial. Given the ubiquity of alibi assessment during criminal investigations and the 'cascading effects' it may produce (Crozier, Strange, & Loftus, 2017), the present research focused on the investigative context.

Across two studies, I attempted to clarify the aforementioned discrepancy regarding the impact of corroborator age by expanding upon existing research on perceptions of alibi corroborators. To reiterate, both studies used a mock-investigator paradigm where participants were asked to assume the role of a police detective and to examine the details of a mock crime and a description of a suspect's alibi. In Study 1, participants were presented with a description of either an 8-year-old or a 25-year-old alibi corroborator who was described as either the suspect's son, neighbour, or a stranger. In Study 2, the level of cognition needed to remember the alibi event was manipulated (by varying the delay between the time of the crime and the time of questioning) along with the age of the alibi corroborator (i.e., 4-year-old vs. 8-year-old vs. 25-year-old). In both studies, participants' perceptions of the likelihood of the suspect's guilt were

assessed along with perceptions of believability, likelihood of corroborator mistakenness, honesty, and overall credibility.

## Chapter 2: Study 1

Due to the relative dearth of research in this area, Study 1 was aimed at exploring the impact of age under more neutral conditions (i.e., conditions that do not emphasize honesty or accuracy) and with a more exhaustive manipulation of the suspect-corroborator relationship than has been used in some of the previous research (i.e., three levels instead of two). As mentioned, an important consideration for the current line of inquiry was the nature of the reported alibi event. The alibi event presented in Study 1 deviates from that which was presented by Dahl and Price (2012) (i.e., a daylong interaction between the suspect and the corroborator) and by Eastwood et al. (2016) (i.e., a brief encounter between the suspect and corroborator that varied on five dimensions). My aim was to minimize the extent to which the alibi event, in itself, would influence participants' perceptions. Thus, the event presented in the current study – the alibi corroborator sees the suspect in the park while playing baseball – was intended to have a level of plausibility that was not dependent upon the age of the corroborator. Also, and importantly, the alibi event was intended to be relatively neutral insofar as it would not lead inherently to an asymmetry in participants' considerations of corroborator honesty versus corroborator accuracy.

The examination of relationship and corroborator age in Study 1 served as a replication and extension of previous research. Given that Eastwood et al. (2016) and Dahl and Price (2012) examined age and relationship but uncovered contradictory effects, these variables were used in the current study so that this inconsistency might be more clearly understood. More specifically, I chose to treat the suspect-corroborator relationship as a trichotomy (son vs. neighbour vs. stranger), whereas Dahl and Price (2012) and Eastwood et al. (2016) treated it as a dichotomous variable (son vs. neighbour; family member vs. stranger, respectively). Thus, while expanding

on that of the most relevant research, the relationship variable in the present work was also in keeping with the conceptualization of suspect-corroborator relationship as put forth by Olson and Wells (2004) in the taxonomy research reviewed above (i.e., the son is considered motivated and familiar, neighbour is nonmotivated and familiar, and stranger is nonmotivated and unfamiliar).

The existing alibi literature offered considerably less guidance on the manipulation of corroborator age. As mentioned, Dahl and Price (2012) and Price and Dahl (2014) used 6- versus 25-year-old corroborator conditions whereas Eastwood et al. (2016) used various exemplars for both child corroborator (5-, 6-, 7-, and 8-year-old) and adult corroborator (22-, 24-, 25-, 27-year-old) conditions. Price and Dahl (2017) also examined various ages including 6- 8- 11- and 25-year-old conditions. Beyond these few alibi studies, 8-year-old 'child' conditions have been commonly used in previous research examining laypersons' and legal professionals' perceptions of eyewitnesses (e.g., Nigro, Buckley, Hill & Nelson, 1989; Ross et al., 1990; Wells, Turtle, Luus, 1989) as have 25-year-old 'adult' conditions (e.g., Nigro et al., 1989). Thus, 8- and 25-year-old conditions were used in the present study in order to remain generally consistent with the age ranges used in much of the existing child witness and alibi research.

Based on previous findings regarding the suspect-corroborator relationship (e.g., Culhane & Hosch, 2004; Hosch et al., 2011; Olson & Wells, 2004), it was hypothesized that there would be a significant effect of relationship such that when the alibi corroborator was described as the suspect's son, participants would rate the corroborator as significantly less believable than when described as a stranger or a neighbour. Although previous research has generated mixed findings regarding corroborator age, multiple studies support the view that child corroborators may be viewed as more honest (Dahl & Price, 2017) and more compelling than adults (e.g., Dahl &

Price, 2012; Price & Dahl, 2014) whereas only one study has suggested that adults are more believable (Eastwood et al., 2016). Thus, it was hypothesized that there would be a significant main effect of corroborator age such that child corroborators would be viewed as more believable than adult corroborators. No specific hypothesis was formulated regarding an interaction effect.

## 2.1 Method

### 2.1.1 Participants

The undergraduate student sample consisted of 182 undergraduate students at the University of Ontario Institute of Technology (65 males, 116 females, 1 other;  $M$  age = 19.35 years,  $SD = 2.56$ ,  $Range = 17-38$ ). Sixty-six participants self-identified<sup>2</sup> as Asian (36.30%), 59 participants self-identified as White (32.40%), 47 participants self-identified as Other (25.80%), 28 participants self-identified as Black (15.40%), and one participant self-identified as Aboriginal (0.50%). The majority of participants ( $n = 156$ ) reported being in their first year of study.

The community sample consisted of 195 general community members from the US (72 males, 122 females, 1 other;  $M$  age = 41.92 years,  $SD = 13.86$ ,  $Range = 19-78$ )<sup>3</sup>. One hundred and fifty-two participants self-identified as White (77.9%), 16 participants self-identified as Black African (8.2%), 6 participants self-identified as Other (3.1%), 6 participants self-identified as Asian (3.1%), 5 participants self-identified as Aboriginal (2.6%), 5 participants self-identified as Latin American (2.6%), 4 participants self-identified as Southeast Asian (2.1%), 3 participants

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<sup>2</sup> Participants could self-identify as more than one ethnicity.

<sup>3</sup> These age statistics do not include one participant who reported his/her age as “3”.

self-identified as South Asian (1.5%), 3 participants self-identified as Black Caribbean (1.5%), 2 participants self-identified as Arab (1.0%).

Student and community samples were collapsed together for the present analyses. This decision was based on the weight of evidence regarding the legal decision-making of student vs. non-student samples. Eastwood et al. (2016) found that the overall pattern of alibi-related decision-making was similar across undergraduate students, law enforcement students, and law enforcement officers – an observation that is consistent with findings from the juror decision-making literature. A qualitative review of 26 experiments directly comparing student and non-student mock-jurors revealed that a main effect of juror-sample was found in only five of the 26 studies (Bornstein, 1999). Of note, all non-student samples included by Bornstein (1999) were older, on the average, than the student samples and were more demographically heterogeneous. More recently, Bornstein et al. (2017) conducted a meta-analysis of 53 studies and found that guilty verdicts, culpability ratings, and damage awards did not differ significantly across student- and non-student mock-jurors. Thus, the preponderance of evidence clearly indicates that student and non-student mock-jurors do not differ consistently in their decision-making. While the current study used a mock-investigator rather than mock-juror paradigm, the overwhelming similarity in the legally relevant decision-making of students and non-students across a wide range of trial types and treatment variables provided sufficient justification for combining students and non-students for the present analysis.

Along with standard Qualtrics protocol (i.e., participants who completed the survey in less than one-third the median completion time were automatically dropped from the study), any participants that did not complete all questions successfully were removed prior to analysis (see Appendix C). Thirty-four participants were removed in this process. The total sample used for

data analysis consisted of 343 adult participants. A power analysis<sup>4</sup> indicated that the current sample was sufficient to achieve statistical power > .80.

### 2.1.2 Materials and Design

Study 1 used a 2 (Corroborator Age: 8-year-old vs. 25-year-old) × 3 (Suspect-Corroborator Relationship: Stranger vs. Neighbour vs. Son) between-subjects design. An online survey was created using Qualtrics survey software. The first page of the survey presented participants with an informed consent page that provided information about the study and contact information for the researchers. The second page of the survey consisted of a series of demographic questions (e.g., age and gender). The third page instructed participants to assume the role of a police detective investigating an armed robbery case. Participants were presented with a brief description of the case: a local convenience store was robbed by a man wearing a ski mask, and based on eyewitness reports of the make and model of the perpetrator's car and a physical description of the perpetrator, police have identified a potential suspect. The potential suspect denied involvement in the crime, and claimed to be walking his dog at a park near his home (located across town from the convenience store) at the time that the robbery took place. At this point, participants were instructed to rate the likelihood that the suspect was guilty on a 10-point Likert scale (1 = *Extremely Unlikely* to 10 = *Extremely Likely*).

