**The Link between Art and Law: Drawing as a Tool to Improve Eyewitness Identification Memory and Reduce Wrongful Convictions**

*Findings of pilot studies conducted in London and Florence*

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# **Background**

What, if any, is the link between art and criminal law? Moreover, if there indeed is a link between these two disciplines, can we transfer insights from the world of art to that of law, adjusting the knowledge drawn from each discipline to improve legal policy? This article posits that the link between these two ostensibly very different disciplines – criminal law and art, particularly drawing – is human memory. Thus, criminal law can and will benefit if it incorporates insights drawn from scientific research related to memory in the field of art. These insights can be used to improve police investigations of crimes involving eyewitness identification around the world, increase the quality of eyewitness identifications, and reduce the rate of eyewitness misidentification, thereby reducing the number of wrongful convictions.

I posit that the link between these two ostensibly very different disciplines—criminal law and art, particularly drawing—is human memory. Thus, criminal law can and will benefit if it incorporates insights drawn from scientific research related to memory in the field of art. These insights can be used to improve police investigations of crimes involving eyewitness identification around the world, increase the quality of eyewitness identifications, and reduce the rate of eyewitness misidentification, thereby reducing the number of wrongful convictions.

The purpose of this study is to understand the link between drawing and memory in the context of eyewitness identifications. Does the physiological act of drawing a figure on paper (without the need for artistic skill) sharpen the memory? If the study’s hypothesis is confirmed, and it becomes clear that drawing does increase memory, then drawing can be used as a tool in police departments around the world to achieve more accurate results in identifying suspects (prior to the participation of eyewitnesses in identification lineups). This will reduce the rate of false eyewitness identifications and wrongful convictions.

# Eyewitness identification testimony

There is almost unanimous agreement in the legal field, particularly in the United States and Canada, that eyewitness misidentification is the most common reason for miscarriages of justice and the primary cause of wrongful convictions. As I argued in my doctoral dissertation,[[1]](#footnote-1) the current situation in Israel in which a criminal conviction can rely upon a single piece of evidence that is so unsound is not reasonable or effective in the long term.[[2]](#footnote-2)

Eyewitness identification evidence suffers from defects involving both the inadequacies of human perception and memory and the faulty functioning of the various investigatory bodies in Israel. At times, these bodies work without adequate supervision and oversight, with no binding legislative rules to guide them. It is not surprising, therefore, that this situation leads to an unacceptable number of cases where, following a criminal conviction, a defendant is later proven innocent through post-conviction DNA testing. Consequently, it is vital to embark on a comprehensive reform of Israeli law relating to criminal convictions based on a single piece of eyewitness identification evidence.[[3]](#footnote-3) A model I proposed for structuring a new approach to eyewitness identification evidence, including an amendment to the law and the adoption of a requirement for an evidentiary supplement, has been included in a draft Israeli law, “Conducting Lineups, 2016.” This draft law provides a comprehensive legislative enactment regulating all the various aspects of police lineups in criminal law. It applies four main approaches: (1) comparing the underlying legal and psychological scientific presumptions regarding eyewitness identification evidence; (2) requiring “something in addition” to eyewitness identification in Israeli law; (3) the case law doctrine of inadmissibility for illegally obtained evidence, established in *Yissacharov vs. Chief Military Prosecutor*;[[4]](#footnote-4) and (4) applying English law (English legislation, secondary legislation, and case law related to identification evidence).

Prior to proposing the above model, I addressed the multi-faceted difficulty inherent in the interface between Israeli law and eyewitness identification evidence.[[5]](#footnote-5) This difficulty stems, first and foremost, from the inherently problematic nature of eyewitness identification evidence. Reasons for this include problems in evaluating eyewitness identification reliability, its susceptibility to various biases liable to influence eyewitnesses and result in mistaken identifications, and the significant risk of wrongful convictions arising from such problematic evidence. However, Israeli case law has not yet required the presentation of supplementary evidence as a condition for obtaining a conviction based on a single instance of eyewitness identification.

