The Impact of Social Media Exposure on Eyewitness Identification

by

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Abstract

After observing a crime, eyewitnesses may conduct their own investigation on social media to search for the perpetrator. The current study examined exposure to an innocent suspect on social media and its effect on performance at a formal lineup. Participants observed a staged crime then were randomly assigned to view social media profiles of innocent people, a mugbook of innocent people, or no photos of innocent people (control). Following a short delay, participants completed a lineup procedure. The results show that social media exposure increased innocent suspect identifications at the lineup compared to mugbook exposure and controls. Correct identification of the perpetrator was unaffected by social media and mugbook exposure. Ultimately, the legal system should exercise caution when eyewitnesses who conduct their own investigations on social media are permitted to complete a formal identification procedure. Viewing an innocent suspect on social media can increase the chance of a mistaken identification.

Keywords: Eyewitness; Mugbook; Social media; Repeated identifications; Misinformation

Dedication

This thesis is dedicated to my parents, Darren and Audrey, and to my siblings, Jordan, Loren, Evan, and Stephanie.

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Chapter 1.

Introduction

1.1. Social Media in Police Investigations

Social media poses a problem for police investigations, because eyewitnesses in search of a perpetrator can conduct their own investigations. Witnesses may search social media for names overheard at a crime scene, or search through social media "friends" of known people at the crime scene, hoping that the perpetrator will be a mutual connection (Wells et al., 2020). These do-it-yourself investigations may increase the risk of bias because they are not under the purview of police and lack the safeguards to prevent suggestion at supervised identification procedures (Davis & Loftus, 2012; Federal/Provincial/Territorial Heads of Prosecutions Subcommittee on the Prevention of Wrongful Convictions, 2018). Davis and Loftus (2012) note that social media can be especially suggestive when witnesses receive photos and profiles from others, because they may expect that the photo will be of the perpetrator.

Numerous cases in Canada have involved eyewitnesses using social media to identify suspects (Federal/Provincial/Territorial Heads of Prosecutions Subcommittee on the Prevention of Wrongful Convictions, 2018). *R. v. Mohamed* (2014) involved a street shooting in Alberta, after which an eyewitness was shown Facebook images of a potential suspect by a friend. The witness identified Mohamed from these photos and again at an in-court identification at trial. Using the Facebook identification, in-court identification, and security footage from the scene, Mohamed was convicted and later denied appeal. A second case, *R. v. Assefa* (2018) involved a physical assault at a party. The victim found photos of partygoers using Instagram, and subsequently used these photos to identify Assefa. The police found a photo of Assefa in the police database, and the victim identified the singular photo presented by the police as Assefa. The victim then further implicated Assefa at an in-court identification. Assefa was convicted at trial based on this evidence.

Not all cases involving social media result in convictions. In *R. v. Pearce* (2017), a young female victim had close contact with the perpetrator. After describing this perpetrator to her father, she later overheard her father say that the perpetrator was

Richard Pearce. The victim then used Facebook to search Richard Pearce and identified him as the perpetrator. The trial judge determined that the evidence was unreliable based on the suggestive circumstances of the identification, and Pearce was acquitted.

These cases show how social media has been used to make identifications in Canada, with differing outcomes at trial. In *Pearce* (2017) the suggestiveness of the Facebook identification was evident and resulted in the trial judge's decision to acquit. The victim was likely influenced by her father's comments and the likely expectation that Pearce would be the perpetrator. *Mohamed* (2014) and *Assefa* (2018) both involved in-court identifications following a previous identification from social media. Despite the absence of any formal lineup identification procedure in either case, the potential for bias did not impeach the credibility of the eyewitness identifications.

Identification at a formal lineup procedure with known-innocent fillers is beneficial, because the risk of a mistaken innocent suspect identification decreases with known-innocent fillers in a lineup, compared to lineups in which all members are suspects (Wells & Turtle, 1986). As a formal lineup procedure involving known-innocent fillers was not conducted in *Mohamed* (2014), or *Assefa* (2018), there is an increased risk that an innocent suspect was wrongfully convicted. It is possible that the social media profiles depicted the true perpetrators. However, if they did not, exposure to an innocent person on social media would constitute a form of misinformation and could have altered their memory of the perpetrator (Eisen et al., 2020). Ultimately, the reliability of identifications in the *Mohamed* and *Assefa* cases is questionable, as neither witness was tested using a procedure capable of detecting errors, and the witnesses may have been tainted by the social media exposure.

Research on social media exposure and its impact on subsequent identification decisions is lacking. However, as social media exposure is a type of post-event information, the effects of social media exposure may resemble those in other well established post-event information paradigms. In numerous studies, misinformation and mugshot exposure paradigms have been used to show the negative effects of post-event information on memory (Deffenbacher et al., 2006; Loftus, 1979; Roediger et al., 2001).

1.2. The Misinformation Paradigm

The misinformation effect refers to biasing influences of post-event information on memory for an event. It occurs when information learned after an event is incorporated into memory for the event (Loftus, 1975; Schreiber & Sergent, 1998). The experimental paradigm for studying misinformation effects involves three stages: (1) witnesses encode to-be-remembered information, often in the form of an event; (2) witnesses receive false post-event information; and (3) witnesses are tested on their memory for the original event. The misinformation effect has been found for numerous types of post-event information, including verbal and written descriptions, leading questions, co-witness discussion, and exposure to intervening images (Deffenbacher et al., 2006; Loftus, 1975; Loftus & Greene, 1980; Roediger et al., 2001; Schreiber & Sergent, 1998). The misinformation is essentially a form of retroactive interference, in which new information blocks the original information (McGeoch, 1932). In the social media context, viewing profiles of people who are not the perpetrator can be a form of misinformation. When witnesses view profiles, they may later infer that a person was the perpetrator, when in fact this person was seen in social media searches.

Social media misinformation may also involve co-witness discussion. Witnesses may receive profiles of potential suspects and then discuss those profiles with others, opening the door to issues of memory conformity (Davis & Loftus, 2012). Memory conformity occurs when witnesses discuss details of an event, ultimately incorporating misinformation presented by other witnesses into their own memory for the event (Gabbert et al., 2003; Paterson & Kemp, 2006; Roediger et al., 2001). Co-witness discussion of misinformation has also been shown to decrease identification accuracy on subsequent lineups (Eisen et al., 2017). On social media, discussion that can lead to memory conformity is hard to control. Witnesses may discuss an event with others online and discuss the profiles of potential suspects with others, ultimately accepting misinformation about the perpetrator and event. Additionally, courts expect that evidence from multiple witnesses is independent of each other (Federal/Provincial/Territorial Heads of Prosecutions Subcommittee on the Prevention of Wrongful Convictions, 2018). The opportunity for witnesses to collaborate on social media harms police investigations by allowing memory conformity and compromising expectations that evidence is independent.

1.3. The Mugshot Exposure Paradigm

In criminal cases, witnesses may be asked to view mugbooks containing large numbers of mugshots, often of people arrested for similar crimes. The purpose of mugbook searches is to assist police in identifying potential suspects (McAllister, 2007). In the mugshot exposure experimental paradigm, participants view images of a suspect or multiple suspects between the time that they witnessed an event and the formal lineup procedure (Brown et al., 1977). Comparable methodologies are used in mugshot exposure and misinformation studies. Mugshot exposure studies involve witnessing a crime, exposure to mugshots in which the perpetrator is typically absent, then making an identification from a lineup that contains a member previously seen in the mugbook (Dysart et al., 2001). This resembles the three stages in the misinformation paradigm, with mugshots being the post-event misinformation and lineup identifications as the test of misinformation acceptance.