On the next page, participants were informed that police had identified an individual who could verify the suspect's account. Participants were assigned randomly to one of six alibi

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<sup>4</sup> A minimum sample size of 301 was determined from a power analysis conducted using G\*Power (Faul, Erdfelder, Lang, & Buchner, 2007). While Dahl and Price (2012) reported a medium effect size for corroborator age, the effect size of relationship seems to be somewhat smaller (e.g., Olson & Wells, 2004). Therefore, a Cohens *f* of .18 (as reported by Olson & Wells, 2004) was used to generate a more conservative estimate of minimum sample size. Alpha was set at .05 and power at .80 (as advised by Cohen, 1988).

corroborator conditions (i.e., participants were presented with information from a corroborator who was described as either an 8-year-old or a 25-year-old, and who was either the suspect's son, neighbour, or a stranger). In each condition, the corroborator claimed to have been playing baseball in the park when he saw the suspect walking his dog at the time in question.

Participants were instructed to rate the following on 10-point Likert scales: the likelihood that the suspect is guilty (1 = *Extremely Unlikely* to 10 = *Extremely Likely*), the believability of the alibi corroborator (1 = *Extremely Unbelievable* to 10 = *Extremely Believable*), the likelihood that the alibi corroborator is mistaken about seeing the suspect (1 = *Extremely Unlikely* to 10 = *Extremely Likely*), the likelihood that the alibi corroborator is being honest about seeing the suspect (1 = *Extremely Unlikely* to 10 = *Extremely Likely*), and the overall credibility of the alibi corroborator (1 = *Extremely Uncredible* to 10 = *Extremely Credible*). Participants were also asked to describe, in as much detail as possible, the reasoning for their ratings. The final page of the survey informed participants that they have concluded the study, and thanked them for their participation.

### 2.1.3 Procedure

***Undergraduate Sample.*** Undergraduate students who were enrolled in either an introductory or an abnormal psychology class registered to participate in the study through an online, research registration system. Upon arrival at the psychology laboratory, each participant was greeted and shown to a private cubicle containing a desktop computer. Prior to beginning the online survey, participants were provided with verbal instructions on how to complete the study. Participants were presented with a page containing the consent form and were informed that by advancing beyond that page, consent was implied. The survey automatically assigned participants randomly to one of the six conditions. Upon completion of the survey, participants



were presented with a debriefing page. When participants were finished the study, they were thanked for their participation and each student was awarded 0.5% bonus in his/her psychology course. The study took approximately 10 minutes to complete.

**Community Sample.** Community members were recruited using the Qualtrics online panels service. Potential participants were sent the URL link for the study via email. Participants accessed the survey and worked through each of the pages of the online survey (completed remotely). The survey automatically assigned participants randomly to one of the six conditions. Participants were compensated from Qualtrics for completing the survey.

#### **2.1.4 Coding Open-Ended Responses**

Each participant provided the reasoning for his/her ratings in an open-ended response. Through an iterative process, a coding guide was constructed by the first author, who then coded all responses. Eight components were coded as present (1) or absent (0): whether the participant mentioned (1) the corroborator's age (Age), (2) the suspect-corroborator relationship (Relationship), (3) that the corroborator might have been distracted (Distraction), (4) that more information or evidence was necessary (More Information), (5) that the corroborator might be deceitful (Lying), (6) that the corroborator might be unintentionally mistaken (Memory Error), (7) that the corroborator may have been susceptible to external influence (Susceptibility to Influence), (8) that the corroborator could have acted as an accomplice (Accomplice).

#### **2.1.5 Inter-Rater Reliability**

A research assistant also coded each participant's open-ended response using the same coding guide. The reliability of the coding was assessed using Cohen's kappa (Cohen, 1960) and percentage agreement ( $n = 324$ ). The Kappa and percentage agreement (in parentheses) were as follows: Age = 0.91 (96%), Relationship = 0.89 (94%), Distraction = 0.86 (98%), More

Information = 0.65 (91%), Lying = 0.49 (82%), Memory Error = 0.62 (89%), Susceptibility to Influence = 0.80 (97%), and Accomplice = 0.45 (93%). The average Kappa across all responses was 0.71 (93%), indicating substantial agreement between coders (Landis & Koch, 1977).

## 2.2 Results

### Pre-Alibi Guilt Ratings

Immediately after viewing the crime scenario vignette, participants were asked to rate the likelihood of the suspect's guilt (on a 10-point Likert scale). Though all participants had been presented with identical information up to this point, in order to ensure that there were no group differences based on condition, a 2 (Age: Child vs. Adult)  $\times$  3 (Relationship: Son vs. Neighbour vs. Stranger) between subjects analysis of variance (ANOVA) was performed on participants' ratings of the likelihood that the suspect was guilty. The main effect of Age was not significant,  $F(1, 337) = 0.15, p = .698, \eta_p^2 = .000$ , nor was the main effect of Relationship,  $F(2, 337) = 0.29, p = .752, \eta_p^2 = .002$ . The Age  $\times$  Relationship interaction was also not significant,  $F(2, 337) = 1.70, p = .185, \eta_p^2 = .01$ .

### Pre-Alibi vs Post-Alibi Guilt Ratings

A repeated measures ANOVA was conducted to compare participants' pre-alibi and post-alibi ratings of the likelihood of the suspect's guilt. There was a significant difference between pre-alibi and post-alibi guilt ratings,  $F(1, 342) = 127.17, p < .001, \eta_p^2 = .27$ . Twenty seven percent of the variance in guilt ratings could be accounted for by whether the suspect's guilt was rated before or after viewing the alibi. Participants' ratings of the likelihood of the suspect's guilt were significantly higher before viewing the alibi ( $M = 5.82, SD = 2.09$ ) than they were after viewing the alibi ( $M = 4.77, SD = 2.14$ ).

### Post-Alibi Guilt Ratings

A 2 (Age: Child vs Adult)  $\times$  3 (Relationship: Son vs. Neighbour vs. Stranger) between subjects ANCOVA was conducted on participants' ratings of the likelihood of the suspect's guilt (with pre-alibi guilt ratings as a covariate). There was no significant main effect of Age,  $F(1, 336) = 0.07, p = .792, \eta_p^2 = .000$ , nor was there a significant Age  $\times$  Relationship interaction,  $F(2, 336) = 0.78, p = .461, \eta_p^2 = .01$ . There was, however, a significant main effect of Relationship,  $F(2, 336) = 5.28, p = .006, \eta_p^2 = .03$ . Three percent of the variance in ratings of suspect guilt could be accounted for by the relationship between the suspect and the alibi corroborator.

Pairwise comparisons revealed that when the alibi corroborator was described as the suspect's son, participants rated the suspect as more likely to be guilty ( $M = 5.18, SD = 2.05$ ) than when the corroborator was described as a stranger ( $M = 4.71, SD = 2.17, d = 0.22$ ) or neighbour ( $M = 4.45, SD = 2.15, d = 0.35$ ),  $ps < .05$ . Guilt ratings did not differ significantly between Neighbour and Stranger conditions ( $p = .559$ ).

### **Alibi Corroborator Believability**

A 2 (Age: Child vs. Adult)  $\times$  3 (Relationship: Son vs. Neighbour vs. Stranger) between subjects ANOVA was conducted on participants' ratings of alibi corroborator believability. There was not a significant main effect of Age,  $F(1, 337) = 0.01, p = .923, \eta_p^2 = .000$ , nor was there a significant Age  $\times$  Relationship interaction,  $F(2, 337) = 0.09, p = .915, \eta_p^2 = .001$ . There was, however, a significant main effect of Relationship,  $F(2, 337) = 8.07, p < .001, \eta_p^2 = .05$ . Five percent of the variance in corroborator believability ratings could be accounted for by the relationship between the suspect and the alibi corroborator. Post-hoc tests (with a Bonferroni correction) revealed that when the corroborator was described as the suspect's son, corroborator believability ratings were significantly lower ( $M = 5.59, SD = 2.07$ ) than when described as the suspect's neighbour ( $M = 6.42, SD = 1.71, d = 0.44, p = .002$ ) or a stranger ( $M = 6.48, SD = 1.79,$

$d = 0.46, p = .001$ ). Believability ratings did not differ significantly across Neighbour and Stranger corroborator conditions ( $p = 1.00$ ).