Conclusive proof of the considerable risk involved in convicting a defendant on the basis of a single piece of eyewitness identification evidence has been provided by the Innocence Project in the United States,[[6]](#footnote-6) which is committed to helping free prisoners who have been wrongfully convicted.[[7]](#footnote-7) According to the Innocence Project, 76% of wrongful convictions—cases in which convictions were later overturned through the work of the Innocence Project following post-conviction DNA testing—were based (at least in part) on mistaken frontal identification by eyewitnesses or victims. Such misidentifications sometimes resulted from the inherent biases and weaknesses of human memory, and sometimes from defects in how the identification process was conducted by the investigatory body.[[8]](#footnote-8)

Israeli law does not sufficiently recognize the problematic and complex characteristics of eyewitness identification. It is therefore insufficiently equipped to grant defendants appropriate protection from wrongful conviction. For example, to date, both the Israeli judiciary and legislature have failed to understand the anomalies of eyewitness identification evidence, such as its one-time nature. Usually, the investigatory body has only one opportunity to collect such evidence, through an identification procedure (generally, it is not possible to conduct two lineups for the same eyewitness due to the biases involved). It is difficult, indeed almost impossible, for the defense to refute such evidence post hoc. Therefore, scrupulousness with respect to the rules intended to ensure the propriety of police lineups is of paramount importance. However, because the Israeli courts and legislature have not recognized that eyewitness identification is a singular and one-time piece of evidence, there are no binding rules in the legislation and regulations regarding how it is to be obtained. Nor is there any well-thought-out and comprehensive doctrine of eyewitness identification.

The Israel Police has made an effort to formulate guidelines for police lineups. These guidelines are incorporated into the internal guidelines of the Israel Police Investigations and Intelligence Branch. However, they lack normative binding force, and if violated, do not give rise to any sanction of a punitive or evidentiary nature. Many are drafted solely as recommendations. As with case law, analysis of these internal guidelines shows that some are inconsistent with research on human memory and cognitive psychology., and at times even clearly contradict it.[[9]](#footnote-9) This lack of a well-regulated body of law in Israel with respect to eyewitness identification evidence, including the absence of clear rules outlined in binding legislation, has a clear impact at all levels. Moreover, an examination of the existing rules and guidelines surrounding eyewitness identifications in Israel demonstrates that they are often unable to provide a defendant with appropriate protection against wrongful conviction. Furthermore, Israeli case law has yet to set out a clear and well-regulated evidentiary ranking of various kinds of police lineup. This is particularly concerning in view of the findings from many scientific studies that demonstrate different evidentiary value for different types of police lineups.[[10]](#footnote-10)

In recent years, moderate yet significant changes have taken place in Israeli law relating to eyewitness identification evidence. In June 2018, Israel’s Minister of Justice appointed a State Commission of Inquiry chaired by (retired) Supreme Court Justice Yoram Danziger to examine and correct wrongful convictions.[[11]](#footnote-11) The Commission (referred to as the “Danziger Commission” in Israel) focused on failures concerning eyewitness identification evidence as its first area of inquiry. On September 2, 2019, the Danziger Commission published its interim report,[[12]](#footnote-12) incorporating most of the suggestions from my testimony regarding necessary changes in police investigative work and internal procedures.[[13]](#footnote-13) It concluded that eyewitness identification evidence should be regarded with extreme caution and granted little weight. The Danziger Commission further concluded that changes should be made in all aspects of the treatment of eyewitness identification evidence. It based its conclusions on, among other things, insights from Dan Simon’s seminal book *In Doubt: The Psychology of the Criminal Justice Process*[[14]](#footnote-15) and from my (2016) doctoral dissertation, and the dramatic data presented in the study I conductedas part of the Innocence Project in the United States. The Danziger Commission found that investigatory bodies should be instructed to give utmost consideration to extra-systemic variables beyond their control. In particular, their recommendations related to how investigators can often be influenced by biases and mistaken conceptions with regard to eyewitness identification evidence. In particular, these biases related to decisions regarding the type of police lineup used, the manner in which such lineups were conducted, and the behavior of those conducting the lineup**.**

Among the variables to which I have referred in my research that could potentially reduce the evidentiary value of eyewitness identification evidence are: the criminal incident itself; the characteristics of the eyewitness; the length of exposure of the eyewitness to the incident; the distance between the eyewitness and the suspect; the level of lighting during the event; cultural-social characteristics; and the age of the eyewitness. The Danziger Commission determined that investigatory bodies should be instructed to give utmost consideration to the systemic variables within their own control, to which I referred in my research. These variables, which could potentially reduce the evidentiary value of eyewitness identification evidence include: the type of police identification lineup that the investigatory unit uses; the awareness of the police officer in charge of conducting the lineup regarding the identity of the suspect and his/her placement in the lineup; whether the police officer in charge of the lineup has given instructions or warnings to the eyewitness prior to and during the lineup; the significance of feedback given to the eyewitness prior, during, or after the lineup; the number of people, suspects, and eyewitnesses taking part in the lineup; documentation of the lineup by the investigatory body; and the level of confidence the eyewitness expresses and how it is documented by the investigatory body.

