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

*Findings of pilot studies conducted at the University of Florence, Italy*

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Table of Contents

[Background 2](#_Toc164952452)

[Eyewitness Testimony 2](#_Toc164952453)

[Drawing as a Memory Aide 7](#_Toc164952454)

[The aim of the research 8](#_Toc164952455)

[Significance and future applications of the research 9](#_Toc164952456)

[The pilot studies conducted at the University of Florence 10](#_Toc164952457)

[Study design 10](#_Toc164952458)

[Group 1 – Drawing Group 11](#_Toc164952459)

[Group 2 – Control Group 11](#_Toc164952460)

[Data collection 11](#_Toc164952461)

[Data from the London pilot studies 12](#_Toc164952462)

[Summary of data from the Florence pilot studies 12](#_Toc164952463)

[Conclusions—insights and areas for development 13](#_Toc164952464)

[Appendix 18](#_Toc164952465)

[Bibliography 19](#_Toc164952466)

# 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?

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.

# Eyewitness IdentificationTestimony

In the legal field, there is almost unanimous agreement, particularly in the United States and Canada, that eyewitness misidentification is the most common cause of miscarriages of justice and the primary cause of wrongful convictions. In my doctoral dissertation,[[1]](#footnote-1) I contended that it is not possible to accept a situation in which a criminal conviction can rely upon a single piece of evidence that is so unsound.[[2]](#footnote-2)

With eyewitness identification evidence, there are defects with respect both to the inadequacies of human perception and memory, and in the functioning of the various investigatory bodies. 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 in which a defendant is convicted of a criminal offense, to be proven innocent at a later stage through post-conviction DNA testing. In my doctoral dissertation, I argued that it is necessary to embark on a comprehensive reform of Israeli law relating to convicting a defendant based on a single piece of eyewitness identification evidence. I proposed a model for structuring a new approach to eyewitness identification evidence, including an amendment to the law and adoption of a requirement for an evidentiary supplement. These were included in a draft law, “Conducting Lineups, 2016,” which I designed for this purpose. This draft bill is in effect a comprehensive legislative enactment regulating all the various aspects of police lineups in criminal law. It is based on four main approaches: (1) comparing the underlying legal and psychological scientific presumptions regarding eyewitness identification evidence; (2) requiring additional evidence in Israeli law (analogous rule in United States law requiring a scintilla-of-evidence in order to obtain a conviction based on a defendant’s confession given outside of court); (3) invalidating rule as set forth in Yissacharov vs. Chief Military Prosecutor;[[3]](#footnote-3) and (4) applying English law.

Prior to proposing the above model, I addressed the multi-faceted difficulty inherent in the interface between Israeli law and eyewitness identification evidence. 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 many biases liable to influence eyewitnesses and result in mistaken identifications, and the great risk of wrongful convictions arising from such problematic evidence. However, Israeli case law has failed to establish any requirement for offering supplementary evidence as a condition for obtaining a conviction based upon this single item of eyewitness evidence.

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.[[4]](#footnote-4) The project is the initiative of two scholars, Barry Scheck and Peter Neufeld, of Cardozo School of Law, Yeshiva University. Its findings demonstrate that 76% of wrongful convictions—cases in which convictions were later overturned through the work of the Innocence Project as a result of 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. That is, 76% of all convictions proven wrongful relied, at least to some extent, upon eyewitness identification evidence.

In Israel, beyond the case law mentioned above, which offers little guidance, there is not yet any well thought-out and comprehensive doctrine of eyewitness identification. Moreover, an examination of the existing rules demonstrates that they are often unable to provide a defendant with appropriate protection against wrongful conviction. In addition, many of the rules are inconsistent with scientific research on human memory and cognitive psychology. Alongside the scant case law, the Israel Police has made an effort to formulate guidelines for police lineups. Incorporated into the internal guidelines of the Israel Police Investigations and Intelligence Branch, these guidelines lack any normative binding force, and if violated, do not give rise to any sanction of a punitive or evidentiary nature. Many of the guidelines are drafted solely as recommendations. As with case law, analysis of these internal guidelines shows that some are inconsistent with scientific evidence, and at times even clearly contradict it. This lack of a well-regulated body of law with respect to eyewitness identification evidence, including the absence of clear rules set forth in binding legislation, has a clear impact at all levels.