### **Ratings of the Likelihood of Corroborator Being Mistaken**

A 2 (Age: Child vs. Adult)  $\times$  3 (Relationship: Son vs. Neighbour vs. Stranger) between subjects ANOVA was conducted on participants' ratings of the likelihood that the alibi corroborator was mistaken about seeing the suspect. There was not a significant main effect of Age,  $F(1, 337) = 0.85, p = .356, \eta_p^2 = .003$ , nor was there a main effect of Relationship,  $F(2, 337) = 2.28, p = .104, \eta_p^2 = .01$ . There was, however, a significant Age  $\times$  Relationship interaction,  $F(2, 337) = 4.07, p = .018, \eta_p^2 = .02$ . Two percent of the variance in ratings of alibi corroborator mistakeness could be accounted for by the interaction between the age of the alibi corroborator and the suspect-corroborator relationship. Follow-up tests (with a Bonferroni correction) indicated that within the Child corroborator condition, when described as the suspect's son, participants rated the corroborator as significantly less likely to be mistaken ( $M = 4.74, SD = 2.17$ ) than when described as a stranger ( $M = 6.02, SD = 1.71, d = .66, p = .003$ ), but not significantly different from when described as the suspect's neighbour ( $M = 5.53, SD = 2.02, p = .121$ ).

### **Ratings of the Likelihood of Corroborator Honesty**

A 2 (Age: Child vs. Adult)  $\times$  3 (Relationship: Son vs. Neighbour vs. Stranger) between subjects ANOVA was conducted on participants' ratings of the likelihood that the alibi corroborator was being honest about seeing the suspect. The main effect of Age was not significant,  $F(1, 337) = 3.70, p = .055, \eta_p^2 = .01$ , nor was the Age  $\times$  Relationship interaction,  $F(2, 337) = 0.09, p = .914, \eta_p^2 = .001$ . There was, however, a main effect of Relationship,  $F(2, 337) = 18.46, p < .001, \eta_p^2 = .10$ . Ten percent of the variance in ratings of corroborator honesty could

be accounted for by the relationship between the suspect and the alibi corroborator. Post-hoc tests (with a Bonferroni correction) indicated that participants' ratings of corroborator honesty were significantly lower when the corroborator was described as the suspect's son ( $M = 5.54$ ,  $SD = 2.11$ ) than when described as the suspect's neighbour ( $M = 6.90$ ,  $SD = 1.86$ ,  $d = 0.68$ ) or a stranger ( $M = 6.96$ ,  $SD = 1.95$ ,  $d = 0.70$ ),  $ps < .001$ . Honesty ratings did not differ significantly across neighbour and stranger corroborator conditions ( $p = 1.00$ ).

### **Ratings of the Overall Credibility of the Alibi Corroborator**

A 2 (Age: Child vs. Adult)  $\times$  3 (Relationship: Son vs. Neighbour vs. Stranger) between subjects ANOVA was conducted on participants' ratings of the overall credibility of the alibi corroborator. There was no significant main effect of Age,  $F(1, 337) = 0.18$ ,  $p = .674$ ,  $\eta_p^2 = .001$ , nor was there a significant Age  $\times$  Relationship interaction,  $F(2, 337) = 0.03$ ,  $p = .973$ ,  $\eta_p^2 = .000$ . There was, however, a significant main effect of Relationship,  $F(2, 337) = 12.86$ ,  $p < .001$ ,  $\eta_p^2 = .07$ . Seven percent of the variance in participants' ratings of the overall credibility of the alibi corroborator could be accounted for by the relationship between the suspect and the corroborator. Post-hoc tests (with a Bonferroni correction) indicated that participants rated the alibi corroborator as significantly less credible overall when the corroborator was described as the suspect's son ( $M = 5.26$ ,  $SD = 2.18$ ) than when described as the suspect's neighbour ( $M = 6.35$ ,  $SD = 1.70$ ,  $d = .56$ ) or a stranger ( $M = 6.44$ ,  $SD = 1.89$ ,  $d = .58$ ),  $ps < .001$ . Credibility ratings did not differ significantly across neighbour and stranger corroborator conditions ( $p = 1.00$ ).

### **Open-Ended Responses**

One hundred and forty-eight participants (43.1%) mentioned the suspect-corroborator relationship, 123 participants (35.9%) mentioned the age of the alibi corroborator, 78 (22.7%)

mentioned that the corroborator may be motivated to lie for the suspect, 57 (16.6%) mentioned that the corroborator might be unintentionally mistaken, 50 (14.6%) mentioned that they needed more information to make their decisions, 30 (8.7%) mentioned that the corroborator may have been influenced, 29 (8.5%) mentioned that the corroborator may have been distracted at the time of the alibi event, and 12 (3.5%) mentioned that the corroborator may have also been involved in the offence (i.e., may have been an accomplice). Note that these were open-ended responses and so participants were free to mention more than one of these factors. Open-ended responses were not analyzed further.

### **Results Summary**

In Study 1, participants rated the suspect's son (as compared to a neighbour or stranger) as significantly less believable, less honest, and less credible overall. Ratings of the neighbour and stranger did not differ on any of the dependent measures. There were no significant main effects of corroborator age on any of the dependent measures. Lastly, there were no significant interaction effects on any of the dependent measures (with one exception – within the child corroborator condition, participants rated the son as less likely to be mistaken than a stranger)

### **2.3 Discussion**

In the present study, I examined the extent to which alibi assessment outcomes differed as a function of the age of an alibi corroborator (8-year-old vs. 25-year-old) and the suspect-corroborator relationship (Son vs. Neighbour vs. Stranger). In an effort to reconcile the contradictory findings of past research regarding the effects of corroborator age, I attempted to establish a relatively neutral alibi event (i.e., while playing baseball at a local park, the corroborator sees the suspect). That is, an event that did not last for an entire day (e.g., Dahl & Price, 2012), did not contain multiple other embedded variables (e.g., Eastwood et al., 2016), and

did not depend entirely on the age of the corroborator (i.e., a child or an adult playing baseball in a park are both plausible scenarios).

The current findings fit with past research regarding the impact of a corroborator's relationship with a suspect (e.g., Culhane & Hosch, 2004; Hosch et al., 2011). As hypothesized, participants in the current study rated the suspect's son as less believable, less honest, and less credible than the suspect's neighbour or a stranger. Clearly, participants demonstrated a higher level of skepticism toward the close-relationship corroborator (though the effect was not large). It is worth noting that such skepticism is not without basis. As reviewed earlier, close relationships appear to increase the likelihood that a corroborator will support a false alibi (Marion & Burke, 2017). Indeed, participants' skepticism toward the suspect's son was reflected in the (arguably more consequential) rating of the likelihood of the suspect's guilt. When the corroborator was described as the suspect's son, the suspect was rated as more likely to be guilty than when the corroborator was described as the suspect's neighbour or a stranger.

In contrast to Eastwood et al. (2016) and Dahl and Price (2012), and contrary to my hypothesis, no main effects of age were found in the current study. It is worth mentioning, however, that there was a small effect of corroborator age on honesty ratings ( $p = .055$ ,  $\eta_p^2 = .01$ ). Specifically, participants rated the 8-year-old corroborator as slightly more likely to be honest than the 25-year-old corroborator (but again, the observed effect was quite small and not statistically significant). Price and Dahl (2017) found that child corroborators were rated as more honest than adults but that this difference was not reflected in ratings of the suspect's guilt. Thus, while the 8-year-old corroborator in the current study may have been perceived as slightly more honest than the 25-year-old, this difference was not nearly strong enough to produce any significant differences in ratings of overall credibility or suspect guilt across age conditions.

However, differences in perceptions of credibility may be observed when younger children are assessed (e.g., preschoolers). To explore this possibility, a 4-year-old condition was included in Study 2.

It is important to point out that the vignettes provided only a fragmentary snapshot of the totality of the investigation (i.e., only brief descriptions of the crime and the suspect's alibi). Therefore, participants may have rated the suspect's guilt only tentatively and with the foreknowledge that said rating could be revised as the hypothetical investigation unfolds. Indeed, many participants commented on the need for additional information to make more informed decisions (e.g., "It is difficult whether or not to make any decision certain with these statements. What one states in written form is only a fraction of the whole picture") and many expressed a desire to continue with the investigation (e.g., "We live in a country where you're innocent until proven guilty. I would continue the investigation but wouldn't jump to a conclusion that the witness was lying"). A forced-choice investigative decision question was included in Study 2 in order to determine whether participants would choose to continue to pursue the individual as their primary suspect or begin to search for other potential suspects.

While only a minority of participants mentioned the corroborator's age (35.9 %) and relationship with the suspect (43.1 %) in their open-ended responses, the significant effects of relationship on the dependent measures suggests that participants were using this information to inform their assessments. This suggests that, in general, participants were paying attention to the manipulation of suspect-corroborator relationship. However, it is not known whether participants were paying sufficient attention to the manipulation of corroborator age. More direct manipulation checks were included in Study 2.