Comparisons between mugbooks and social media can be made as well. Both involve exposure to post-event information by searching through images to identify suspects in an investigation. Davis and Loftus (2012) point out the similarities between these searches, noting that social media is essentially a limitless mugbook. Thus, exposure to images of potential suspects on social media may have similar effects as exposure to mugshots.

Identifying potential suspects from mugbooks may help guide an investigation, but mugshot exposure can contaminate subsequent identifications from lineups, particularly if the person identified in the mugbook appears in the lineup. When lineups contain a prior mugshot choice and the real perpetrator is absent, mistaken identifications of the prior mugshot choice increase compared with no mugshot control groups (Dysart et al., 2001; Memon et al., 2002). When the perpetrator is also present in the lineup, witnesses again make more mistaken identifications of the prior mugshot choice, and they also make fewer correct identifications of the perpetrator (Goodsell et al., 2009; Gorenstein & Ellsworth, 1980). Thus, post-event exposure to mugshots decreases identification accuracy when the option to choose post-event information is present.

McAllister (2007) distinguishes between two types of mugshot effects. A

commitment effect is when participants identify the mugshot (e.g., from a mugbook) and then repeat the identification at a lineup. A familiarity effect is when the mere exposure to a mugshot increases mistaken identification of the person in the mugshot. To separate familiarity from commitment, familiarity effects are often investigated by examining lineup choices made by participants who did not choose from the mugbook, or participants whose mugbook choice was different than the person from the mugbook who is repeated at the lineup. If the lineup decisions of these participants are unaffected by the mugbook exposure, it is concluded that familiarity did not affect the lineup choice.

Empirical studies suggest an innocent person is more likely to be identified at a lineup if they were previously identified at a mugbook (commitment effect) than if they are just familiar from the mugbook viewing (e.g., Brigham & Cairns, 1988; Dysart et al., 2001; Memon et al., 2002). Dysart et al. (2001) and Memon et al. (2002) both concluded that mugshot familiarity had no effect on lineup identification for participants who did not choose from the mugbook, as these participants performed similarly to those who did not view the mugbook. However, Memon et al. (2002) found some evidence for familiarity when prior mugbook choices were absent from the lineup. Familiarity was evident for participants who chose from the mugbook and then viewed a lineup that did not contain their mugbook choice. These participants were more likely than controls and mugshot nonchoosers to make mistaken identifications of an innocent suspect who was previously viewed in the mugbook, even though they were not their original mugbook choice.

Contrary to the mixed familiarity effects, commitment effects have been robust (Brigham & Cairns, 1988). To examine the extent that commitment influences subsequent choices, Brigham and Cairns (1988) examined whether making public or private choices from a mugbook would influence commitment to a foil. Public choice participants wrote down their mugshot choice and handed it to the experimenter, whereas private choice participants threw the card with their decision in the garbage. Brigham and Cairns found that participants in both the public and private choice conditions stayed committed to their previous mugshot choices, even when the real perpetrator was present in lineups, resulting in increased mistaken identifications and decreased correct identifications. Brigham and Cairns suggested that the act of making a decision from a mugbook, rather than making the decision known, may contribute to commitment. This has implications for social media. Searching for potential suspects

may bias identifications if a witness sees someone believed to be the perpetrator on social media, even if that search result is not shared.

Few studies have examined what happens when the perpetrator is present in the lineup, but prior mugshot choices are not. Two studies from Goodsell et al. (2009, 2015) differed in respect to identifications when prior mugshot choices were excluded from a perpetrator-present lineup but a previously seen familiar foil that was not selected from the mugbook was included. Both studies found low rates of correct identifications following mugshot exposure. However, Goodsell et al. (2009) found that participants were likely to incorrectly reject the lineup, whereas Goodsell et al. (2015) found that participants opted to either reject the lineup or pick the previously seen familiar foil.

Goodsell et al. (2009, 2015) provided participants with the opportunity to select a familiar foil that was viewed in the mugbook but not previously chosen. Misinformation studies show that accuracy can remain unaffected when participants do not have the option to select misinformation on a final memory test. Thus, accuracy may be unaffected when no previously seen foils are included. McCloskey and Zaragoza (1985) analyzed misinformation acceptance using two types of memory tests. The standard test allowed participants to choose between the original item and the misinformation item, whereas the modified test allowed participants to choose between the original item and a novel item. McCloskey and Zaragoza found evidence for misinformation acceptance, in that participants tended to select the misinformation over the original item on the standard test. However, when the researchers removed the misinformation option from the modified test, participants selected the original item at the same rate as participants not exposed to misinformation. McCloskey and Zaragoza's finding suggests that misinformation does not replace memory for the original item. Otherwise, participants would not be inclined to select the original item when the misinformation is absent. Therefore, in lineups where the only familiar option at a lineup is the perpetrator, participants with a good memory should similarly be inclined to select the perpetrator.

Viewing mugshots is not always detrimental to lineup accuracy. When Lindsay et al. (1994) included the perpetrator in the mugbook, mistaken identifications at a subsequent perpetrator-absent lineup decreased compared to control participants. Participants who viewed perpetrator-present lineups were likely to correctly identify the perpetrator, while correct rejections were common in perpetrator-absent lineups. Brown

et al. (1977) reported similar results. More participants correctly identified the perpetrator from a lineup when the perpetrator had been in the mugbook compared to when the perpetrator was absent from the mugbook. Thus, social media may not always have a negative effect on identifications. When the perpetrator is present on social media, accuracy in lineup rejections has been shown to increase compared to controls with no social media exposure (Havard et al., 2021).

1.4. Showups

Showups are another type of post-event information known to affect eyewitnesses. Showups involve presenting an eyewitness with a single suspect and having them decide whether it is the perpetrator (Valentine et al., 2012). This process may involve presenting an image, but is often done as a live presentation when a suspect is apprehended in the vicinity of the crime shortly after it happened. When witnesses view a social media profile of a potential suspect, viewing the singular profile is similar to viewing a showup as both involve the presentation of a single suspect (Eisen et al., 2020).

Like mugshot exposure effects, exposure to showups prior to a lineup decreases lineup accuracy, particularly when showups are perpetrator absent. Viewing a perpetrator-absent showup decreases correct identifications and increases innocent suspect identifications at a subsequent lineup, compared to seeing a perpetrator-present showup or no showup (Valentine et al., 2012; Lawson & Dysart, 2014).

Valentine et al. (2012) and Lawson and Dysart (2014) presented the same suspect at both the showup and the subsequent lineup (either the perpetrator *or* the innocent suspect). Haw et al. (2007) instead showed participants an innocent suspect at the showup and had them complete a lineup that contained both the perpetrator *and* the innocent suspect from the showup. Haw and colleagues found that exposure to the showup decreased correct identifications compared to controls. Commitment was also evident, as participants who mistakenly identified an innocent suspect at the showup often repeated that choice at the lineup.