An additional aspect of the problems inherent in the interface between Israeli law and eyewitness identification evidence concerns the fact that 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 lineup.

Furthermore, 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 obtain such evidence, with no possibility of “improving” or “amending” it later. 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 an 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. Neither is there any well-regulated doctrine in Israeli case law.

In recent years, moderate yet significant changes have taken place in Israeli law relating to eyewitness identification evidence. In xxxx, the Minister of Justice appointed a public Commission of Inquiry chaired by (retired) Supreme Court Justice Yoram Danziger to examine and correct wrongful convictions. The Danziger Commission focused on failures around eyewitness identification evidence as its first area of inquiry. On September 2, 2019, the Commission published its interim report,[[5]](#footnote-5) which incorporated most of the suggestions in my doctoral dissertation regarding necessary changes in police investigative work and internal procedures. While the Danziger Commission has not yet accepted my 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 as a result of the courts’ practice of single-identification evidence.

(להוסיף כי נפלה בידי הזכות להופיע כמומחית לראיית הזיהוי בפני הועדה)

A preliminary review of the Danziger Commission’s interim report reveals opinion that eyewitness identification evidence should be regarded with extreme caution and granted little weight. This conclusion followed 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 an eyewitness identification, and that police photograph (mugshot) identification should be given the weight of supplementary evidence only.

Furthermore, the Commission 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[[6]](#footnote-6) and from my doctoral dissertation, and the dramatic data presented in a study I conducted that formed part of the Innocence Project in the United States. The Commission found that investigatory bodies should be instructed to give utmost consideration to extra-systemic variables beyond its 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, criminal law in Israel has come to recognize that human memory can prove deceptive, prone as it is to biases and failures. As a result, it is difficult to trust eyewitness memory and base convictions on eyewitness identification evidence alone. That this recognition has penetrated Israeli law can be seen in the Danziger Commission’s recommendations and in my own comprehensive study. Both 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.”[[7]](#footnote-7) Drawing is known to encourage visual analysis and help establish concentration. In a 2015 free-recall study, Wannes, Meade and Fernandes showed that drawing words rather than writing them produced better recall among adults, and argued that the mechanism driving this effect is that drawing integrates a combination of memory codes: elaboration, visual imagery, motor action, and picture memory.[[8]](#footnote-8) When used as a tool ineyewitness statements, all of these mechanisms can be used to enhance memory and recall performance.[[9]](#footnote-9) 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,[[10]](#footnote-10) and can be described as a means through which thought can be made tangible. Research has indicated that drawing leads to improved memory recall compared to other study techniques, because it incorporates multiple ways of representing the information—visual, spatial, verbal, semantic, and motoric. Drawing has been shown to be better than writing for memory retention.[[11]](#footnote-11)

In addition to the recommendations made by Israel’s Danziger Commission and in my doctoral dissertation, significant insights on the reliability of human memory have emerged from research in the field of art. In a pilot study conducted at Central Saint Martins University of the Arts (CSM),[[12]](#footnote-12) Michelle Salamon made important findings regarding the links between figure drawing and memory improvement. Using techniques developed in the nineteenth century for teaching drawing through memory, Salamon’s study examined whether drawing as an innate human ability can be used to focus memory and improve recall. The project informally piloted workshop space where drawing extended beyond traditional expectations and was used as a research tool for developing thinking, improving concentration, and enhancing memory. The workshops aimed to identify a series of mnemonic devices to record and recall information from episodic memory and use them to develop a tool for use in art and design learning environments

The purpose of Salamon’s pilot was to construct a case for recognition of the value of drawing as a learning tool, while ensuring that the learner’s experience fostered critical reflectivity. The relationship between observation and movement in drawing led this project to consider whether the physicality of drawing, as sensory information, might serve as an efficient mnemonic tool.