### Chapter 3: Study 2

As with Study 1, the purpose of Study 2 was to continue to explore the effects of corroborator age on alibi assessment. Specifically, a 4-year-old age condition was introduced, the baseball aspect of the alibi event was dropped, an investigative decision question was added, and more direct manipulation checks were used. In an alibi assessment context, researchers have previously examined corroborator ages as young as 6-years-old (e.g., Price & Dahl, 2017). Developmental research has found that genuine differences exist in the autobiographical memory ability of preschoolers versus that of older children (e.g., Nelson & Fivush, 2004). For example, younger children tend to report less information than do older children (e.g., Ornstein, Gordon, & Larus, 1992). These differences notwithstanding, Lamb, Sternberg, Orbach, Esplin, Stewart, and Mitchell (2003) found that children as young as 4-years-old are capable of providing substantial, forensically relevant information in response to free-recall prompts. As previously mentioned, adults' perceptions of the memory abilities of children often differ for younger versus older children, but these differences are not always consistent. Therefore, I chose to include a 4-year-old corroborator condition in the current study to compare against the older child (8-year-old) and adult (25-year-old) conditions.

The alibi event used in Study 1 consisted of an alibi corroborator playing baseball in a park and seeing the suspect. However, 8.5% of participants expressed some level of concern about the possibility that the corroborator could have been distracted (e.g., "...he was already preoccupied playing baseball"). Therefore, the baseball component was dropped for Study 2, and instead, the alibi event consisted of the alibi corroborator and the suspect walking their dog together in the park. The suspect-corroborator relationship was held constant (i.e., father and son) across all conditions in Study 2, since in reality most corroborators consist of people who

are close with the suspect (e.g., family and friends) (e.g., Culhane et al., 2008) and this is likely to be particularly relevant for child corroborators due to their need for supervision. In keeping with the two-factor model mentioned previously, in Study 2, I chose to manipulate the cognitive difficulty associated with remembering the alibi event. In theory, events that are relatively difficult to remember should be more problematic for children than for adults due to their underdeveloped cognitive ability.

As mentioned, many participants expressed a need for additional information in order to make their decisions and some participants pointed out that they would opt to investigate further before arriving at any conclusions. In reality, an investigator's decision regarding the continuation of an investigation is not one that is likely to be represented appropriately by a series of Likert scales. Thus, in Study 2 I included a binary investigative decision question in order to determine whether participants would choose to continue to pursue the individual as their primary suspect or begin to search for other potential suspects. Similar investigative decision-making questions have been used in previous research as well (Dahl & Price, 2012; Price & Dahl, 2017). Lastly, to ensure that participants were paying attention to the manipulations, more direct manipulation checks were included at the end of Study 2.

I hypothesized that participants would rate the alibi corroborator as more credible when the alibi event was 'easy to remember' (i.e., recent) than when the event was 'difficult to remember' (i.e., delayed). In keeping with the aforementioned two-factor model, it was hypothesized that when the level of cognition required to remember the alibi event is perceived to be relatively high, adult corroborators will be significantly more believable than children. On the other hand, it is expected that when the perceived level of cognition needed to remember the event is comparably lower (i.e., when the event is seen as relatively easy to remember), child

corroborators will be rated as more believable. Given the lack of age effects in Study 1, no specific hypotheses were formulated with regards to the main effect of the age of the alibi corroborator.

### 3.1. Method

#### 3.1.1 Participants

The total sample consisted of 236 students from the University of Ontario Institute of Technology (103 males, 133 females;  $M_{\text{age}} = 20.11$  years,  $SD = 3.48$ ,  $Range = 17-51$ ). Eighty-two participants self-identified as White (34.7%), 65 participants self-identified as South Asian (27.5%), 30 participants self-identified as Black (12.7%), 17 participants self-identified as Other (7.2%), 14 participants self-identified as Arab (5.9%), 12 participants self-identified as Filipino (5.1%), 12 participants self-identified as Chinese (5.1%), 7 participants self-identified as Southeast Asian (3.0%), 5 participants self-identified as West Asian (2.1%), 4 participants self-identified as Korean (1.7%), 3 participants self-identified as Latin American (1.3%), 1 participant self-identified as Japanese (0.4%). Ninety-five participants (40.3%) were in their first year of study. A power analysis<sup>5</sup> indicated that the current sample was sufficient to achieve statistical power  $> .80$ .

Those participants who did not correctly report the alibi event, corroborator age, and delay at the end of the survey were removed prior to analysis. Fifty-seven participants were removed in this process. Data from an additional 45 participants could not be used in the analysis due to a survey error. The total sample used for data analysis consisted of 134 adult participants (62 males, 72 females;  $M_{\text{age}} = 20.41$  years,  $SD = 4.24$ ,  $Range = 17-51$ ).

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<sup>5</sup> A minimum sample size of 157 was determined from a power analysis conducted using G\*Power (Faul et al., 2007). Due to the novelty of the present study, a medium effect size was assumed. Alpha was set at .05 and power at .80 (as advised by Cohen, 1988).

### 3.1.2 Materials and Design

Study 2 used a 2 (level of cognition: easy-to-remember vs. difficult-to-remember)  $\times$  3 (age: 4-year-old vs. 8-year-old vs. 25-year-old) between-subjects design. An online survey was created using Qualtrics survey software. The first page of the survey presented participants with an informed consent form that contained information about the study and contact information for the researchers. The second page consisted of a series of demographic questions (e.g., age and gender). The third page instructed participants to assume the role of a police detective investigating an armed robbery case. Participants were presented with a brief description of the case: a local convenience store was robbed by a man wearing a ski mask, and based on eyewitness reports of the make and model of the perpetrator's car and a physical description of the perpetrator, police have identified a potential suspect. In order to manipulate the level of cognition needed to remember the alibi event, the delay between the time of the crime and the time of questioning was varied such that the crime was described as having taken place at either: "7:00 pm yesterday evening" (easy-to-remember) or at "7:00 pm one month ago" (difficult-to-remember)<sup>6</sup>. The potential suspect denied involvement in the crime, and claimed that he and his son were walking his dog at a park near his home (located across town from the convenience store) at the time that the robbery took place. At this point, participants were instructed to rate

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<sup>6</sup> To perform a manipulation check, a pilot study was conducted ( $n = 34$ ). Participants rated the level of difficulty associated with remembering alibi events that varied along two dimensions (delay: 1-day ago vs. 1-week ago vs. 1-month ago; novelty: novel vs. mundane). A repeated-measures ANOVA revealed a significant main effect of delay on ratings of difficulty, Wilks' Lambda = .38,  $F(2, 32) = 26.05$ ,  $p < .001$ , multivariate  $\eta_p^2 = .62$ . Participants rated the event that occurred 1-month ago as being significantly more difficult to remember than the event that occurred 1-day ago (mean difference = 2.38,  $p < .001$ ). Therefore, the manipulation of perceived cognitive difficulty in the present study (i.e., 1-day delay vs. 1-month delay) was successful.

the likelihood that the suspect was guilty on a 10-point scale (1 = *Extremely Unlikely* to 10 = *Extremely Likely*).

On the next page, participants were informed that as the next step in their investigation, they interviewed the suspect's son (the alibi corroborator). Participants were randomly presented with an alibi corroborator who was either a 4-year-old, 8-year-old, or a 25-year-old. In each condition, the corroborator claimed to have been in the park walking the dog with his father (the suspect). Participants were instructed to rate the following on 10-point Likert scales: the likelihood that the suspect is guilty (1 = *Extremely Unlikely* to 10 = *Extremely Likely*), the believability of the alibi corroborator (1 = *Extremely Unbelievable* to 10 = *Extremely Believable*), the likelihood that the alibi corroborator is mistaken about being with the suspect (1 = *Extremely Unlikely* to 10 = *Extremely Likely*), the likelihood that the alibi corroborator is being honest about being with the suspect (1 = *Extremely Unlikely* to 10 = *Extremely Likely*), and the overall credibility of the alibi corroborator (1 = *Extremely Uncredible* to 10 = *Extremely Credible*). Participants were also asked to describe, in as much detail as possible, the reasoning for their ratings. On the penultimate page, in order to determine if participants had paid attention, they were asked (in the form of multiple-choice questions) when the crime occurred, what the suspect claimed to be doing at the time of the crime, and the age of the alibi corroborator. Participants were also asked if they were parents and if they had any experience working with children (yes/no). The final page of the survey informed participants that the study had concluded, and thanked them for their participation.

### **3.1.3 Procedure**

Undergraduate students (who were enrolled in either an introductory or an abnormal psychology class) registered to participate in the study through an online, research registration

system. Upon arrival at the psychology laboratory, each participant was greeted and shown to a private cubicle containing a desktop computer. Prior to beginning the online survey, participants were provided with verbal instructions on how to complete the study. Before starting the survey, participants were presented with a page containing the informed consent form (by advancing beyond that page, consent was implied). Upon completion of the survey, participants were presented with a debriefing page. When participants finished the study, they were thanked for their participation and each student was awarded 0.5% bonus in his/her psychology course.

#### **3.1.4 Coding Open-Ended Responses**

Each participant provided the reasoning for his/her ratings in an open-ended response. Through an iterative process, a coding guide was constructed by the first author who then coded all responses. Four components were coded as present or absent: whether the participant mentioned (1) that the alibi event was inherently implausible (Plausibility), (2) that more information was necessary in order to make their decisions (More Information), (3) that the corroborator may have been influenced (Susceptibility to Influence), and (4) that the corroborator might have been an accomplice (Accomplice).