In sum, similar effects have been found between showup exposure and mugshot exposure. Mistaken identifications increase when initial exposure is perpetrator absent

(Haw et al., 2007; Valentine et al., 2012; Memon et al., 2002; Goodsell et al., 2009), and correct identifications increase when initial exposure is perpetrator present (Brown et al., 1977; Lindsay et al., 1994). Thus, seeing one potential suspect has some resemblance to exposure to a series of potential suspects in a mugbook.

1.5. Social Media Exposure

Processes involved in making lineup identifications after social media exposure may resemble those found for mugbook and showup exposure. Witnesses are exposed to a potential suspect, and afterwards they may encounter that suspect again at the formal lineup. Thus, theories from the mugbook and showup exposure literatures may also apply to social media exposure.

One theory proposed to explain mugbook and showup effects is that witnesses are making a source monitoring error. Source monitoring errors are prevalent in misinformation designs, in which it is inferred that false information is familiar due to its presence in the original event (Johnson et al., 1993). In terms of social media, viewing profiles of people who are not the perpetrator can be a form of misinformation. When witnesses view profiles, they may later infer that a person was the perpetrator, when in reality this person was seen in social media searches.

Identity blending has also been proposed to underlie repeated identification effects. According to this theory, witnesses combine the perpetrator and a previously seen innocent suspect in memory, concluding they were the same person (Goodsell et al., 2015; Ross et al., 1994). Goodsell et al. (2015) found evidence of both identity blending and source monitoring errors by asking participants to rate if lineup choices were familiar from the crime and/or the mugbook task. Participants who displayed commitment tended to make identity blending errors, in which they chose their prior mugshot choice again at the lineup, and rated this choice as being familiar from both the crime and the mugshots. Source monitoring errors were also evident, particularly when the lineup did not contain a prior choice. In this circumstance, participants tended to misattribute familiarity of the perpetrator to the mugbook rather than the crime.

There has been some evidence of identity blending and source monitoring errors in social media exposure studies. Kleider-Offutt et al. (2021) found that most participants

who mistakenly identified an innocent suspect who had previously been seen on social media rated the suspect as being familiar from only the crime (i.e., source monitoring error), or from both the crime and social media (i.e., identity blending).

Social media images may be viewed under conditions known to increase mistaken identifications, making them potentially even more dangerous than other types of pre-lineup exposures (Davis & Loftus, 2012). A suspect is more likely to be identified if they stand out in a lineup (Luus & Wells, 1991; Malpass et al., 2007). Lindsay and Wells (1980) showed this using lineups containing fillers of low or high similarity to the perpetrator. In perpetrator-absent lineups the perpetrator was replaced with a highly similar innocent suspect. Compared to high similarity lineups, more innocent suspect misidentifications were made in low similarity perpetrator-absent lineups. Additionally, more correct identifications were made in low similarity perpetrator-present lineups, showing the biasing effect that having one plausible choice has on identifications. Thus, if one person stands out in a social media search, witnesses may be more likely to identify them as the perpetrator, regardless of innocence.

Additionally, having mutual connections on social media may cause a profile to stand out against others, and may be interpreted as a signal that the person in the profile is the perpetrator. If a friend of the witness thinks they know the perpetrator, then having mutual social media connections may serve as an indicator that the witness has located the correct perpetrator. Furthermore, if the witness knows a person who was present at the crime scene and this person is “friends” on social media with someone who matches the description of the perpetrator, the witness may interpret the friend status as a signal that the person who matches the description is indeed the perpetrator.

Identification decisions made by witnesses in *Mohamed* (2014) and *Assefa* (2018) may have been influenced by some combination of the suspect standing out in social media exposure, bias from friends, and commitment effects. It is possible that (a) the accused stood out compared to others in social media images, increasing the chances of them being picked as the perpetrator, then (b) witnesses stayed committed to those choices at subsequent identifications. In *Mohamed* the witness’s attention to the suspect’s social media profile was initiated by information they received from a friend. In *Assefa* the accused wore a scarf in social media images similar to a scarf worn by the perpetrator, and was present in social media images with a person that they were seen

attending the party with.

Havard et al. (2021) and Elphick et al. (2021) conducted experiments on social media exposure and subsequent lineup identification. In both studies, participants viewed a crime, then viewed a mock social media page for the event at which the crime occurred. The main difference between the studies was the length of the delay between viewing the crime and social media; Havard et al. used a 1—2 day delay, whereas Elphick et al. shortened the delay to 20 minutes. In both studies participants were able to view profiles of individuals who attended the event on the mock social media page. Among these profiles, either the perpetrator or an innocent suspect was present. Finally, participants completed lineups that varied in perpetrator presence, with perpetrator-absent lineups containing the innocent suspect from social media.

Havard et al. (2021) only found differences in identifications from perpetrator-absent lineups. In that study, exposure to the perpetrator on social media led to increased rates of correct rejections compared to control participants and participants who viewed an innocent suspect on social media. Control participants and participants who viewed an innocent suspect did not differ. Conversely, Elphick et al. (2021) only found differences in perpetrator-present lineups. After exposure to an innocent suspect on social media, correct identifications decreased, while foil identifications and incorrect rejections increased compared to control participants and participants who viewed the perpetrator on social media. Control participants and participants who viewed the perpetrator did not differ in terms of correct identifications.

Havard et al. (2021) found similar rates of correct identifications from lineups between controls and participants with post-event innocent suspect exposure when the innocent suspect was not included in perpetrator-present lineups. This lack of significant differences supports McCloskey and Zaragoza's (1985) conclusion that memory for the original item remains intact after exposure to post-event misinformation. Conversely, Elphick et al.'s findings conflict with this conclusion, as viewing the profile of an innocent person reduced correct identifications of the perpetrator even when the innocent person was absent from the lineup.

Havard et al. (2021) and Elphick et al. (2021) also found nominal increases in innocent suspect identifications from lineups after the innocent suspect was viewed on

social media, compared to participants who viewed a guilty suspect on social media and control participants; however, in both studies the increases did not to reach the threshold for statistical significance. As sample sizes were small, it is possible that given a larger sample size, differences in innocent suspect identifications from perpetrator-absent lineups would be heightened when participants viewed an innocent suspect on social media. Additionally, both Havard et al. and Elphick et al. used a single perpetrator, so it is possible that their results are specific to that perpetrator (Wells & Windschitl, 1999).

Havard et al. (2021) and Elphick et al. (2021) provide initial evidence of the effects that social media exposure may have on subsequent identifications. However, issues related to the additional biasing effects of social media, such as when perpetrator absent profiles of potential suspects are sent by friends, were not addressed.

Kleider-Offutt et al. (2021) took steps to address some additional biasing effects of social media exposure by telling participants that community members thought they knew the suspect. Participants were then shown images of the suspect in the form of a Twitter profile, in which the suspect was either the perpetrator or an innocent suspect, after which they completed a lineup containing both the perpetrator and the innocent suspect. Kleider-Offutt et al. found that participants who viewed the innocent suspect on social media were less likely to correctly identify the perpetrator from the lineup and more likely to mistakenly identify the innocent suspect than participants who viewed the perpetrator on social media. Thus, Kleider-Offutt et al. provide evidence that social media exposure impairs identification performance when its additional biasing effects are taken into account.