The study examined whether the motor activity involved in drawing (sketching on paper) could improve memory by encouraging the semantic, visual, and motor aspects of memory. Twenty students from CSM participated in 5 weekly 3-hour sessions each in which they were given personal drawing assignments. There was no prerequisite for participants to have any artistic ability or talent for drawing. The participants reported that when they were asked to draw their first pair of shoes from memory, they were able to progressively recall additional information about them. 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). The potential uses for drawing as a tool for enhancing or honing memory are varied and cross- disciplinary. Drawing can play a valuable role in encoding and distilling visual experience and transforming it into a concrete and substantive form.

Furthermore, 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.[[13]](#footnote-13)

# The aim of the research

In view of the need for a comprehensive reform of Israeli law around eyewitness identification evidence, and drawing on significant new data on how human memory can be improved and refined through drawing on paper, 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.

In view of the fallibility of human memory, a phenomenon recognized in both art and law, and given the insights emerging from Salamon’s pilot study, we propose a comprehensive study that combines the two disciplines with a view to improving legal policy regarding eyewitness identifications and the conduct of police lineups. Our proposed large-scale study, which aims to examine ways to improve the accuracy and the collection of eyewitness identification evidence in Israeli criminal investigations, is a collaboration between Dr. Hannah Quirk from King’s College London (KCL), Michelle Salamon from Central Saint Martins University of the Arts (CSM) in the United Kingdom, and Prof. Doron Menashe and myself from the University of Haifa in Israel. The proposed study will comprise a set of multi-participant experiments conducted simultaneously in both countries. Prior to conducting the study, we carried out a set of four pilot studies in London and Florence. The aim was to field test methods of conducting the research to optimize and refine them before implementing them in the large-scale study, and to explore any preliminary trends that emerged in the pilot data.

# Significance and future applications of the research

If our research hypothesis is confirmed, and if the findings of our large-scale study corroborate those of Salamon—that is, 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 conducted at the University of Florence

## Study design

We carried out two pilot studies in London in September 2023, and a further two pilot studies at the University of Florence in April 2024. This article focuses on the pilot studies conducted in Florence. The study design used in Florence both and the London pilot studies were broadly similar. However, in Florence, participants were all graduate law students, while in London, participants were arts students. As part of the studies, different actors interrupted the respective workshops. Participants in each study were asked to identify their specific actor in a photo identification lineup. In the Florence pilot, the drawing groups and the non-drawing groups were seated on different sides of the classrooms, while in London, all participants were seated together, and were divided into drawing and non-drawing groups by having alternate participants receive a drawing group or a non-drawing group form.

The two Florence pilot studies were organized by the Dean of the Faculty of Law at the University of Florence, Prof. Allesandro Simoni and his assistant, doctoral student Costana De Caro. We recruited two groups totaling 48 English-speaking students (n=48 ) to participate what they were told were workshops on eyewitness identification. Half the students were allocated to a morning workshop and half to an afternoon workshop. During each workshop, participants acted as “eyewitnesses” to a staged incident that interrupted the workshop. Participants were not told that the staged incident would occur ahead of time. There was no prerequisite for the participants to know how to draw or to draw regularly. Immediately following the staged intervention, participants were randomly allocated to Group 1 (the drawing group) or Group 2 (the non-drawing group).

Our aim was to gather a reliable and large dataset (n=48) of a large range of participants to demonstrate whether the physical act of drawing may be used to improve memory recall for facial recognition to improve eyewitness identification. The template provided a broad ranging sample in terms of age, experience, and skills, and 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.