#### **3.1.5 Inter-Rater Reliability**

A research assistant also coded each participant's open-ended response using the same coding guide. The reliability of the coding was assessed using Cohen's Kappa (Cohen, 1960) and percentage agreement ( $n = 127$ ). The Kappa and percentage agreement (in parentheses) for Plausibility was 0.89 (99%), for More Information was 0.54 (93%), for Susceptibility to Influence was 0.83 (91%), and for Accomplice was 0.79 (98%). The average Kappa across all items was 0.76 (95%), indicating substantial agreement between coders (Landis & Koch, 1977).

### **3.2 Results**

### **Pre-Alibi Guilt Ratings**

Immediately after viewing the crime scenario vignette, participants were asked to rate the likelihood of the suspect's guilt (on a 10-point Likert scale). Though all participants had been presented with identical information up to this point, in order to ensure that there were no group differences based on condition, a 2 (Delay: 1-Day vs. 1-Month)  $\times$  3 (Age: 4-year-old vs. 8-year-old vs. 25-year-old) between subjects analysis of variance (ANOVA) was performed on participants' ratings of the likelihood that the suspect was guilty. The main effect of Age was not significant,  $F(2, 128) = 0.86, p = .427, \eta_p^2 = .01$ , nor was the main effect of Delay,  $F(1, 128) = 2.65, p = .106, \eta_p^2 = .02$ . The Age  $\times$  Delay interaction was also not significant,  $F(2, 128) = 0.31, p = .731, \eta_p^2 = .01$ .

### **Pre-Alibi vs Post-Alibi Guilt Ratings**

A repeated measures ANOVA was conducted to compare participants' pre-alibi and post-alibi ratings of the likelihood of the suspect's guilt. There was a significant difference between pre-alibi and post-alibi guilt ratings,  $F(1, 133) = 19.82, p < .001, \eta_p^2 = .13$ . Thirteen percent of the variance in guilt ratings could be accounted for by whether the suspect's guilt was rated before or after viewing the alibi. Participants' ratings of the likelihood of the suspect's guilt were significantly higher before viewing the alibi ( $M = 5.78, SD = 1.68$ ) than they were after viewing the alibi ( $M = 5.25, SD = 1.83$ ).

### **Post-Alibi Guilt Ratings**

A 2 (Delay: 1-Day vs. 1-Month)  $\times$  3 (Age: 4-year-old vs. 8-year-old vs. 25-year-old) between subjects ANCOVA was conducted on participants' ratings of the likelihood that the suspect was guilty (with pre-alibi guilt ratings as a covariate). There was a significant main effect of Age,  $F(2, 127) = 4.43, p = .014, \eta_p^2 = .07$ . Seven percent of the variance in guilt ratings

could be accounted for by the age of the alibi corroborator. Pairwise comparisons revealed that guilt ratings were significantly lower when the corroborator was described as an 8-year-old ( $M = 5.09$ ,  $SD = 1.99$ ) than when described as a 25-year-old ( $M = 5.51$ ,  $SD = 1.63$ ,  $d = .23$ ,  $p = .004$ ), no differences were observed between the 4-year-old ( $M = 5.15$ ,  $SD = 1.89$ ) and 25-year old or 8-year-old conditions ( $ps > .05$ ).

There was also a main effect of Delay,  $F(1, 127) = 7.01$ ,  $p = .009$ ,  $\eta_p^2 = .05$ . Five percent of the variance in guilt ratings could be accounted for by the delay between the time of the crime and the time of questioning. Participants rated the corroborator as significantly more likely to be guilty when the alibi event was described as taking place one month ago ( $M = 5.34$ ,  $SD = 1.91$ ) versus one day ago ( $M = 5.15$ ,  $SD = 1.75$ ,  $d = 0.10$ ). The Age  $\times$  Delay interaction was not significant,  $F(2, 127) = 0.64$ ,  $p = .531$ ,  $\eta_p^2 = .01$ .

### **Alibi Believability**

A 2 (Delay: 1-Day vs. 1-Month)  $\times$  3 (Age: 4-year-old vs. 8-year-old vs. 25-year-old) between subjects ANOVA was conducted on participants' ratings of alibi believability. There was not a significant main effect of Age,  $F(2, 128) = 1.36$ ,  $p = .259$ ,  $\eta_p^2 = .02$ , nor was there a significant main effect of Delay,  $F(1, 128) = 0.01$ ,  $p = .927$ ,  $\eta_p^2 < .001$ . The Age  $\times$  Delay interaction was also not significant,  $F(2, 128) = 0.18$ ,  $p = .838$ ,  $\eta_p^2 = .003$ .

### **Ratings of the Likelihood of Corroborator Mistakenness**

A 2 (Delay: 1-Day vs. 1-Month)  $\times$  3 (Age: 4-year-old vs. 8-year-old vs. 25-year-old) between subjects ANOVA was conducted on participants' ratings of the likelihood that the alibi corroborator was mistaken about seeing the suspect. There was a significant main effect of Age,  $F(2, 128) = 3.72$ ,  $p = .027$ ,  $\eta_p^2 = .06$ . Six percent of the variance in ratings of the likelihood that the corroborator was mistaken could be accounted for by the age of the alibi corroborator. Post-



hoc tests (with a Bonferroni correction) revealed that when the alibi corroborator was a 4-year-old, participants rated the corroborator as more likely to be mistaken ( $M = 6.22$ ,  $SD = 1.68$ ) than when the corroborator was an 8-year-old ( $M = 5.13$ ,  $SD = 2.25$ ,  $d = .55$ ,  $p = .026$ ). Ratings did not differ significantly between the 25-year-old condition ( $M = 5.43$ ,  $SD = 1.73$ ) and the 8- and 4-year-old conditions ( $ps > .05$ ). There was not a significant main effect of Delay,  $F(1, 128) = 2.09$ ,  $p = .151$ ,  $\eta_p^2 = .02$ . The Age  $\times$  Delay interaction was also not significant,  $F(2, 128) = 1.12$ ,  $p = .330$ ,  $\eta_p^2 = .02$ .

### **Ratings of the Likelihood of Corroborator Honesty**

A 2 (Delay: 1-Day vs. 1-Month)  $\times$  3 (Age: 4-year-old vs. 8-year-old vs. 25-year-old) between subjects ANOVA was conducted on participants' ratings of the likelihood that the alibi corroborator was being honest about seeing the suspect. There was not a significant main effect of Age,  $F(2, 128) = 2.19$ ,  $p = .116$ ,  $\eta_p^2 = .03$ , nor was there a significant main effect of Delay,  $F(1, 128) = 0.10$ ,  $p = .747$ ,  $\eta_p^2 = .001$ . The Age  $\times$  Delay interaction was also not significant,  $F(2, 128) = 0.99$ ,  $p = .374$ ,  $\eta_p^2 = .02$ .

### **Ratings of the Overall Credibility of the Corroborator**

A 2 (Delay: 1-Day vs. 1-Month)  $\times$  3 (Age: 4-year-old vs. 8-year-old vs. 25-year-old) between subjects ANOVA was conducted on participants' ratings of the overall credibility of the alibi corroborator. There was a significant main effect of Age,  $F(2, 128) = 4.79$ ,  $p = .010$ ,  $\eta_p^2 = .07$ . Seven percent of the variance in overall credibility ratings could be accounted for by the age of the alibi corroborator. Post-hoc tests (with a Bonferroni correction) revealed that when the alibi corroborator was an 8-year-old, participants rated the corroborator as significantly more credible ( $M = 6.07$ ,  $SD = 1.63$ ) than when the corroborator was a 4-year-old ( $M = 4.93$ ,  $SD = 1.71$ ,  $d = .68$ ,  $p = .004$ ) but did not differ significantly from when the corroborator was a 25-year-

old ( $M = 5.38$ ,  $SD = 1.69$ ,  $d = .42$ ,  $p = .138$ ). Ratings did not differ significantly between the 4-year-old and 25-year-old condition ( $p = .580$ ). There was also a significant main effect of Delay,  $F(1, 128) = 6.28$ ,  $p = .013$ ,  $\eta_p^2 = .05$ . Five percent of the variance in overall credibility ratings could be accounted for by the delay between the time of the crime and the time of questioning. Participants rated the corroborator as significantly more credible when the alibi event was described as taking place one day ago ( $M = 5.87$ ,  $SD = 1.69$ ) versus one month ago ( $M = 5.16$ ,  $SD = 1.70$ ). The Age  $\times$  Delay interaction was not significant,  $F(2, 128) = 1.98$ ,  $p = .143$ ,  $\eta_p^2 = .03$ .