The Commission recommended, among other measures: conducting lineups as soon as possible after the criminal incident under investigation, when details regarding both the incident and the suspect (particularly his or her facial features) remain fresh in the memory of the eyewitness, and requiring the investigatory body to include these systemic variables in its report of the lineup. One of the Commission’s significant recommendations in this context is that courts should not rely solely on a single piece of eyewitness identification evidence obtained by an eyewitness review of a police photograph album.

Thus, in recent years, Israeli criminal law has come to recognize that human memory can prove deceptive, prone as it is to biases and failures and that it is therefore difficult to trust eyewitness memory or base convictions on eyewitness identification evidence alone. That this recognition has penetrated Israeli law can be seen in the Danziger Commission’s recommendations, in my doctoral dissertation[[15]](#footnote-19) and book,[[16]](#footnote-20) and in *Jaber Abu Rakik v. State of Israel,*[[17]](#footnote-21)all of which call for changes in how police lineups are conducted. Both also suggest that the law be amended to require that convictions are based on a model involving evidentiary additions indicating the outcomes of different types of police identification lineups. These changes are needed to prevent, or at least reduce, the risk of wrongful convictions.

# Drawing as a memory aide

The creation of a drawing may be a suitable method for “externalizing mental representations in graphical form.”[[18]](#footnote-22) Drawing can encourage visual analysis and help establish concentration. In a 2015 free recall study, Wammes et al. showed that drawing an image of a word’s meaning rather than writing the word itself produced better recall among adults. They suggested that the mechanism driving this effect is the integration of a combination of memory codes when drawing: elaboration, visual imagery, motor action, and picture memory.[[19]](#footnote-23) Drawing is also known to support a range of representational goals ranging from observational rendering to the production of highly schematic diagrams to support abstract reasoning,[[20]](#footnote-24) and can be described as a means through which thought can be made tangible. In a study of both young people and older adults, Meade et al. showed that drawing can lead to better memory recall compared to other study techniques, including writing because it incorporates multiple ways of representing the information: visual, spatial, verbal, semantic, and motoric.[[21]](#footnote-25)

Based on these findings, we hypothesize that, when used as a tool in eyewitness identification, drawing could be used to enhance memory and recall. In a 2018 pilot study at CSM examining whether drawing as an innate human ability can be used to focus memory and improve recall, Michelle Salamon made important findings regarding the links between figure drawing and memory improvement. Salamon showed that the motor actions involved in drawing improved the ability of participants to retrieve and clarify details of a visual experience stored in their memories (including long-term memory). Salamon concluded that drawing plays a valuable role in capturing and refining visual experience, rendering it concrete and substantive. [[22]](#footnote-27)

 Further, a 2019 United Kingdom Parliamentary research briefing noted that vulnerable witnesses, for example, children with autism, older adults, or people with neurodiversity, may find standard procedures for gathering witness statements intimidating. The briefing advises adaptations to mitigate this, such as allowing witnesses to draw events as well as or instead of describing them during investigative interviews, to help reduce memory contamination.[[23]](#footnote-28)

# Aims

As noted above, this study aims to gain insights into the connection, if any, between drawing and memory. In addition, in view of the need for a comprehensive reform of Israeli law concerning eyewitness identification evidence, and drawing on research on how human memory can be improved and refined through drawing, we have undertaken a collaboration with the UK’s Drawing Lab to develop drawing into a tool that can be used for a social purpose. This collaboration enables an interdisciplinary initiative between criminal law and art to investigate whether drawing can be used as a tool to enhance the recall abilities of eyewitnesses, to help address the problem of eyewitness misidentification and wrongful convictions.

To pursue these aims, we conducted two small pilot studies first conducted in London, with the Drawing Lab Project at Central St Martins University of the Arts (CSM), followed by two further pilot studies in Florence, with the Law Faculty of the University of Florence. The purpose of these pilot studies was to test whether the hypothesis was correct. We also wanted to determine whether there is a need to conduct additional pilot studies before carrying out a large-scale study in various countries. This projected is intended to create a model for a further pilot study that can be rolled out to relevant groups nationally/globally: this includes versions at CSM (Michelle Salamon) and involves collaborators from Kings College London (Dr. Hannah Quirk) and University of Haifa (Dr. Noga Shmueli-Meyer and Prof. Doron Menashe).

