

# LINEUP CONSTRUCTION FOR FORENSIC EARWITNESS IDENTIFICATION: A PRACTICAL APPROACH

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## ABSTRACT

In the last decade there has been a growing interest in questions raised by the auditory identification of persons by victims and witnesses. In the absence of clear criteria for the design of earwitness identification procedures, a set of guidelines is proposed below which is partly based on a tried and trusted method developed by the Dutch police and judiciary for the visual identification of persons by eyewitnesses. Some of the issues which needed to be resolved in designing the proposed procedure are the choice between repeated trials and single trials, the use of blank trials versus suspect-present trials, the use of actors, the choice between verbatim text or transcripts versus free speech, and the choice between suspect similarity versus culprit description in the selection of foils. A discussion of the considerations underlying the various decisions that were made can be found in [2]. Critical elements of the procedure are described in detail.

## 1. INTRODUCTION

The multiple auditory identification or voice line-up is an identification procedure that has so far been used relatively seldom in the Dutch forensic context, whether it be for investigative or for evidential purposes. This is no doubt partly due to a lack of familiarity with the procedure, as well as to its limited applicability. Another factor which may have played a part is uncertainty about its evidential value. On an international level, the lack of clarity and agreement about the procedure has not done much to increase the popularity of the voice lineup either [3]. Yet there are circumstances in which a properly conducted voice line-up may have considerable evidential value. However, as in the case of the visual line-up, for this to be possible it is essential that certain rules of procedure are strictly adhered to. Strict but logical rules of procedure guarantee that the identification procedure is carried out in an objective fashion and allow its validity to be investigated. After all, in a judicial context the purpose of any identification procedure should not merely be to identify guilty suspects as perpetrators but above all to help prevent innocent suspects being convicted.

In the Netherlands, eyewitness identification procedures are administered according to detailed instructions by specially trained police officers [1]. The procedures were developed over the years by the Dutch College for Criminal Investigation & Crime Control in close collaboration with Wagenaar [6] and others. The procedures presented below are essentially an attempt to adapt the existing format to the field of speaker identification by earwitnesses.

## 2. THE LINEUP GUIDELINES

### 2.1. Criteria for the application of an auditory confrontation

#### 2.1.1. General criteria:

- the crime justifies a major investigative effort;
- there is insufficient independent evidence of a different nature;
- visual confrontation is impossible: the witness did not see the perpetrator's face.<sup>1</sup>

#### 2.1.2. Practical considerations:

- availability of representative speech sample(s) of the suspect;
- availability of suitable foils;

#### 2.1.3. Conditions at the time of perception:

- duration of the contact: the witness heard the perpetrator's voice for more than 30 seconds;
- nature of the contact: the witness not only heard the perpetrator speak but also spoke with the perpetrator;
- alertness: the witness was not a passer-by (a casual witness) but paid special attention to the perpetrator's voice;
- frequency of the contact: the witness preferably heard the perpetrator speak on more than one occasion or in more than one condition, e.g. on the telephone and face-to-face.

#### 2.1.4. Retention time: the incident took place less than three months earlier.

## 2.2. Control and execution

- #### 2.2.1. The identification procedure should be organized and carried out by police officers with appropriate training, assisted by a forensic linguist/phonetician.

## 2.3. Lineup size

- #### 2.3.1. The lineup consists of a minimum of five voices, in addition to that of the suspect (see also 2.8 below).
- #### 2.3.2. The eventual selection is preceded by a similar recording of the voice of a speaker who clearly differs in terms of accent and dialect from the suspect.
- #### 2.3.3. There is only one suspect in the lineup. If there are several suspects whose voices may be recognized by witnesses, there will have to be a separate lineup for each suspect.
- #### 2.3.4. The voice of the suspect and those of the foils should each occur once only in the lineup.
- #### 2.3.5. The samples of the suspect and the foils should occur in random order.

## 2.4. Speech profile of the perpetrator

- #### 2.4.1. The witness is questioned about the speech characteristics of the perpetrator as soon as possible after the incident and preferably by the forensic linguist who is involved in the execution of the lineup. The information retrieved from the witness is used to compose a speech profile of the

perpetrator which plays a key role in the selection of foils.<sup>2</sup> It is essential that this speech profile is made as soon as possible. In practice, the first opportunity for the forensic linguist to interview the witness often only arises when a suspect emerges and the desirability of doing a voice lineup presents itself.

## 2.5. Speech profile of the suspect

- 2.5.1. If a recording of the voice of the suspect happens to be available which is suitable for the identification procedure and meets the requirements specified in 2.7, this recording is used to compose a speech profile for the suspect.
- 2.5.2. Major differences between the speech profiles of the perpetrator and the suspect may be reason to cancel the procedure. Some degree of difference between the profiles is inevitable and need not be cause for concern.

## 2.6. Speech recordings: general

- 2.6.1. Recordings are made using a high-quality microphone and a digital tape recorder (DAT), or by means of qualitatively equivalent equipment.
- 2.6.2. To avoid distraction, no ambient or background noise should be audible in the recording.
- 2.6.3. No voices other than that of the recorded speaker should be audible in the recording.
- 2.6.4. Recordings should be at least four minutes in duration, so that a selection can be made from the recorded material.