### **Investigative Decision**

A chi-square test revealed that investigative decisions did not differ as a function of Corroborator Age,  $\chi^2(1, N = 134) = 1.31$ ,  $p = .521$ . The number of participants who chose to continue to pursue the individual as the prime suspect was similar for 4-year-old (25; 18.7%), 8-year-old (23; 17.2%), and 25-year-old (28; 20.9%) corroborator conditions. A chi-square test also revealed that investigative decisions did not differ as a function of Delay,  $\chi^2(1, N = 134) = 0.04$  (with Yates' Continuity Correction),  $p = .853$ . The number of participants who chose to continue to pursue the individual as the prime suspect was similar for the 1-Day delay (33; 24.6%) and 1-Month delay (43; 32.1%) conditions. Lastly, investigative decisions did not differ as a function of participants' self-reported experience working with children,  $\chi^2(1, N = 134) = 3.44$  (with Yates' Continuity Correction),  $p = .064$ . The number of participants who chose to continue to pursue the individual as the prime suspect was similar for those who reported having experience working with children (42, 31.3%) and for those who reported having no experience working with children (34, 25.4%)

### **Open-Ended Responses**

Fifty-one participants (38.1%) mentioned that the corroborator may have been influenced, 7 participants (5.2%) mentioned that the corroborator may have also been involved in the offence (i.e., may have been an accomplice), 6 participants (4.5%) mentioned the need for more information in order to make their decision, and 5 participants (3.7%) mentioned that the alibi event sounded inherently implausible.

### 3.3 Discussion

In the present study, I examined the extent to which alibi assessment outcomes differed as a function of the age of the corroborator (4-year-old vs. 8-year-old vs. 25-year-old) and the level of difficulty associated with remembering the alibi event (1-month delay vs. 1-day delay). Results indicated that alibi assessors viewed the 8-year-old as more compelling than the 4-year-old and 25-year-old overall. Participants rated the suspect as less likely to be guilty when described as an 8-year-old as compared to a 25-year-old, and rated the 8-year-old as a more credible corroborator overall (the difference in guilt ratings between the 8- and 4-year-old did not reach the conventional level of significance, nor did the credibility ratings between the 8- and 25-year-old conditions,  $ps > .05$ ). Participants rated the 8-year-old corroborator as less likely to be mistaken than the 4-year-old, as well as marginally more likely to be honest than the 25-year-old. This pattern of results is consistent with the two-factor model of child witness credibility. On the one hand, participants appeared to favour the cognitive ability of the 8-year-old relative to the 4-year-old, and on the other hand, participants demonstrated a more favourable view of the honesty level of the 8-year-old as compared to the 25-year-old.

Consistent with my hypothesis, the current findings also revealed that participants were more skeptical of an alibi when it was provided after a delay of one month as compared to one day. Participants provided significantly lower ratings of the overall credibility of the

corroborator and higher ratings of the likelihood of the suspect's guilt in the 1-month delay condition, as compared to the 1-day delay condition. These effects, however, were not reflected in participants' investigative decisions about whether to continue to pursue the individual as the prime suspect or to begin looking for other potential suspects. Somewhat surprisingly, participants did not rate the corroborator in the 1-month delay condition as being more likely to be mistaken than the corroborator in the 1-day delay condition. This may have been due to the seeming lack of consequences of the delay. That is, delay may only affect ratings of the likelihood of being mistaken insofar as delay is associated with other indicators of inaccuracy (e.g., inconsistencies, lack of detail) – the vignettes in the present study did not capture these features. It is also possible that delay simply did not play a crucial role in many participants' assessments, as evidenced by the large number of participants who were excluded on the basis of their inability to correctly report the delay at the end of the survey.

As mentioned, those participants who did not pass the manipulation checks were removed prior to analysis. The majority of exclusions were due to participants' inability to report the delay at the end of the survey. Indeed, many of these participants correctly reported what the suspect claimed to be doing, as well as the age of the corroborator, but nonetheless failed to report the delay correctly. Together with the aforementioned null effect on ratings of the likelihood of the corroborator being mistaken, these observations may suggest either (1) that the current manipulation of delay was not strong enough (i.e., a wider contrast in delay conditions may have produced a more robust effect) or (2) that delay is not a critical aspect of the assessment process given the disproportionate exclusions due to participants' misreporting of delay at the end of the survey. These explanations may also account for the lack of significant interactions between age and delay (contrary to my hypothesis).

There was again a notable proportion of participants who mentioned that the corroborator may have been influenced. However, the number of participants who mentioned this as a possibility was much greater in Study 2 than in Study 1 (38.1% vs. 8.7%, respectively). One possible explanation for the increased concern about the corroborator's susceptibility to influence is that in Study 2 the corroborator was the suspect's son (constant across all conditions) whereas in Study 1 the suspect-corroborator relationship varied quite widely across conditions (son vs. neighbour vs. stranger). The closeness of the relationship in Study 2 may have contributed to participants' increased overall concern about the father's influence over his child. In line with this explanation, Eastwood et al. (2016) noted that their participants were particularly concerned about the potential for a young alibi corroborator to be influenced when the suspect and corroborator were related. Thus, participants' concern about the suspect's influence on the corroborator may be more problematic when the corroborator is young and closely related to the suspect.

## Chapter 4: General Discussion

### A Two-Factor Perspective

Previous inconsistencies in the literature regarding the impact of the age of an alibi corroborator provided the impetus for the current research. To reiterate, some studies have found that child corroborators are more believable than are adults (Dahl & Price, 2012; Price & Dahl, 2014), others have found that adult corroborators are more believable (Eastwood et al., 2016), and others have found no differences (Price & Dahl, 2017). The current results are consistent with a two-factor interpretation of the perceived credibility of child alibi corroborators. That is, the current results suggest that an 8-year-old corroborator, as compared to a 4- or 25-year-old, may approximate the ‘ideal’ balance between (1) perceptions of accuracy (i.e., more accurate than a younger child) and (2) perceptions of honesty (i.e., marginally more honest than an adult). This pattern of results fits with previous research that has found that witnesses around age 8 are perceived as highly credible (Nunez, Kehn & Wright, 2011; Wright, Hanoteau, Parkinson, & Tatham, 2010). If this interpretation is correct, how can we reconcile the mixture of findings that exist regarding the effect of corroborator age?

In the present research, for example, no age differences were found in Study 1, but were found in Study 2. One possible explanation for this is the relative asymmetry between honesty and cognitive ability across studies. In Study 1, the alibi event was brief and consisted only of visual contact (the corroborator *saw the suspect*) whereas in Study 2 the corroborator claimed to have been *with the suspect*. The suspect-corroborator relationship in Study 1 also varied widely (between family member, neighbour, and stranger) whereas in Study 2 only a close-relationship corroborator was used (family member across conditions). Overall, the cognitive ability of the corroborator may have been more salient in Study 1, whereas participants in Study 2 may have

been primed to consider the corroborator's honesty. I submit that previous inconsistencies with regards to the effect of corroborator age can be largely accounted for along similar lines.

The perceptions of child- versus adult-corroborators depends largely on the balance between assessors' perceptions of honesty and cognitive ability in any given case (as researchers have argued elsewhere, e.g., Goodman et al., 1989). Of course, this should not be taken to suggest that the perceived honesty and cognitive ability of an alibi corroborator are the *only* relevant considerations for alibi assessors. Certainly, other variables may interact with, or overshadow entirely, the effect of corroborator age (such as the effect of inconsistent testimony documented by Price & Dahl, 2017). Furthermore, the age of the corroborator does not appear to be associated with decisions about whether to continue to pursue the individual as the primary suspect or to begin searching for other potential suspects. To summarize, the two-factor model provides a useful conceptual framework for understanding child corroborator credibility assessments, but is less applicable to broader investigative decision-making (i.e., investigative decisions depend on a wide range of factors outside the purview of the two factor model).

Similar discrepancies between alibi-ratings and binary investigative decisions have been documented in previous research. For example, Dahl and Price (2012) found significant effects of corroborator age on ratings of alibi credibility but no differences in participants' decision about whether to arrest the suspect. Eastwood, Lively, Snook, and Snow (2018) uncovered a similar mismatch between participants' alibi ratings and their decisions about whether to continue to pursue the individual as their prime suspect or to begin searching for other potential suspects. There are several possible explanations for the present, and past, discrepancies between alibi-ratings and binary investigative decision-making. Perhaps the most obvious possibility is that the brief descriptions of the mock-crime scenario and the suspect's alibi only

bear directly on ratings of alibi believability and ratings of the corroborator. In contrast, meaningful decisions about the entirety of the investigation would depend on the provision of extensive case information – as many participants pointed out (e.g., “need more informationg [sic] to make the dicision [sic]”; “[t]here is not enough information”). Another potential explanation is that (even if participants were provided with sufficient case information), they may be largely unaware of the factors that are influencing their decisions (Nisbett & Wilson, 1977). Interestingly, Eastwood et al. (2016) found that law enforcement officers, as compared to student samples, were better able to identify those factors that influenced their alibi assessment decisions. Thus, lay-participants’ lack of investigative experience may compound their lack of insight into what is driving their investigative decisions. Whatever the reason for this discrepancy, it highlights an important disjunction between perceptions of the alibi itself and decisions about the investigation, and raises questions about the practical utility of measuring alibi ratings alone. Ultimately, these findings demonstrate that alibi assessment outcomes are not necessarily commensurate with investigative outcomes.