We propose conducting a comprehensive larger-scale study that examines whether drawing can be used as a tool to improve the accuracy and the collection of eyewitness identification evidence in Israeli criminal investigations. The results of the study could help improve legal policy regarding eyewitness identifications and the conduct of police lineups. The study would be a multicenter collaboration between KCL, CSM, and the University of Haifa. It will comprise a set of multi-participant experiments conducted simultaneously in Israel and the United Kingdom. As preparatory research prior to conducting the large-scale study, the four pilot experiments carried out in London and Florence had a two-fold purpose; first, to field test the study design to optimize and refine it before implementing it in the large-scale study; and, second, to explore any preliminary trends that emerged from the results.

# Significance and future applications of the research

If our hypothesis is confirmed, and the findings of our large-scale study show that the motor activity of drawing on paper, without any prerequisite for artistic skill, increases an eyewitness’s ability to recall details of a perpetrator following a criminal incident, we will be able to offer police investigators a novel, simple, and accessible tool, whereby eyewitnesses produce a sketch of what they saw to help them optimize their recall of a suspect’s facial features. Furthermore, this study will address the recommendations made by the Danziger Commission and myself regarding the need for investigative teams to consider the systemic variables under their control that may directly affect the reliability of police lineups, with a view to reducing rates of eyewitness misidentification

# The pilot studies

## Study design and method

We carried out two pilot studies in London in September 2023 at KCL and CSM, and a further two at the University of Florence in April 2024. After briefly reviewing the London pilots, this article focuses on the Florence pilot studies. The study design used in both sets of pilots was broadly similar. Participants were invited to a workshop on eyewitness identification. During the workshops, a staged incident occurred, where an individual interrupted the workshop. Participants were not warned about the interruption in advance. At the end of the workshop, participants were divided into two groups: a drawing group a and non-drawing group, by giving alternate participants a form allocating them into either the drawing group or a non-drawing group. Drawing groups were asked to draw the individual who interrupted the workshop and then to identify them in a photo identification lineup. Non-drawing groups were just asked to identify the individual in a photo identification lineup. In the pilot at CSM, participants were art students. In the pilot at KCL, participants were law students.

# The London pilot studies

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The CSM pilot was conducted on September 19, 2023. The pilot consisted of 39 participants. Overall, 12 made a positive identification of the “suspect.” The drawing group had slightly better recall, with 7 positive identifications compared to 5 in the non-drawing group. This amounts to a 5.12 % better rate of positive identification for the drawing group.

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N=39, p=0.73

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In the KCL pilot study on September 20, 2023, there were 34 participants, of whom 20 successfully identified the “suspect.” These correct identifications were spread equally among both drawing and non-drawing groups.

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It is plausible to hypothesize that the participants in the pilot at CSM, who were all art students with more experience (and perhaps greater ability) in drawing, might have had higher rates of correct identification compared with the law students in the pilot at KCL.

However, the percentages of accuracy in identification were very similar in the KCL pilot, and the art students from CSM did not perform better than law students from KCL. The KCL pilot, in which participants were all law undergraduates, were given the same instructions as those in the CSM pilot but had an equal rate of positive and negative identifications. Several participants in the KCL pilot embellished their drawings with handwritten notes. This might indicate a forensic mindset, an attempt to find a way to communicate additional information, or that they were not confident that their drawings had depicted the suspect accurately. These results encouraged us to conduct additional pilot studies to improve our research methods, including reducing any potential biases between the two groups.

# The pilot studies at the University of Florence

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| TOTAL UoF Participants | 48 |   |
| SUCCESSFUL ID | 37 | 77.00% |
| DRAWING | 14 | 29.16% |
| NON-DRAWING | 23 | 47.90% |
| NON-ID | 8 | 16.60% |
| INCORRECT | 3 | 6.25% |

# At the University of Florence, we recruited a total of 48 English-speaking graduate law students to participate in what they were told were workshops on eyewitness identification. Our aim was to gather a sufficient dataset of participants to test our hypothesis that the physical act of drawing improves memory recall for facial recognition, to improve positive rates of eyewitness identification. The format of the pilot workshops was designed to be clear and simple to run. It was supported by a package that included a participant questionnaire, instruction set, drawing materials, data-gathering sheets, and a photo identification lineup.