1.6. The Current Study

Previous research has provided initial evidence that suspect identifications are impacted following social media exposure, but no previous studies have compared social media to other types of post-event innocent suspect exposure. The current study examined whether social media exposure prior to lineups affects suspect identifications and whether features that are common to social media make it even more detrimental than mugshot exposure. Participants viewed a perpetrator-absent mugbook or social media in the form of Facebook profiles. In both the mugbook and Facebook profiles an innocent person resembled the perpetrator more than any of the other options. The

Facebook profile of the innocent suspect was designed to stand out even more than in the mugbook condition, as the social media profile reported that the innocent suspect had mutual friends with the participant.

Following a short delay, participants completed a perpetrator-absent lineup that contained the innocent suspect or a perpetrator-present lineup that did not contain the innocent suspect. It was hypothesized that mistaken identifications of the innocent suspect would be greater in the social media exposure condition than in the mugbook and control condition, and that mistaken identifications would be greater in the mugbook condition than in the control condition. For perpetrator-present lineups, it was hypothesized that correct identifications would be lower in the social media and mugbook conditions than in the control condition. No differences in correct identifications were hypothesized between the social media and mugbook conditions.

The research was pre-registered at https://aspredicted.org/ZVX_NMP. Please note there was an error in the pre-registration for the perpetrator-present hypothesis directionality. The correct hypothesis was that correct identifications would be *lower* in the social media and mugbook conditions than in the control condition.

Chapter 2.

Method

2.1. Participants

A total of 687 participants were recruited through a university participant pool and Amazon Mechanical Turk (MTurk). Twenty-five participants were removed for not passing the attention check (n = 7), reporting video problems (n = 8), or withdrawing from the study (n = 10), leaving a final sample of 662 participants: 266 university students and 396 MTurk workers. University students were awarded partial course credit. MTurk workers received $3 compensation.

The university student sample had an average age of 19.25 years (SD = 2.29) and included 187 females, 73 males, 3 non-binary participants, and 3 participants who preferred not to indicate gender. Most students identified as white (26.1%), South Asian (18.8%), or Chinese (17.8%).

MTurk workers had an average age of 39.07 years (SD = 11.49), and included 155 females, 237 males, 1 non-binary participant, and 2 participants who did not indicate gender. The majority of MTurk participants identified as white (64.1%).

For power analysis, I focused on the expected difference between the social media and mugbook exposure groups on innocent suspect identifications. With an estimated small-to-medium-sized effect (Cohen's h = 0.35), 101 participants per group were required to achieve power of .80 (Brant, n.d.).

2.2. Design

A 2 (Lineup type: perpetrator absent vs. perpetrator present) × 3 (Exposure: social media vs. mugbook vs. control) between-subjects design was used. The critical outcome variable was suspect identifications.

2.3. Materials

2.3.1. Videos

Crime videos were created for two perpetrators (both White males, aged 17-18). Multiple perpetrators were used as recommended by Wells and Windschitl (1999), who explain that having a single perpetrator may confound results, reduce construct validity, and limit generalizability. The video depicted a car robbery that lasted approximately 30 seconds, with the perpetrator's face visible for approximately 7 seconds. The perpetrator first pulls on the locked handle of the driver's side door, walks in front of the car, and then opens the unlocked car door on the passenger's side of the vehicle, takes a wallet from the glove box, then opens the door to the backseat of the car and takes a backpack.

2.3.2. Social Media Profiles

A total of 49 fake social media profiles were created. Two of the profiles depicted the innocent suspect for each perpetrator. The perpetrators were paired so that the second perpetrator served as the innocent suspect for the first perpetrator, and vice versa. The remaining 47 profiles functioned as fillers. Profiles were organized to resemble the results of a Facebook search. Fillers were not matched to the perpetrator or the innocent suspect in terms of appearance, except that fillers were always the same sex as the perpetrator. Twelve profiles were presented per page, with four pages and a total of 48 profiles per perpetrator. All profiles had the name "Mark Smith". The first profile in the Facebook search results was the innocent suspect. The innocent suspect's profile indicated participants had five mutual friends with them. The purpose of this was to lead participants to the innocent suspect, making them seem even more likely to have been the perpetrator. The remaining profiles indicated no mutual friends. Participants were able to press a profile in the search result to view the profile larger. Figure 1 shows an example of profiles in the search display and Figure 2 shows the larger profile for one of the innocent suspects.

Headshots were used to make the social media profiles and mugbook. Criteria included a neutral facial expression, street-style clothing (e.g., no suits), and a dissimilar

appearance to both the perpetrators (e.g., different skin tone, different hair colour/style, etc.). In all images only the head and shoulders were visible.

Figure 1. Social Media Search Example
Example of a profile in the social media search display for an innocent suspect. The filler profiles followed a similar format, but did not contain the mutual friends tag.

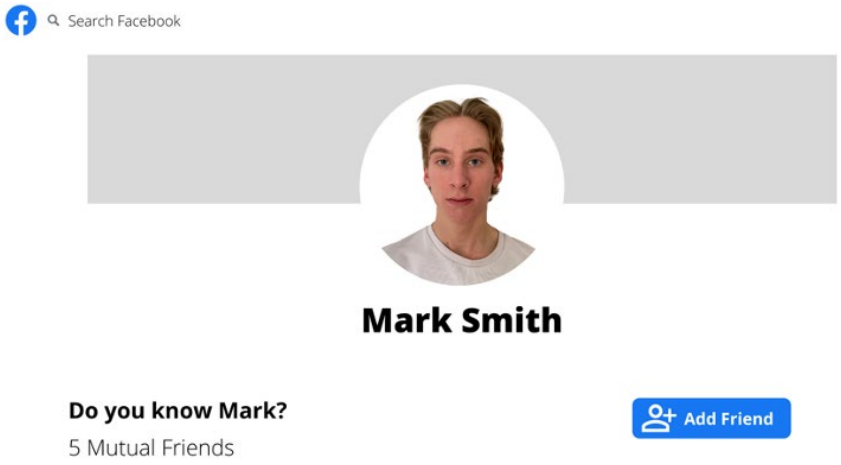

Figure 2. Social Media Larger Profile Example
Example of the larger profile for an innocent suspect that was presented when participants clicked on the individual's profile in the social media search. The filler profiles followed a similar format, but did not contain the mutual friends tag.

2.3.3. Mugbook

A mugbook was created using the same filler images as the social media profiles. Mugbooks consisted of 48 images total, with 12 images presented per page. To match the social media condition, the innocent suspect was the first image presented in the mugbook. Participants were also able to press photos in the mugbook to view them larger.

2.3.4. Lineups

The lineups comprised six simultaneously presented images in a 2×3 array. Perpetrator-present lineups consisted of the perpetrator and five foils, and perpetrator-absent lineups consisted of the innocent suspect and five foils, as shown in Table 1. The placement of the perpetrator and innocent suspect in lineups was counterbalanced across all six lineup positions.

To select lineup foils, 10 participants provided descriptions of the perpetrator. Images of people with neutral facial expressions who matched the perpetrator descriptions were then found online. A pilot study was conducted with 222 participants to test the fairness of the lineups. Participants viewed one of the two videos and then completed a 6-member perpetrator-absent lineup. The number of plausible lineup members, also known as the lineup's effective size, is represented by the statistic, *E* (Tredoux, 1998; Malpass, 1981). *E* is a widely used lineup fairness estimate that can be computed from the distribution of choices across the lineup members. It ranges from 1 (biased lineup) to 6 (completely fair lineup) for 6-member lineups. Rather than the common practice of providing a description of the perpetrator to mock-witnesses, participants were witnesses with a memory of the perpetrator. This avoids the need to generate a description and gives a more direct measure of effective size (see Quigley-McBride & Wells, 2021). Lineups for both perpetrators had *E* values between 4.6-4.7, indicating that lineups had between 4 and 5 plausible lineup members.