### **Considering the Possibility of a Third Factor**

It is noteworthy that 8-year-olds were viewed in such a favourable light considering the proportion of respondents who expressed concern about the susceptibility of the child to external influence (8.7% in Study 1, 38.1% in Study 2). These findings fit with past research that has shown that adults are often concerned about the manipulability of child witnesses (Goodman et al., 1987) and the vulnerability of child alibi corroborators to the influence of others (Eastwood et al., 2016). Perceptions of a child’s susceptibility to influence may be closely related to perceptions of their level of honesty and cognitive ability. Nevertheless, these factors may be conceptually distinct. For example, a child corroborator may be perceived as high in honesty but



also susceptible to being influenced by the suspect (e.g., if the child does not appear to understand that such behaviour constitutes dishonesty). Likewise, a child may be perceived as high in cognitive ability (in the sense of being capable of deliberative reasoning, etc.,) but nonetheless highly susceptible to social and emotional pressures. Indeed, such a dichotomy has been recognized within the adolescence research literature (e.g., ‘hot’ vs. ‘cold’ processes, Smith, Chein, & Steinberg, 2013). Whether alibi assessors make such distinctions when determining the credibility of a corroborator is a question for future research. Participants’ apparent preoccupation with the possibility that the corroborator could have been influenced suggests that this dimension (i.e., perceived susceptibility to external influence) may constitute an important third factor that is not captured fully by the honesty and cognitive components of the extant credibility model (a possibility also raised by Eastwood et al., 2016).

Another question raised by the perceived susceptibility of young witnesses to the influence of others is whether such a concern might have any objective justification. Contrary to participants’ concerns about the suspect influencing the child corroborator, a number of studies have found that it is difficult for adults to coach young children to lie successfully (e.g., Vrij, Akehurst, Soukara, & Bull, 2002; Warren, Bakhtiar, Mulrooney, Raynor, Dodd, & Peterson, 2015; but see Talwar et al., 2006). Vrij et al. (2002) noted that coaching was not successful with their youngest participants (5- and 6-year-olds), as these children appeared to have difficulty understanding the instructions. Similarly, Tate, Warren, and Hess (1992, as cited by Warren et al., 2015) reported that only seven of 20 coached children (age range = 2.6–8 years) were able to lie throughout a conversation with another person. More recently, Warren et al. (2015) reported that parents were unsuccessful in coaching their 5- to 7-year-old children to lie. Although some studies have found that young children can indeed be coached to successfully tell believable lies

(e.g., 4- to 7-year-olds, Talwar et al., 2006), the aforementioned research suggests that this is not necessarily a straightforward task. Thus, many participants' belief in the current research that adult suspects can readily manipulate child corroborators – while not entirely without basis – may constitute an overestimation of children's ability to successfully maintain a coached account.

### **Implications**

It is worth reemphasizing here that the current line of inquiry is in its infancy. The present work contributes to a small but emerging body of research examining perceptions of alibi corroborators in general and an even smaller body of work examining the effect of corroborator age in particular. Clearly, further study is needed before alibi researchers can confidently deliver substantive policy recommendations or actionable guidelines for police practice. With this caveat in mind, the present work does have a number of implications for the assessment of alibis in criminal justice proceedings. In line with Dunning's (1989) comments about the general usefulness of child credibility research, attorneys may wish to use the current findings to either add or detract from the perceived credibility of child witnesses in any given case. For example, attorneys may wish to maximize or minimize the credibility of a child corroborator by emphasizing either honesty or cognitive ability, respectively.

The current findings also help to highlight some important gaps between common-knowledge and scientific-knowledge such that investigators and jurors may benefit from additional instructions and/or expert testimony on matters of child alibi testimony. In addition to the aforementioned observation that participants may have an exaggerated perception of the manipulability of young children, participants also rated the 4-year-old corroborator as more likely to be mistaken than the 8-year-old corroborator. Research has shown, however, that

children as young as 4-years-old can provide substantive and forensically useful information in response to free-recall prompts (Lamb et al., 2003) and although younger children recount their experiences with greater brevity than that of older children (e.g., Ornstein et al., 1992), they are not necessarily less accurate (e.g., Marin, Holmes, Guth, & Kovac, 1979). While previous research by Quas, Thompson, and Clarke-Stewart (2005) reported that a majority (66%) of their participants agreed that children have sufficient memory to be reliable witnesses in court, the current findings suggest that the documented ability of young witnesses to provide reliable information is largely beyond the ken of the average participant. Therefore, expert testimony may be warranted in cases involving young alibi corroborators in order to safeguard against the damaging effects (e.g., undue skepticism and misattribution of guilt) that may arise due to assessors' inaccurate beliefs about young witnesses.

In addition to the practical utility of correcting alibi assessors' inaccurate beliefs about child corroborators, the current research can also inform investigative procedures. After a longer delay (one month), mock investigators in Study 2 rated the corroborator as less credible overall and the suspect as more likely to be guilty than when the alibi was provided after a shorter delay (one day). These findings comport with previous research by Dysart and Strange (2012) regarding the effect of the passage of time on alibi believability, and are in line with the authors' suggestion that alibi evidence (both person and physical) should be investigated as soon as possible after receiving the suspect's initial alibi statement. This seemingly straightforward recommendation, however, would likely require patrol officers to receive additional training in investigative techniques in order to follow-up on alibi statements, as this is ordinarily the responsibility of detectives (rather than patrol officers) (Dysart & Strange, 2012). At the very least, investigators should be made aware of the importance of completing timely investigations

of alibi statements and informed of the potential for prolonged delays to contribute to (mis)perceptions of the veracity of alibi evidence.

### **Limitations**

A number of important limitations must be highlighted. Perhaps the most obvious but by no means unique limitation of the present work was the low level of ecological validity and mundane realism. Both studies used a *mock*-investigator paradigm. The decisions and perceptions of real investigators, of course, were not examined. Under further scrutiny, however, this limitation may not be of tremendous practical consequence. For example, Eastwood et al. (2016) found that the alibi assessment processes of police officers, law enforcement students, and university students were generally similar overall. Such similarities have been documented in other domains as well (e.g., both students and police rely on non-diagnostic cues when detecting deception; Bogaard, Meijer, Vrij, & Merckelbach, 2016). In other words, if police officers had been included in the current research, there is good reason to believe that the broad pattern of results would have ultimately remained the same.

Beyond simply not being experienced investigators, participants in both studies made legally relevant decisions but were presented only with written descriptions (not video-recordings), and were unlikely to be emotionally invested in the case or concerned about the consequences of their decisions. Nor were these decisions made in consultation with other actors within the legal system (i.e., participants did not interact with real police officers, witnesses, etc.). It is worth noting, however, that previous research has uncovered few differences between mock-jurors' perceptions based on written transcripts versus video-recorded testimony (e.g., Goodman et al., 1987). Furthermore, the use of written transcripts affords a level of control that

is difficult to acquire with naturalistic video-recordings (i.e., video-recordings introduce extraneous variables such as attractiveness and demeanor).

Another limitation, and one that is also not unique to the present research, is that the generalizability of the current findings is tightly constrained. That is, one cannot extend the current findings beyond the specific age categories that were used (i.e., 4-year-old, 8-year-old, and 25-year-old) to make conclusions about other age groups. Further research is needed to examine additional ages and to examine adolescent corroborators. Lastly, participants were not informed of the suspect's age but were informed of the corroborator's age. This may have led participants to infer the suspect's age based on the age of the corroborator – particularly when the suspect was described as the corroborator's father. Participants may be more prone to believe an older suspect over a younger suspect, or vice versa. Indeed, pilot data suggested that the perceived likelihood of engaging in an armed robbery (the crime type used in both studies) varied as a function of the suspect's age. However, comments about the suspect's age seldom appeared in participants' open-ended responses concerning the reasoning for their ratings. Nevertheless, further research is needed to examine the role of the suspect's age (actual or perceived) on alibi assessment outcomes.