There was no prerequisite for participants to know how to draw or to regularly practice drawing. The 48 students consisted of 24 men and 24 women aged between 20–25 years. They were divided into two cohorts, one of 20 and one of 28 participants. The first cohort (n=20) was allocated to a morning workshop on April 4, 2024, and the second cohort (n=28) to an afternoon workshop on the same day. Each workshop was identical and consisted of a lecture given by the first author on eyewitness identification as the participants sat facing a screen at the front left of the classroom. After an hour, an unknown female (the “suspect”) burst into the classroom and disrupted the session as the participants were focused on the screen. Participants were not warned that this disruption would occur. After entering the classroom, the “suspect” stood on the left-hand side of the podium and asked me to sign a piece of paper that she was holding. Before the session, the authors had mapped out and rehearsed a prearranged route for the “suspect” to enter and exit without being visible to any of the “eyewitnesses.” After the staged incident, participants were informed that the interruption was part of a research project, and that further participation required their signed consent. After providing signed consent, participants were then asked to attempt to identify the individual who had interrupted the workshop in a photo lineup. Participants were divided into two groups of equal numbers – Group 1 (the drawing group) and Group 2 (the non-drawing (control) group) – based on where they were seated in the classroom. Those seated on the right were allocated to Group 1 and were asked to sketch in pencil on paper the individual they had seen interrupt the workshop. They were then asked to attempt to identify the suspect in the photo lineup. Those seated on the left were allocated to Group 2 and asked to attempt to identify the suspect in the photo lineup without first being asked to sketch the individual they had seen.

## Group 1 – Drawing Group

Participants who had been seated on the right-hand side of the classroom (Group 1) were asked to recall the “suspect” they had seen and then to sketch her using pencil on paper. They were then asked to formally identify the “suspect” by participating in a photo identification lineup comprising 8 photographs, each of a similar-looking individual, one of which was the “suspect.” Participants were given a pencil and sheet of A4 paper on a clipboard and asked to sketch what they recollected of the person they had seen. They were informed that the drawing itself would not form part of the identification. After 4 minutes of drawing, participants were asked to review a photo identification lineup of 8 mugshots, which they were informed may or may not include the “suspect.” They were given a datasheet with a series of questions relating to the identity of the “suspect.”

## Group 2 – Control Group

Directly following the staged interruption, the participants seated on the left-hand side of the classroom (Group 2) were asked to participate in a review of a photo identification lineup. The group was given 4 minutes to recall the “suspect” without drawing her. They were asked to review a photo lineup of 8 mugshots, each of a similar-looking individual. The participants were informed that the lineup may or may not include the “suspect” (in reality, one of the photographs was indeed of the “suspect”). They were given a datasheet with a series of questions relating to the identity of the “suspect.” Both Group 1 and Group 2 were provided with the same photo lineups and data sheets.

## Data collection

Information about the study and consent forms were presented to participants using Mentimeter, an interactive online app that provides information about the study and contact details of the research team in case any participants needed further clarification.[[24]](#footnote-29) Written forms were used to capture personal data and details about the participants, including gender. Two separate forms were used to gather data about the participants and to standardize data structure and format: *Sheet 1 For Drawing Participants* and *Sheet 2 For Non-Drawing Participants*.

Following the pilot studies, the forms were prepared for analysis by removing any duplicates or anomalous forms and reconciling any inconsistencies. The forms were analyzed and visualized using Microsoft Excel. We used data visualization to help transform data into an easy-to-understand graphic format.

# Results from the Florence pilot studies

The results from the two pilot studies in Florence are shown in the tables below. “Positive ID” means that the participants correctly identified the “suspect” in the photo lineup; “No Positive ID” means that the participants failed to correctly identify the “suspect” in the photo lineup.

**Table 3: Results for Group 1**

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|  | Positive ID  | No Positive ID |
| Drawing Group | 4 | 5 |
| Non-Drawing Group | 10 | 1 |

N=20, p=ADD
Table 3 shows the results of the first Florence pilot study. In the drawing group, 4 out of 9 participants made a positive identification of the “suspect.” In the non-drawing group, 10 out of 11 participants made a positive identification of the “suspect.”

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Table 4 shows the results of the second pilot study. In the drawing group, 9 out of 14 participants made a positive identification. In the non-drawing group, 14 out of 14 participants made a positive identification.

These findings show that contrary to our hypothesis (and the tendency of the findings from the London pilot studies), more participants in the non-drawing groups successfully made a positive identification of the suspect—50% accuracy compared to 27% accuracy across both drawing groups.

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For the Florence Group 1 pilot, 91% (10/11) of participants in the non-drawing group accurately identified the “suspect” compared to 100% (14/14) in the Group 2 pilot. While just 44% (4/9) of participants in the Group 1 drawing group made a positive identification, 64% (9/14) of the participants in the Group 2 drawing group made a positive identification. Thus, the morning non-drawing group was 47% more accurate in identifying the “suspect” than the morning drawing group, and the afternoon non-drawing group was 36% more accurate than the afternoon drawing group. Overall, across both groups, the non-drawing participants were 40% more accurate in identifying the suspect than the drawing participants.