Table 1. Counterbalancing of Video Perpetrators, Mugshot/Social Media Photos, and Lineup Suspects

Stimulus Set	Video	Social Media/Mugbook	Perpetrator-Absent Lineup	Perpetrator-Present Lineup
1	Perpetrator A	Perpetrator B	Perpetrator B (suspect) + Fillers matched to Perpetrator B	Perpetrator A (suspect) + Fillers matched to Perpetrator A
2	Perpetrator B	Perpetrator A	Perpetrator A (suspect) + Fillers matched to Perpetrator A	Perpetrator B (suspect) + Fillers matched to Perpetrator B

2.3.5. Demographics

Participants completed a demographic questionnaire that asked about their age, gender, and ethnicity.

2.3.6. Filler Tasks

In the first filler task, participants decided whether various items (e.g., vocal pitch, clothing, facial expressions, posture, etc.) should be classified as nonverbal behaviour. Participants then completed the Nonverbal Immediacy Scale (NIS), which is a 26 item self-ranked scale that measures an individual's nonverbal behaviours (Richmond et al., 2003). The scale involves ranking how often the individual engages in different aspects of nonverbal behaviour on a scale of 1 (never) to 5 (very often). Examples of items include "I frown while talking to people" and "I use my hands and arms to gesture while talking to people".

2.4. Procedure

2.4.1. Undergraduate Students

Participants completed the study using the online survey platform, Qualtrics. The study was advertised as a nonverbal behaviour study, in which participants were under the impression that the purpose was to measure the reliability of the NIS. Participants provided consent, then viewed one of the two videos. Participants were told the video was unrelated to the nonverbal behaviour tasks. To ensure participants paid attention and watched the full video, there was an attention check at the end of the video modeled after Tupper et al. (2018): for the last seven seconds of all videos, a white circle was shown with the caption “this is a white circle, please remember this circle as you will be asked about it later”. Participants were then asked what shape was shown at the end of the video and were excluded if they answered incorrectly.

Participants were randomly assigned to one of three exposure conditions: social media exposure, mugbook exposure, or control. Following the video, participants completed the nonverbal behaviour filler tasks until seven minutes elapsed from when the video was shown. If participants completed the nonverbal behaviour tasks before seven minutes had elapsed, they completed simple math problems for the remaining time. The purpose of these tasks was to create a delay between observing the crime and viewing the social media/mugshot photos.

After seven minutes of filler tasks elapsed the true nature of the study was revealed. Participants were given the option to re-consent and continue with the study or withdraw without penalty.

Participants in the social media exposure condition were then informed that the name Mark Smith was overheard at the robbery, and that one of their friends thinks they know Mark Smith. Participants were then provided with the Facebook search results for that name. In the mugbook exposure condition participants were told that the police thought the perpetrator could be in a mugbook of people who had committed similar crimes. See Appendix A for the instructions given to participants to complete the search tasks.

All Facebook profiles and mugshots were perpetrator absent (i.e., did not contain the perpetrator). Participants were given as much time as needed and could go back and view profiles and mugshots multiple times. Participants gave their decision on the Facebook search and mugbook by indicating what position they thought the perpetrator was in or indicating that the perpetrator was absent (see Appendix A for the exact instructions). Following the completion of the Facebook and mugbook searches, another seven minutes of filler tasks commenced in which participants were told to take a break and were given a sudoku puzzle. Participants in the control group did not have any intervening search tasks and were given the second filler tasks immediately following the reveal of the study's true nature.

After the second delay participants viewed the lineup. Half the participants viewed perpetrator-absent lineups, and half viewed perpetrator-present lineups. Participants were told that the perpetrator may or may not be in the lineup, and to click on the image of the perpetrator if the perpetrator was present or to indicate that the perpetrator was absent by selecting "not present". Following a decision they were asked to rate their confidence on a 11 point scale, ranging from 0% to 100% in 10-point increments. Finally, participants completed demographic information, and were debriefed and thanked for their participation.

2.4.2. MTurk Participants

I was unable to complete data collection using the university participant pool, with 400 participants below the target sample at the end of the year, so the remaining participants were recruited from Mturk. I had never used MTurk before and wanted to ensure that there were no problems with the study's set up, so prior to launching the full study on Mturk a pilot study (N = 58) was conducted. In this pilot test, which used the same procedure as with the university sample, overall hit rates were at chance levels (see Appendix B for pilot study results). Accordingly, a second pilot test (N = 20) was conducted in which the two filler tasks were decreased from 7 minutes to 3 minutes. This increased hit rates above chance. As such, to avoid a floor effect, the two filler tasks were decreased from 7 minutes to 3 minutes for the MTurk sample. This pilot study data was considered separate from the main study, so was not included in the final MTurk sample for the main study. Other than filler task length, the procedure for MTurk workers did not differ from that of undergraduate students.

Chapter 3.

Results

3.1. Social Media and Mugbook Searches

Participants who viewed the innocent suspect on social media (*n* = 207) mistakenly identified the innocent suspect 19.3% of the time from the Facebook profiles, identified a filler 29.0% of the time, and made no identification 45.9% of the time (see Appendix C for the distribution of filler choices). The remaining 5.8% made decisions that were unclear on who the participant was identifying (e.g, “on the first page”, “I think so, I am not confident”). Participants in the mugbook condition (*n* = 222) made an innocent suspect identification from the mugbook 9.5% of the time, mistakenly identified another filler 33.8% of the time, and made no identification 50% of the time. Unclear decisions accounted for 6.3% of decisions in the mugbook, and one participant (0.5%) neglected to indicate a decision. The difference in identifications of the innocent suspect on Facebook and in the mugbook was significant, $z = 2.89$, $p = .002$, $OR = 2.29$, 95% CI [1.30, 4.04]. Table 2 shows a breakdown of how many participants who identified an innocent suspect on social media or in the mugbook were randomly assigned to view perpetrator present and absent lineups.

Table 2. Frequency of Social Media and Mugbook Innocent Suspect Identifications By Lineup Condition

Exposure Condition	Perpetrator-Present Lineup	Perpetrator-Absent Lineup
Social Media	16	24
Mugbook	16	5

3.2. Lineup Identifications

When the perpetrator was present in the lineup, a 3 (exposure: control vs. social media vs. mugbook) × 3 (decision: suspect vs. filler vs. no identification) loglinear analysis revealed no effect of exposure on lineup decisions, $\chi^2(4, N = 332) = 3.38$, $p = .496$, $V = 0.07$. Table 3 shows the percentage of responses in each category for both perpetrator-present and perpetrator-absent lineups.