## **Conclusion**

The present findings comport with past studies of the suspect-corroborator relationship – close-relationship corroborators in the present research were viewed with greater skepticism than more distantly related corroborators. The present research also helps to shed light on some existing inconsistencies in the literature, and the data appear consistent with a two-factor model of child witness credibility. Mock investigators' rated an 8-year-old corroborator as more credible than a 4-year-old corroborator and (marginally) more credible than a 25-year-old

corroborator. Further, participants rated the suspect as less likely to be guilty when an 8-year-old, as opposed to a 25-year-old, corroborated his alibi. The 8-year-old child was rated as less likely to be mistaken than the 4-year-old, and (marginally) more likely to be honest than the 25-year-old. Thus, children around age 8 may have the ‘upper hand’ on dimensions of honesty and accuracy. Overall, the results suggest that older children (around age 8) may approximate the ‘ideal’ trade-off between (1) perceptions of honesty and (2) perceptions of accuracy.

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**Appendix A – Study 1 Survey Materials****Demographics**

Age: \_\_\_\_\_

Gender: Male \_\_\_\_ Female \_\_\_\_ Other \_\_\_\_\_

Choose one or more races that you consider yourself to be:

- White
- Black or African American
- Aboriginal
- Asian
- Other

Year of study:

- First
- Second
- Third
- Fourth
- Fifth or more



### Case Details

[Page 1]

In this study, you will be playing the role of a police detective investigating an armed robbery case. The robbery took place at a local convenience store. After an initial investigation, the police have identified a potential suspect. He drives the same make and model of car that was identified by an eyewitness as fleeing the scene, and although a ski mask was worn during the crime the suspect matches the general physical description given by the store clerk.

When interviewed, the potential suspect claimed to have no involvement in the crime, and reported that he was walking his dog in the park next to his home during the time the crime took place.

*At this point in the investigation, how likely do you think it is that the individual is guilty?*

Extremely Likely	Very Unlikely	Moderately Unlikely	Somewhat Unlikely	Slightly Unlikely	Slightly Likely	Somewhat Likely	Moderately Likely	Very Likely	Extremely Likely
1	2	3	4	5	6	7	8	9	10

[Page 2]

You were able to identify another individual who claims they can verify the suspect's account. He is an **[8-year-old vs. 25-year-old]** male who **[has no direct relationship with the suspect vs. is the suspect's neighbour vs. is the suspect's son]**. He reported that he was playing baseball in the park with his friends during the evening in question. He said that he saw **[the suspect vs. his neighbour vs. his father]** walking his dog past the baseball diamond at the time the crime took place. This matches the suspect's account of being in the park while the crime took place.

*At this point in the investigation, how likely do you think it is that the individual is guilty?*

Extremely Unlikely	Very Unlikely	Moderately Unlikely	Somewhat Unlikely	Slightly Unlikely	Slightly Likely	Somewhat Likely	Moderately Likely	Very Likely	Extremely Likely
1	2	3	4	5	6	7	8	9	10

*How believable is the alibi corroborator?*

Extremely Unlikely	Very Unlikely	Moderately Unlikely	Somewhat Unlikely	Slightly Unlikely	Slightly Likely	Somewhat Likely	Moderately Likely	Very Likely	Extremely Likely
1	2	3	4	5	6	7	8	9	10

*How likely do you think it is that the alibi corroborator is mistaken about seeing the suspect in the park during the time that the crime took place?*

Extremely Unlikely	Very Unlikely	Moderately Unlikely	Somewhat Unlikely	Slightly Unlikely	Slightly Likely	Somewhat Likely	Moderately Likely	Very Likely	Extremely Likely
1	2	3	4	5	6	7	8	9	10

*How likely do you think it is that the alibi corroborator is honest about seeing the suspect in the park during the time that the crime took place?*

Extremely Unlikely	Very Unlikely	Moderately Unlikely	Somewhat Unlikely	Slightly Unlikely	Slightly Likely	Somewhat Likely	Moderately Likely	Very Likely	Extremely Likely
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1            2            3            4            5            6            7            8            9            10

*Overall, how credible is the alibi corroborator?*

Extremely Unlikely	Very Unlikely	Moderately Unlikely	Somewhat Unlikely	Slightly Unlikely	Slightly Likely	Somewhat Likely	Moderately Likely	Very Likely	Extremely Likely
1	2	3	4	5	6	7	8	9	10

*Please describe, in as much detail as possible, the reasoning for your decisions:*

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...

**Appendix B – Study 2 Survey Materials****Demographics**

Age: \_\_\_\_\_

Gender: Male \_\_\_\_\_ Female \_\_\_\_\_ Other \_\_\_\_\_

Choose one or more races that you consider yourself to be:

- White
- South Asian (e.g. East Indian, Pakistani, Sri Lankan etc.)
- Chinese
- Black
- Filipino
- Latin American
- Arab
- Southeast Asian (e.g. Vietnamese, Cambodian, Laotian, Thai etc.)
- West Asian (e.g. Iranian, Afghan etc.)
- Korean
- Japanese
- Other (please specify): \_\_\_\_\_

Year of study:

- First
- Second
- Third
- Fourth
- Fifth or more

### Case Details

In this study, you will be playing the role of a police detective investigating an armed robbery case. The robbery took place at 7:00 pm [**yesterday evening vs. one month ago**] at a local convenience store. After an initial investigation, the police were able to identify a potential suspect. He drives the same make and model of car that was identified by an eyewitness as fleeing the scene, and although a ski mask was worn during the crime, the suspect matches the general physical description given by the store clerk.

When interviewed, the potential suspect claimed to have no involvement in the crime. He reported that he and his son were walking his dog in the park close to his home, which is across town from the store, during the time that the crime took place.

*At this point in the investigation, how likely do you think it is that the individual is guilty?*

Extremely Unlikely	Very Unlikely	Moderately Unlikely	Somewhat Unlikely	Slightly Unlikely	Slightly Likely	Somewhat Likely	Moderately Likely	Very Likely	Extremely Likely
1	2	3	4	5	6	7	8	9	10

As the next step in your investigation, you interview the suspect's son. He is [**4 vs. 8 vs. 25**] years old. When asked about his whereabouts around 7:00 pm [**yesterday vs. one month ago**], the son says that he was in the park with his dad walking the dog. This matches the suspect's account of being in the park while the crime took place.

*At this point in the investigation, how likely do you think it is that the individual is guilty?*

Extremely Unlikely	Very Unlikely	Moderately Unlikely	Somewhat Unlikely	Slightly Unlikely	Slightly Likely	Somewhat Likely	Moderately Likely	Very Likely	Extremely Likely
1	2	3	4	5	6	7	8	9	10

*How believable is the suspect's alibi?*

Extremely Unbelievable	Very Unbelievable	Moderately Unbelievable	Somewhat Unbelievable	Slightly Unbelievable	Slightly Believable	Somewhat Believable	Moderately Believable	Very Believable	Extremely Believable
1	2	3	4	5	6	7	8	9	10

*How likely do you think it is that the alibi corroborator is mistaken about being with the suspect in the park at the time that the crime took place?*

Extremely Unlikely	Very Unlikely	Moderately Unlikely	Somewhat Unlikely	Slightly Unlikely	Slightly Likely	Somewhat Likely	Moderately Likely	Very Likely	Extremely Likely
1	2	3	4	5	6	7	8	9	10

*How likely do you think it is that the alibi corroborator is being honest about being with the suspect at the park at the time that the crime took place?*

Extremely Unlikely	Very Unlikely	Moderately Unlikely	Somewhat Unlikely	Slightly Unlikely	Slightly Likely	Somewhat Likely	Moderately Likely	Very Likely	Extremely Likely
1	2	3	4	5	6	7	8	9	10

*Overall, how credible is the alibi corroborator?*

Extremely Uncredible	Very Uncredible	Moderately Uncredible	Somewhat Uncredible	Slightly Uncredible	Slightly Credible	Somewhat Credible	Moderately Credible	Very Credible	Extremely Credible
1	2	3	4	5	6	7	8	9	10

*Please describe, in as much detail as possible, the reasoning for your ratings:*

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*What decision would you make regarding the suspect at this point in the investigation?*

- Continue to pursue him as your prime suspect
- Begin to search for other potential suspects

Based on the scenario you just read, when did the crime occur?

- Yesterday
- One week ago
- Two weeks ago
- One month ago

Based on the scenario you just read, what did the suspect claim to be doing at the time that the crime took place?

- Golfing
- Walking his dog at the park
- Working out at the gym
- Watching TV at home

Are you a parent?

- Yes
- No

Do you have any past experience working with children?

- Yes (Please specify) \_\_\_\_\_
- No

**Appendix C – Study 1 Exclusion Criteria**

1. Data were excluded from the analysis if a participant’s open-ended response...:
  - a) Was limited to non-alphabetic characters (e.g., “?”, “...”, etc.),
  - b) was limited to “N/A”,
  - c) or was deemed by independent coders as incoherent and/or inappropriate (e.g., “Good”, “muy bueno”, “5”, etc.)
  
2. Data were excluded from the analysis if a participant’s self-reported age was below 18 years (except in the case of mature minors – e.g., a 17-year-old undergraduate student)