* The confidence interval of correct identifications was 30–100%.
* The majority of participants made successful identifications.
* Three participants made incorrect identifications.
* Eight participants reported that they were unable to identify the suspect.

# Conclusions—insights and areas to improve and develop

The organization of the pilot studies, including the recruitment of English-speaking graduate students in Florence from diverse fields of law (such as commercial, international, and criminal), was effective. The Florence law graduate students expressed surprise at being asked to draw, but cooperated well, following the instructions they were given.

However, the Florence pilot studies did not confirm our hypothesis. We must pay close attention to this in order to draw accurate conclusions, gain insights, and improve our research methods and study design. This will help us avoid biases. As shown in the literature, to conduct an effective (and admissible) police lineup, investigators should avoid presenting eyewitnesses with a suspect who stands out against the other members of the lineup. For example, investigators should not place a young male suspect in the same lineup with seven visibly older males. When analyzing the outcomes of the Florence pilot studies, we noticed that the “suspect’s” face appeared slightly brighter in the photo identification lineup than the photographs of other members of the lineup, and we considered whether that might have biased successful identification rates. However, this would not explain the differences in the identification rates between the two groups, and the greater success rate among the non-drawing groups compared to the drawing groups.

Furthermore, when setting up the room in which the pilot studies are conducted, all participants must have a good line of sight towards the “suspect,” to ensure they all have the potential to successfully identify him or her in the photo lineup. It is possible that the room layout may have had some influence on the outcomes since the tables on the right-hand side – where the drawing groups were seated in both the morning and afternoon pilots – did not have a clear line of sight to the “suspect.” The screen/projector used in both rooms, on which the participants were focused during my lectures in the workshops at the time when the “suspect” entered the room, was located on the left-hand side.

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Additionally, we considered whether we had given the drawing groups too much time (4 minutes) to draw. This may have influenced them to spend more time drawing what they recalled of the “suspect,” rather than attempting to identify the “suspect” in the photo lineup. In the Florence pilots, participants were separated into drawing/non-drawing groups quasi-randomly, according to the side of the classroom they chose to sit on. In the London pilots, participants were separated into drawing/non-drawing groups quasi-randomly by allowing them to choose their seats in the classroom, and then allocating them alternately into either the drawing or non-drawing group. The different methods of allocating participants into the drawing/non-drawing groups in each pilot into separate groups may also have influenced the results.

We seek to continue to test our initial hypothesis, i.e., that the motor activity of drawing on paper, without any prerequisite for artistic skill, increases an eyewitness’s ability to recall details of a perpetrator fixed in their memory following a criminal incident. Demonstrating the validity of this hypothesis could help us develop a simple and accessible tool for police investigators where eyewitnesses draw what they saw to help them best recall a suspect’s facial features.

The insights that we gained from our Florence pilot studies improved our understanding of the various factors that could bias memory and affect the ability of eyewitnesses to accurately identify a suspect. Given the relatively limited number of participants in the pilots and following our consideration of the factors that could have, and did, influence the results, we decided to conduct additional pilots prior to the proposed large-scale study.

We have made several changes to the protocol for the additional pilot studies. Regarding the photo lineup order, although in our view this did not influence the outcome of the pilots, all the individuals whose photographs are included in the photo lineup will be photographed with the same camera and in the same lighting so that none of the images are brighter or stand out in relation to the others. Each pilot will be conducted under identical conditions. All participants should have an equal and optimal line of sight to the “suspect” when he or she enters the classroom, and when he or she stands next to the lecturer in the middle of the classroom. The time granted to the drawing group to sketch the “suspect” will be reduced. It will be made clear to participants in the drawing group that the exercise will not evaluate their artistic ability but is an attempt to draw the “suspect’s” face from memory. Participants will be invited to choose their own seats in the classroom at the start of the session and later allocated alternately into a drawing and non-drawing group.

 The insights we have gained from the pilot studies reported here will help us improve our next-step pilot studies. Based on the results of these, we intend to design and conduct a large-scale study. It is hoped that the findings of such a large-scale study will contribute to knowledge that can help policymakers and law enforcement officials develop tools and policies to improve eyewitness identification and reduce wrongful convictions.

## Appendix

**Mentimeter Site**

https://www.menti.com/alg8s78snvtm

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Simon, Dan, *In Doubt: The Psychology of the Criminal Justice Process*, (Harvard University Press, 2012).