When the perpetrator was absent from the lineup, a 3 (exposure: control vs. social media vs. mugbook) × 3 (decision: suspect vs. filler vs. no identification) loglinear analysis revealed an effect of exposure on lineup decisions, $\chi^2(4, N = 330) = 25.29$, $p < .001$, $V = 0.20$. Specifically, there was an effect of exposure condition on innocent suspect identifications, as follow-up pairwise analyses showed that mistaken identifications of the innocent suspect were higher after the social media exposure than after mugbook exposure, $z = 3.80$, $p < .001$, $OR = 5.25$, 95% CI [2.05, 13.45], and no exposure, $z = 3.85$, $p < .001$, $OR = 5.45$, 95% CI [2.13, 13.95]. The innocent suspect identification rate did not significantly differ across mugbook and control conditions, $z = 0.06$, $p = .475$, $OR = 1.04$, 95% CI [0.32, 3.32]. The only other significant difference was for filler identifications: participants in the control group made more filler identifications than participants who viewed social media, $z = 2.27$, $p = .012$, $OR = 1.99$, 95% CI [1.08, 3.65].

To ensure that the different filler task times between undergraduate students and MTurk participants did not alter results, differences in identifications for the two participants pools were tested. For perpetrator-present lineups, MTurk participants were worse at correctly identifying the perpetrator than university students were (25% vs. 42% respectively, $\chi^2(2, N = 332) = 11.47$, $p = .003$). However, the pattern of results for perpetrator-present lineups remained the same for both participant pools. There were no differences in identification decisions across the social media exposure, mugbook exposure, and control conditions for both university students ($\chi^2(4, N = 133) = 2.18$, $p = .703$), and MTurk participants ($\chi^2(4, N = 199) = 7.75$, $p = .101$). When the perpetrator was absent, there were no differences in identification decisions between undergraduate students and MTurk participants ($\chi^2(2, N = 330) = 0.90$, $p = .638$).

Table 3. Identification Decisions (%) from Perpetrator-Present and Perpetrator-Absent Lineups

Perpetrator	Exposure Condition	Suspect	No Identification	Filler
Present	Control	32.2 (38)	29.7 (35)	38.1 (45)
	Social Media	34.0 (35)	35.9 (37)	30.1 (31)
	Mugbook	28.8 (32)	39.6 (44)	31.5 (35)
Absent	Control	5.2 (6)	60.0 (69)	34.8 (40)
	Social Media	23.1 (24)	55.8 (58)	21.2 (22)
	Mugbook	5.4 (6)	66.7 (74)	27.9 (31)

Note. Frequencies in parentheses.

3.3. Commitment and Familiarity Effects

Perpetrator-absent lineup choices were examined to see if any commitment or familiarity effects were present. Perpetrator-present lineup arrays did not contain any members who were previously seen at the social media or mugbook search tasks, so only the perpetrator-absent lineup arrays contained a familiar person from the search task (the innocent suspect) from which to examine commitment and familiarity. Additionally, as seen in Table 4, very few participants chose the innocent suspect at the mugbook and were assigned to a target-absent lineup (n = 5), which precluded meaningful comparisons of commitment and familiarity effects for that condition. Thus, social media exposure was the focus for commitment and familiarity. Note that although identification of the innocent suspect during the social media search was more common than from the mugbook, the sample size for this subgroup of the social media condition was still relatively small (n = 24).

If participants chose the innocent suspect from social media and chose the suspect again at the perpetrator-absent lineup, it was interpreted as a commitment effect. Alternatively, if participants chose a filler or made no identification from social media and then went on to choose the previously seen innocent suspect at the lineup, it was interpreted as a familiarity effect. Given the limited sample size, filler identifications and non-identifications were combined into one category.

Commitment to the innocent suspect was evident. A large percentage of participants who chose the innocent suspect from social media chose them again at the lineup (66.7%), compared to participants who chose the suspect at the lineup after either identifying a filler or making no identification on social media (9.7%), z = 5.46, p < .001, OR = 18.57 [5.87, 58.80].

Familiarity was less evident. Only 9.7% of participants who did not choose the innocent suspect on social media went on to identify the innocent suspect at the lineup. There was no difference in the number of innocent suspect identifications between these participants and control participants not exposed to social media (5.2%), z = 1.10, p = .135, OR = 1.95 [0.63, 6.07]. Instead, the majority of participants who either identified a filler on social media or did not choose from social media opted to reject the lineup containing the previously seen innocent suspect.

Table 4. Social Media/Mugbook Choice and Perpetrator-Absent Lineup Choices (%)

Exposure Condition	Exposure Choice	Lineup Choice		
		Suspect	No Identification	Filler
Social Media	Suspect (*n* = 24)	66.7 (16)	16.7 (4)	16.7 (4)
	No Identification (*n* = 44)	11.4 (5)	77.3 (34)	11.4 (5)
	Filler (*n* = 28)	7.1 (2)	67.9 (19)	25.0 (7)
Mugbook	Suspect (*n* = 5)	40.0 (2)	40.0 (2)	20.0 (1)
	No Identification (*n* = 59)	3.4 (2)	62.7 (37)	33.9 (20)
	Filler (*n* = 41)	2.4 (1)	75.6 (31)	22.0 (9)

Note. Frequencies in parentheses.

3.4. Confidence

A confidence-accuracy characteristic (CAC) was depicted using correct identifications of the perpetrator and mistaken identifications of the innocent suspect to look at suspect identification accuracy at a given confidence level (Figure 3). The goal of CAC analysis is to show how trustworthy a witness' suspect identification is given their level of confidence (Mickes, 2015). Table 5 combines correct identifications and innocent suspect identifications to show the total number of suspect identifications made for each confidence bin. Lower levels of confidence were collapsed from 0-60% to account for the small number of low confidence identifications in the mugbook condition.

The first point for each condition in Figure 3 shows suspect identification accuracy when participants were 0-60% confident. Participants in the control and mugbook conditions exhibited some under-confidence, as their suspect identification accuracy rate was higher than the confidence rating of 0-60%, whereas participants in the social media condition were more accurate in assigning confidence that was in line with their suspect identification accuracy rate. When participants gave confidence ratings of 70-80%, the second point on the CAC shows that participants in the social media condition exhibited some overconfidence, as their suspect identification rate was lower than the assigned confidence value. Interestingly, participants in the mugbook group had a high rate of suspect ID accuracy when confidence was 70-80%. However, there were

only six innocent suspect identifications in the entire mugbook condition, and only one of these innocent suspect identifications was made with 70-80% confidence, so it is possible that the results would differ with a larger sample of innocent suspect identifications. Finally, the third point on the CAC shows that participants in both the social media and mugbook conditions with confidence ratings of 90-100% were overconfident, as their suspect identification accuracy was lower than the high confidence rating. Conversely, these high confidence suspect identifications in the control condition were 100% accurate. High confidence suspect identifications were more trustworthy for control participants than for participants exposed to social media or the mugbook.