The first pilot study in Florence took place in the morning of April 4, 2024 and consisted of 20 participants (n=20). The second pilot study took place on the afternoon of the same day and consisted of n=28 participants (n=28). Tmoher study began with the participants seated facing a screen at the front of class (located on the left-hand side of the room), where I presented an eyewitness identification workshop. After an hour, an actor (the “suspect”) burst into the classroom and disrupted the session as the participants were focused on the screen. 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 researchers and the “suspect” 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 “incident,” I informed the participants that the interruption was part of a research project, and that further participation required their signed consent. Participants were then separated into two groups: Group 1 (the drawing group) and Group 2 (the non-drawing (control) group). They were asked not to discuss the incident (this is important, as discussion may affect the reliability of eyewitness identification).

## Group 1 – Drawing Group

Participants who had been seated on the righthand side of the classroom (Group 1) were asked to recall the “suspect” whom 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 line-up 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 data sheet with a series of questions relating to the identity of the “suspect.”

## 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. Written forms were used to capture personal data and details about the participants, including gender and ethnic origin. 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 data 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 to find trends, correlations, outliers, and variations. We discovered patterns and used data visualization to help transform data into an easy-to-understand graphic format.

# Data from the London pilot studies

The data from the pilot studies conducted at KCL and CSM in London are provided below. The CSM pilot was conducted on September 19, 2023 with a group of 39 participants (n=39), of whom a total of12 (n=12 ) made a correct identification of the “suspect.” The drawing group had better recall, with 7 correct identifications compared to 5 in the non-drawing group. This represents a 5.12% bias in favor of drawing as an effective trigger for recall. In the KCL pilot study on September 20, 2023, there were 34 participants (n=34) of whom 20 successfully identified the “suspect.” These correct identifications were spread equally among both drawing and non-drawing groups.

The drawings created by the drawing groups, in particular, provided insights into the sample groups. For example, the CSM drawing group participants, who, as arts students, may have been more experienced with drawing, had a better rate of positive identification. This suggests a bias in favor of drawing as an effective trigger for recall. 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. A number of participants in the KCL pilot embellished their drawings with handwritten notes. This might indicate a forensic mindset or an attempt to find a way to communicate additional information. Those insights encouraged us to conduct additional pilot studies to improve our research methods, including around reducing any potential biases between the two groups.

# Summary of data from the Florence pilot studies

As noted above, to reduce biases, the two pilot studies in Florence were conducted with two groups of graduate law students. The results were as following:

**Group 1**: n=20 students.

*The drawing group*: n=9, 4/9 made a positive identification of the “suspect.”

*The non-drawing group*: 10/11 made a positive identification of the “suspect.”

**Group 2**: n=28 students.

*The drawing group*: n=14, 9/14 made a positive identification of the “suspect.”

*The non-drawing group*: n=14, 14/14 made a positive identification of the “suspect.”

These findings suggest that, contrary to our hypothesis (and the tendency of the findings from the London pilot studies), in Florence, the non-drawing groups were better able to identify the suspect—50% accuracy compared to 27% accuracy across both drawing groups. For the Florence pilot conducted in the morning, 91% of participants in the non-drawing group accurately identified the “suspect” compared to 100% in the pilot study that took place in the afternoon. While just 44% of participants in the morning drawing group accurately identified the “suspect,” 64% of the participants in the afternoon drawing group successfully identified the “suspect.” 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.

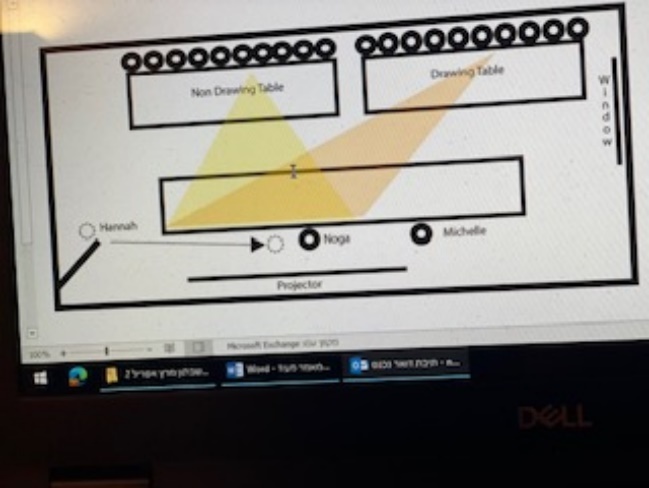
* The confidence interval of correct identifications was 30–100%
* The majority of participants made successful identifications.
* Three participants made incorrect identifications
* Eight participants reported that they were unable to identify the suspect.