Wammes, Jeffrey D., Melissa E. Meade, and Myra A. Fernandes, “The drawing effect: Evidence for reliable and robust memory benefits in free recall,” *Quarterly Journal of Experimental Psychology* 69, issue 9 (September 2016): 1752–1776. doi: 10.1080/17470218.2015.1094494.

University of Waterloo, “Drawing is better than writing for memory retention,” *ScienceDaily,* 6 December 2018, www.sciencedaily.com/releases/2018/12/181206114724.htm (accessed April 25, 2024).

1. Noga Shmueli-Meyer, “A New Approach to Identification Evidence: Proposed Model Amendment to Israeli Law and Implementation of the Demand for Supporting Evidence,” PhD diss. (University of Haifa, 2016). See also: Noga Shmueli-Meyer, *Identification Evidence: Analysis of Failures and a Proposed Model for a New Approach* (Tel Aviv: Nevo Publications, 2021). **ARE BOTH THESE SOURCES IN HEBREW? IF SO, PLEASE ADD [Heb] FOLLOWING THE ENTRY** [↑](#footnote-ref-1)
2. See: Doron Menashe and Rabeea Assy, “Mistaken Facial Identification of Suspects,” *Moshavim—The Hebrew University Law Journal* 35, no. 1 (2005): 205-329 (in Hebrew). This paper is the theoretical starting point for Shmueli-Meyer’s research. It is the most comprehensive and in-depth academic study conducted to date in Israel on the issue of facial identification and has been cited many times in Israeli case law. [↑](#footnote-ref-2)
3. Shmueli-Meyer, “A New Approach.” [↑](#footnote-ref-3)
4. *Yissacharov v. Chief Military Prosecutor*, CrimA 5121/98, ISSP 61(1) 461 (2006). [↑](#footnote-ref-4)
5. See: Shmueli-Meyer, “A New Approach,” Shmueli-Meyer, *Identification Evidence.* [↑](#footnote-ref-5)
6. Barry Scheck, Peter Neufeld and Jim Dwyer, *Actual Innocence: Five Days to Execution and Other Dispatches from the Wrongly Convicted*, Doubleday (2009): 246. [↑](#footnote-ref-6)
7. The Innocence Project (see: https://innocenceproject.org/about/) is the initiative of two scholars, Barry Scheck and Peter Neufeld, of Cardozo School of Law, Yeshiva University. [↑](#footnote-ref-7)
8. Scheck et al., *Actual Innocence*: ADD PAGE [↑](#footnote-ref-8)
9. E.g., the Israel Police internal guidelines (Section 4 (a) (2)) show a preference for live identification lineups. This is not based on research, but because the courts tend to give higher evidentiary weight to identification evidence obtained from live lineups. Further, Section 3(a) of the guidelines state that, for an eyewitness who is a prior acquaintance with a suspect, there is no requirement to conduct an identification lineup. This is contrary to research findings, which indicate that prior acquaintance will not necessarily affect the ability of an eyewitness to accurately identify a suspect, and that this depends on a large number of variables such as: degree of acquaintance, the duration of the eyewitness’s exposure to the suspect’s character, and other biases that may influence the eyewitness (see: Shmueli-Meyer, *Identification Evidence*: 70–71)(PLEASE ALSO PROVIDE A REFERENCE FOR THE “RESEARCH FINDINGS” ]. Further, research indicates that the impact of the double-blind procedure, where the lineup administrator does not know the suspect’s identity or position in the lineup, on the accuracy and reliability of the eyewitness’s identification, cannot be overstated (Shmueli-Meyer, *Identification Evidence*: 72-73). PLEASE ALSO PROVIDE A REF FOR THE SPECIFIC RESEARCH CITED HERE). However, the Israel Police internal guidelines (Section 4 (d) (2)) merely recommend that the lineup administrator should be an investigator who is not involved in the investigation. This is despite unequivocal research findings (ADD REFERENCE – WHICH FINDINGS) that false identification rates are 7 times higher when the lineup administrator is aware of the suspect’s identity and position in the lineup. Moreover, research shows that warning the eyewitness prior to a lineup that the suspect may not be included is the most important warning [ADD REFERENCE – WHICH RESEARCH SAYS THIS?] and that lineup guidelines that presumed the suspect was included in the lineup had a greater potential to influence the eyewitness and their choice. The Israel Police internal guidelines (Section 4(g)(2) lack such an instruction (see: Shmueli-Meyer, *Identification Evidence*: 73-74) Finally, sections 4(j)(1), 5(f)(1), and 5(f)(2) of the Israel Police internal guidelines on lineups stipulate only that live and photo identification lineups that are conducted without a defense attorney present should be documented. Research indicates (ADD REFERENCE – WHICH RESEARCH INDICATES) that documentation captures the eyewitness’s body language and unusual behavioral cues, which a defense attorney may not notice (for more, see: Shmueli-Meyer, *Identification Evidence*: ADD PAGE NUMBERS NOT THE CHAPTER NAME). [↑](#footnote-ref-9)