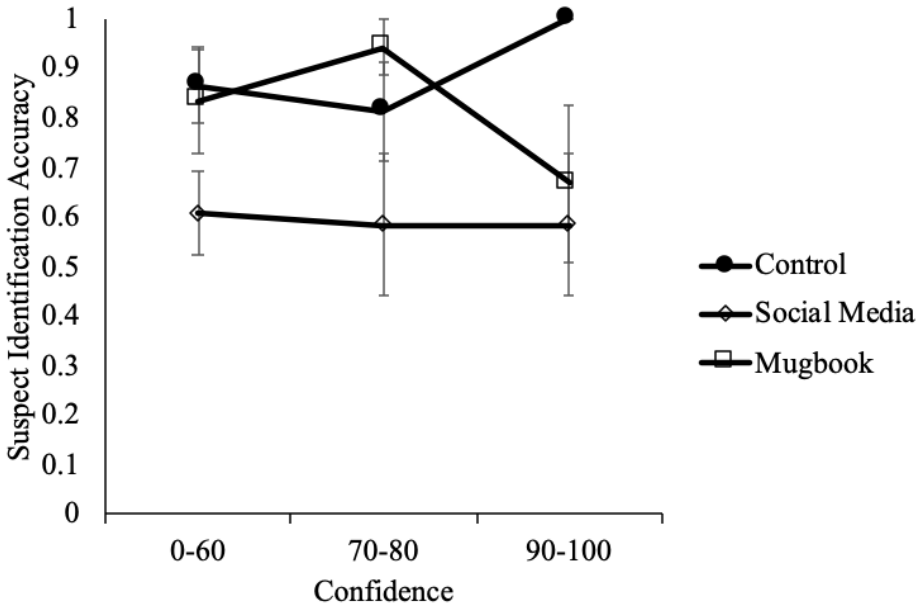

Figure 3. Confidence-Accuracy Characteristic
CAC shows how trustworthy suspect identifications are at a given confidence level.

Table 5. Total Amount of Suspect Identifications Per Confidence Bin

	Confidence (%)		
Exposure Condition	0-60	70-80	90-100
Control	22	16	6
Social Media	33	12	12
Mugbook	12	17	9

Chapter 4.

Discussion

In recent years concerns have been raised about the influence of social media on eyewitness identification (Davis & Loftus, 2012; Federal/Provincial/Territorial Heads of Prosecutions Subcommittee on the Prevention of Wrongful Convictions, 2018). In my thesis, I aimed to investigate these concerns by exposing participants to an innocent suspect on social media in the form of a Facebook search. Identifications made from social media are subject to suggestive circumstances that may bias the identification, such as expectations of seeing the culprit or the suspect standing out (Davis & Loftus, 2012). I told participants that they had a friend who knew the suspect and showed participants that they had mutual friends with an innocent suspect on Facebook. In addition, social media exposure was compared to mugbook exposure to examine if the additional suggestive elements present on social media impact eyewitness memory to a greater extent than other types of post-event exposure.

In line with hypotheses, the results from the current study suggest that exposure to an innocent suspect on social media does impact eyewitness memory, as identifications of the innocent suspect from the perpetrator-absent lineup were greater following social media exposure than for controls with no post-event exposure. More specifically, the odds of identifying the innocent suspect from the perpetrator-absent lineup following social media exposure were over five times higher than the odds of identifying the innocent suspect for controls with no post-event exposure. Additionally, there were increased rates of innocent suspect identifications following social media exposure compared to mugbook exposure. The odds of identifying the innocent suspect from the lineup were five times higher following social media exposure than following mugbook exposure, suggesting that suggestive circumstances on social media have the potential to impact lineup identifications to a greater extent than post-event exposure in the form of mugshots.

The experiment suggests that social media may not be detrimental if the perpetrator is in the lineup and all people viewed on social media are absent. It has previously been suggested that exposure to false post-event information replaces

memory for the original information (Loftus & Loftus, 1980). Accordingly, it was hypothesized that correct identifications would decrease following exposure to the innocent suspect on social media and in the mugbook. However, the results did not provide support for this. Instead, the results support theoretical claims of McCloskey and Zaragoza (1985), in that memory for the original item is still accessible after false post-event information is received. Correct identifications of the perpetrator did not differ between the social media, mugbook, and control groups, suggesting that memory for the perpetrator was still accessible following exposure to social media profiles. To provide further evidence for this claim, a Bayesian analysis was conducted. The analysis provided strong evidence for the null hypothesis, BF_{01} = 138.38, showing a lack of difference in identification decisions from perpetrator-present lineups.

The main finding that social media exposure increased identifications of an innocent suspect is consistent with previous research by Kleider-Offutt and colleagues (2021). However, Kleider-Offutt et al. (2021) found that correct identifications were also impaired following exposure to an innocent suspect. Our findings for correct identifications were instead in line with previous research by Havard et al. (2021), in which there was no effect of exposure on correct identifications. Lineup composition may offer an explanation for this discrepancy. The lineups used Kleider-Offutt and colleagues contained both the innocent suspect and the perpetrator, so identifications of the innocent suspect were made at the expense of the perpetrator. Conversely, none of the lineups used in the current study nor by Havard and colleagues contained both the innocent suspect and the perpetrator, thereby mitigating the chance of selecting the innocent suspect over the perpetrator.

Contamination of memory from social media searches has been identified as a risk factor for mistaken identification that needs to be examined (Wells et al., 2020). The results of the current study underscore the need for caution when witnesses who have viewed potential suspects on social media make subsequent identifications at lineups. Witnesses exposed to potential suspects prior to a formal lineup procedure may be biased towards an innocent suspect, increasing the risk of wrongful conviction.

Contrary to expectations, no differences in identifications of the innocent suspect were found between the control group and participants exposed to mugshots in the current study. A possible explanation is that the mugbook was set up to model the social

media condition to have more experimental control over the suggestive aspects we presented on social media, meaning the mugbook manipulation differed from that of previous research. For example, I used 12 mugshots per page while research on mugbooks tends place one to two mugshots per page (e.g., Dysart et al., 2001; Goodsell et al., 2009; Goodsell et al., 2015; Lindsay et al., 1994; etc.). Stewart and McAllister (2001) found that mugbook choosing decreased when 12 mugshots were presented per page in comparison to one mugshot presented per page, so it is possible that the greater number of mugshots per page decreased the effect of the mugshot viewing. Note, however, that although there were low rates of innocent suspect choices from the mugbook, there were increased rates of filler identifications in comparison to the social media condition, so choosing in general was unaffected compared to social media.

It is possible that the low rates of innocent suspect choices during the mugbook procedure contributed to the lack of difference between the mugbook and control conditions. Only five participants who selected the innocent suspect from the mugbook viewed a perpetrator-absent lineup. Due to this small sample, there was limited opportunity for commitment in the mugbook condition.

Lineup identifications of the innocent suspect in the control condition were also lower than what has typically been found in previous mugbook research (5% vs. around 20%; e.g., Blunt & McAllister, 2009; Lindsay et al., 1994; Memon et al., 2002). I did not measure the similarity of the perpetrator and innocent suspect, but it is possible that the designated innocent suspect was not similar enough in appearance to the perpetrator to be a plausible replacement for participants in the mugbook and control conditions. This speaks to the strength of the bias in the social media condition, as participants exposed to this innocent suspect on social media were still more likely to choose them at a subsequent lineup, even though the suspect does not appear to have been a highly plausible replacement for the perpetrator. It would be interesting for future research to manipulate the similarity of the innocent suspect and perpetrator to further examine how social media interacts with suspect plausibility.

The negative impact of mugshot exposure on eyewitness identification has been established in previous literature (e.g., Dysart et al., 2001; Goodsell et al., 2009; Gorenstein & Ellsworth, 1980; Memon et al., 2002), and the current results show that effects may be heightened when aspects of social media that further bias identification

are included. Social media introduces aspects of suggestibility that are often controlled by police in identification procedures (Eisen et al., 2020). The increased rates of innocent suspect identifications that we found at the first identification on social media in comparison to the mugbook provide initial evidence of this increased suggestibility.