# Conclusions—insights and areas to improve and develop

The organization of pilot studies, including the recruitment of a large group of English-speaking graduate law students in Florence was effective. Framing the sessions resulted in a heterogeneous participation of students from different courses, creating potential for participants from across various disciplines at various stages of their student careers. The Florence graduate law students expressed surprise at being asked to draw but cooperated well, following the instructions they were given.

Conversely, the fact that the pilot studies in Florence did not confirm our hypothesis, requires close attention in order to draw conclusions, reach insights, and improve our research methods and study design and avoid biases. As shown in the literature, to conduct an effective (and admissible) police lineup, investigators should avoid presenting g 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 line-up than the photographs of other members of the lineup, and we considered whether that might have biased successful identification rates. Even so, that 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, it is important that all participants 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 in the rooms occupied by the drawing groups 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 in both rooms.



(לסדר את התמונה)

Additionally, we considered whether we had given the drawing groups too much time (4 minutes) to draw. This may have influenced the participants in the drawing group to spend more time drawing what they recalled of the suspect, rather than attempting to identify the photo of the “suspect” in the photo lineup. Dividing the participants in each pilot into separate groups may also have influenced the results.

We seek to continue to test our initial hypothesis—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 that involves having 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 sharpened our understanding of the various factors that could bias memory and affect the ability of eyewitnesses to accurately identify a suspect. In view of the relatively limited number of participants in the pilots, and following our consideration of the factors that could have, and did, influence the results, and in light of the fact that these results are not conclusive, we found that there is room to conduct additional pilots before conducting the proposed largescale study.

Furthermore, we found a tighter and more cohesive protocol for conducting additional pilot studies. Regarding the photo lineup order, although in our view this did not influence the outcome of the pilots, we found that there is a need to ensure that all the individuals whose photographs are included in the lineup are photographed with the same camera and in the same lighting, so that no one image is brighter or stands out in relation to the others. Second, each pilot should be conducted under identical conditions. With regard to the layout of seating for participants and the staged disruption by the “suspect,” both groups should have an equal and optimal line of sight to the “suspect” who enters the classroom and stands with the lecturer in the middle of the class. Third, we found that we need to reduce the time granted to the drawing group to sketch the “suspect,” while also emphasizing to them that the exercise will not evaluate their artistic ability, but is an attempt to draw the “suspect’s” face from memory. Finally, rather than dividing the study group into a “drawing group” and a “non-drawing group” at the start of the session, it is preferable to divide the participants into two groups by having them all sit together at the start, and distribute allocation forms so that half are allocated into the drawing group and half into the non-drawing group.

We believe that our proposed large-scale interdisciplinary study, which will be conducted in two countries simultaneously, and which combines two different disciplines (that share the common challenge of finding ways to improve human recall) will improve criminal law policy. Policy reforms will be better, more effective, and fairer if they are based on knowledge that draws from several disciplines, rather than if they are determined in a manner that is disconnected from other, even unrelated, disciplines and fields.

It is apparent that, if the scientific validity of substantial, large-scale studies such as the one proposed here is strong, then it is appropriate to use their findings to inform relevant policy developments, cross-pollinating from one discipline to another to enhance each field. This is based on the assumption that human psychological and functional processes, in particular those related to memory, are so innate that they operate in a similar way in the majority of people.

It is our hope that the insights we have gained from our pilot studies in London and Florence will help us improve our next pilot studies, which in turn will help us conduct a largescale study whose findings may go some way to reducing the rate of wrongful convictions made on the basis of eyewitness misidentification.

# Appendix

**Mentimeter Site**

<https://www.menti.com/alg8s78snvtm>

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