10. See, e.g., Ryan J. Fitzgerald, Heather L. Price and Tim Valentine, “Eyewitness Identification: Live, Photo, and Video Lineups*,” Psychology, Public Policy, and Law: An Official Law Review of the University of Arizona College of Law and the* *University of Miami School of Law,* 24, no. 3 (2018): 307–325. <https://doi.org/10.1037/law0000164>; David Egan, Mark Pittner and Alvin G. Goldstein, *Eyewitness Identification: Photographs vs. Live Models*, Law and Human Behavior, 199, no. 1 (1977). [↑](#footnote-ref-10)
11. As an expert on forensic identification, Shmueli-Meyer was invited to testify before the Commission. [↑](#footnote-ref-11)
12. Israel State Commission of Inquiry on Wrongful Convictions (Danziger Commission). *Interim Report of the State Commission for the Examination and Correction of Wrongful Convictions*. (Jerusalem, 2019). The Danziger Commission concluded that eyewitness identification evidence should be regarded with extreme caution and granted little weight. This conclusion was reached following many hearings with experts on eyewitness testimony and identification evidence, as well as with representatives from the Israel Police who routinely handle such evidence. The Commission also declared that a defendant should not be convicted solely on the basis of a single piece of evidence consisting of eyewitness identification. Further, police photograph (mugshot) identification should be given the weight of supplementary evidence only. [↑](#footnote-ref-12)
13. While the Danziger Commission has not yet accepted Shmueli-Meyer’s final proposal to regulate the issue of eyewitness identification in primary legislation, its recommendations are an important step toward changing and correcting potential wrongful convictions arising from single eyewitness identifications as evidence. [↑](#footnote-ref-13)
14. Dan Simon. *In Doubt: The Psychology of the Criminal Justice Process*, (Harvard University Press, 2012). [↑](#footnote-ref-15)
15. Shmueli-Meyer, “A New Approach.” [↑](#footnote-ref-19)
16. Shmueli-Meyer, *Identification Evidence.* [↑](#footnote-ref-20)
17. CrimA 3055/18 Jaber Abu Rakik v. State of Israel [↑](#footnote-ref-21)
18. Judith E. Fan, Daniel L.K. Yamins, and Nicholas B. Turk-Browne, “Common Object Representations for Visual Production and Recognition,” *Cognitive Science* 42 (2018): 2670–698, 2670. [↑](#footnote-ref-22)
19. Jeffrey D. Wammes, Melissa E. Meade, and Myra A. Fernandes, “The drawing effect: Evidence for reliable and robust memory benefits in free recall,” *Quarterly Journal of Experimental Psychology* 69, no. 9 (September 2016): ADD RELEVANT PAGE NUMBER/S (NOT THE FULL PAGINATION FOR THE ENTIRE ARTICLE) [↑](#footnote-ref-23)
20. Malcolm I. Bauer and P.N. Johnson-Laird, “How Diagrams Can Improve Reasoning,” *Psychological Science*, 4, no. 6: ADD RELEVANT PAGE NUMBER/S (NOT THE FULL PAGINATION FOR THE ENTIRE ARTICLE) [↑](#footnote-ref-24)
21. Melissa E. Meade, Jeffrey D. Wammes, and Myra A. Fernandes. 2018. “Drawing as an Encoding Tool: Memorial Benefits in Younger and Older Adults.” *Experimental Aging Research*, 44, no. 5: 369–96. doi:10.1080/0361073X.2018.1521432. [↑](#footnote-ref-25)
22. Michelle Salamon: ‘“Drawing Laboratory’: Research Workshops and Outcomes,” *Spark: UAL Creative Teaching and Learning Journal* 3, no. 2 (2018). [↑](#footnote-ref-27)
23. Parliament. House of Commons. (2019). Improving Witness Testimony. (PostNote 607, July). London: House of Commons. Available at: https://post.parliament.uk/research-briefings/post-pn-0607/ [↑](#footnote-ref-28)
24. <https://www.menti.com/alg8s78snvtm> [↑](#footnote-ref-29)