Viewing profiles on social media has the same pitfall as other identification procedures at preliminary stages of the investigation. Unlike the foils in a properly-conducted lineup, who are known to be innocent and not at risk of wrongful conviction, the people who appear in social media searches could be innocent or they could be guilty. Guilt is also uncertain for people in mugbooks; however, the thesis results show how social media searches further increase the risk to innocents by biasing the witness toward likely associates. The indication of mutual friends on a social media profile seems to have been interpreted by the participants as a signal of a potential match. Other features that are common on social media, such as location data, could have similar effects.

Social aspects of social media may also bias initial identifications, if used by witnesses to discuss aspects of the case with other witnesses and friends. Discussing crimes with other witnesses can contaminate memory when misinformation is present in discussions (Eisen et al., 2017; Gabbert et al., 2003; Paterson & Kemp, 2006; Roediger et al., 2001). Memory conformity may be further amplified when witnesses are sent images of potential suspects through social media, as expectations that the image will be the perpetrator may increase innocent suspect identifications from social media (Davis & Loftus, 2012).

When viewing mugbooks these additional elements are not present. Police are often trained to limit suggestiveness in identification procedures and could have formal procedures in place to control for memory conformity, refrain from making suggestive comments, and construct mugbooks with images that do not stand out from the others (Technical Working Group for Eyewitness Evidence, 2003). Additionally, police procedures may be documented on video, which would enable suggestion to be evaluated after the fact (Eisen et al., 2020). However, as social media searches are often conducted outside of police jurisdiction, police cannot document the suggestiveness of social media searches.

The results suggest that social media's impact is the greatest when the innocent suspect is first selected on social media. Participants who identified the innocent suspect on social media were likely to stay committed to their identification by choosing the innocent suspect again at the subsequent lineup. Social media may not have as big of an effect when no identification is made, as participants who rejected the social media search had low rates of identifications of the previously seen innocent suspect at the lineup. Moreover, the odds of participants making a commitment error were 18 times higher than the odds of making a familiarity error. Given the implausible innocent suspect, the effects of familiarity may not have been strong enough to produce differences in mistaken lineup identifications of the innocent suspect. However, the current results cannot speak for what would happen given a more plausible innocent suspect. It is possible that viewing, but not selecting, an innocent suspect on social media could increase mistaken identifications at a subsequent lineup if the innocent suspect was a plausible replacement for the perpetrator.

Social media also poses an issue for confidence assessments. The thesis results back up claims by Wixted and Wells (2017) that confidence only predicts accuracy when memory is uncontaminated, as high confidence only predicted high accuracy among participants who did not receive any post-event exposure to an innocent suspect. Social media poses a problem for this because unlike showups and mugbooks, in which the contamination-causing procedure should be documented, contamination from social media is more difficult to monitor. If memory has been contaminated at social media, the current results indicate that confidence assessments at a subsequent identification procedure would not be predictive of accuracy.

The current study had a notable limitation. Participants were not able to conduct their own search on social media, and instead were given a search task designed to look like the output of a search on Facebook. Therefore, the task was not the same as searching for a perpetrator on social media in the real world. While the results provide some preliminary information on the additional bias social media has on identifications, future research should use more realistic paradigms to more fully capture the effects of social media.

Experts recommend against conducting repeated identifications with the same witness and same suspect (Wells et al., 2020; Wixted et al., 2021), and social media is

another avenue for repeated suspect identifications. If witnesses conduct their own investigation on social media prior to a formal identification procedure, warnings should be given to judges and juries about the negative impact social media exposure may have had on the identification. This is especially true when a suspect from social media is repeated at the lineup. As police cannot directly judge the suggestiveness of an identification from social media, warnings about the potential for suggestiveness on social media and its biasing effects should be explicit.

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Appendix A.

Facebook and Mugbook Search Instructions

Facebook Instructions

"At the robbery you witnessed earlier, a name was overheard. This name was 'Mark Smith'. One of your friends thinks that they know Mark Smith, so you did a Facebook search of the name in an attempt to locate the culprit. Next, you will see the Facebook output of the name Mark Smith. To view the main profile, you can press the profile in the search and the main profile will appear at the bottom of the page. You can go back and forth between pages as many times as you like. If you see the culprit, remember the position in the search result they are in as you will be asked about it later."

Mugbook Instructions

"The police think that the culprit from the robbery you saw earlier may be present in a mugbook of people who have committed similar crimes. Next, you will see a mugbook of people who have committed similar crimes in an attempt to locate the culprit. To view an image larger, press the image and it will appear larger at the bottom of the page. You can go back and forth between pages as many times as you like. If you see the culprit, remember the position in the mugbook they are in as you will be asked about it later."

Final Decision Instructions

"Was the robbery culprit present in the [Facebook profiles/mugbook]? If yes, please indicate what position in the search they were in (e.g., 'the third person on page 5). If no, please type 'not present'. If you cannot remember, you can go back and check using the back arrows."

Appendix B.

MTurk Pilot Study Results

Table B.1. Accuracy Rates in MTurk Pilot Study 1 (*N* = 58)

Condition	Correct Identification	Correct Rejection
Control (22)	.28 (3)	.64 (7)
Social Media (18)	.09 (1)	.29 (2)
Mugbook (18)	.00 (-)	.40 (4)

Note. Frequencies in parentheses.

Table B.2. Accuracy Rates in MTurk Pilot Study 2 (*N* = 20)

Condition	Correct Identification	Correct Rejection
Control (6)	.50 (1)	.50 (2)
Social Media (7)	.50 (2)	1.00 (3)
Mugbook (7)	.00 (-)	1.00 (4)

Note. Frequencies in parentheses

Appendix C.

Filler Choices From Social Media and Mugbook Searches

Table C.1. Distribution of Filler Choices From the Social Media Search

Page Number	Filler Number	Identification Frequency
1	2	1
	3	0
	4	0
	5	0
	6	0
	7	2
	8	13
	9	0
	10	4
	11	0
	12	0
2	1	2
	2	0
	3	4
	4	0
	5	2
	6	0
	7	0
	8	5
	9	2
	10	0
	11	0
	12	2
3	1	2
	2	0
	3	0
	4	0
	5	0
	6	1
	7	0
	8	1
	9	1
	10	2
	11	0

	12	0
4	1	0
	2	0
	3	7
	4	2
	5	2
	6	2
	7	0
	8	0
	9	0
	10	0
	11	0
	12	3

Table C.2. Distribution of Filler Choices From the Mugbook Search

Page Number	Filler Number	Identification Frequency
1	2	0
	3	0
	4	0
	5	0
	6	1
	7	2
	8	4
	9	0
	10	8
	11	0
	12	1
2	1	0
	2	1
	3	1
	4	0
	5	7
	6	1
	7	0
	8	7
	9	3
	10	0
	11	0
	12	5
3	1	2
	2	2
	3	1
	4	0
	5	0
	6	1
	7	0
	8	0
	9	1
	10	2
	11	0
	12	1
4	1	2
	2	0
	3	13
	4	3
	5	0
	6	3

7	0
8	1
9	2
10	0
11	0
12	0