## 2.7. Recording of the suspect

- 2.7.1. If a suitable recording of the suspect's voice is not available, one will have to be made, bearing the following in mind:
  - the communicative context should correspond as closely as possible to that of the incident. This involves parameters like telephone speech vs. face-to-face; spontaneous vs. read text; quiet speech vs. raised voice, i.e., soft or loud speech, shouting, etc.
  - the speech style should correspond as closely as possible to that of the incident, i.e., quiet, angry, excited, agitated, depressed, energetic, etc.
  - the suspect should be encouraged to produce spontaneous speech on a subject that bears no relation to the incident that is investigated;
  - if possible, verbatim speech as produced by the perpetrator during the incident (according to the witness) should also be recorded. If these utterances are very short, they should be repeated a number of times.<sup>3</sup>

## 2.8. Recording of the foils

- 2.8.1. Recordings are made of a minimum of 5 foils (plus, in practice, at least the same number of reserves) whose speech matches that of the suspect in terms of:
  - sex;
  - (perceived) age;
  - linguistic features: type of accent/dialect;
  - other pronunciation features like pitch, speech rate, voice quality, etc.;
  - perceived educational level;
  - socio-economic background;

- 2.8.2. The voices of the foils should also meet the description of the perpetrator's voice given by the witness.
- 2.8.3. Only those persons qualify as foils who have no relevant criminal record, who could not have committed the investigated crime and, as far as can be ascertained, do not know the perpetrator.

## 2.9. Selection and recording of test speaker

- 2.9.1. A test speaker is selected and recorded whose accent and dialect clearly differs from that of the suspect.

## 2.10. Recording of presenter's voice

- 2.10.1. A presenter is selected of the opposite sex to the persons in the line-up. For the text to be recorded see 2.11.7 below.

## 2.11. Editing the audio material

- 2.11.1. The recorded voices are edited using high quality, preferably digital editing equipment. The final selection is copied on a DAT-cassette or CD, with each voice being marked with the appropriate number (i.e. 1, 2 etc.) for easy retrieval.
- 2.11.2. From the foil recordings 7 or 8 foils are selected who will be used in the draft lineup.
- 2.11.3. For each of the selected foils a selection is made of the material to be included in the draft lineup.
- 2.11.4. Audible indications of tension like sighs, nervous coughs and the like are removed.
- 2.11.5. All speech samples are equally long, with a duration of no more than 20 seconds.
- 2.11.6. The playback loudness level should be the same for all voices.
- 2.11.7. The lineup should be structured as follows:

Presenter: *You have just been told about the voice lineup procedure. You will first hear the voice of a test speaker. This will give you some idea of what to expect.*  
1 second silence - voice of test speaker - 2 seconds silence  
Presenter: *You will now hear the first voice of the lineup*  
2 seconds silence - Presenter: *Number 1* - 1 second silence  
Voice 1  
2 seconds silence - Presenter: *Number 2* - 1 second silence  
Voice 2....., etc., etc., until the last voice is finished.  
2 seconds silence.  
Presenter: *This is the end of the lineup.*
- 2.11.8. At least one backup copy is made of the draft lineup.

## 2.12. Testing the lineup

- 2.12.1. There must be no bias in the selection which would lead any one of the voices to be more likely to be picked than the others. To determine whether such bias exists, the selection of voices must be played separately before the actual identification to:
  - a. at least two test listeners (see also 2.16.5 below).
  - b. if possible to:
    - the public prosecutor,
    - the examining judge,
    - the defense counsel;

## 2.13. Selection of the test listeners

- 2.13.1. The test listeners must:

- have the same language (accent/dialect) background as the witness;
  - be of the same sex as the witness;
  - live in the same linguistic community as the witness;
  - be unacquainted with the suspect and foils;
  - have no contact with the witness and the other test listener(s) during the identification procedure.
- 2.13.2. Before the procedure takes place the test listeners must:
- be informed of the nature of the offense;
  - read *Information for test listeners* (See 3.2 below);
  - be told of the relevant speech features in the description of the perpetrator given by the witness.
- 2.13.3. If the test listeners find occasion to indicate a particular speaker, the lineup must be immediately reviewed. If the voice indicated is not that of a foil, his sample can be removed from the selection (provided there are at least five foils left) or replaced with the sample of a reserve.
- 2.13.4. The final selection will have to have been tested by at least two test listeners who had no relevant comments to make.
- 2.14. Avoiding secondary identification**
- 2.14.1. Before the identification procedure starts, the witness must be asked if he has heard the voice of the person involved in the incident since the time of the incident. If this is the case, it must be stated in the official report.
- Please note: The identification procedure may not go ahead if the witness has heard the suspect's voice in relation to the police or in the context of the case in question. For example:
- the witness has already been played a recording of the suspect's voice;
  - the witness has heard the suspect's voice at the police station;
  - the suspect's voice may have been played in the media.
- 2.15. Practical execution of the identification procedure**
- 2.15.1. The investigating officer who is charged with playing the speech samples to the witness and who will also question the witness afterwards should not know the voices of the suspect and the foils. In order to check that this is indeed the case, the lineup must first be played to the investigating officer.
- 2.15.2. Before being played the voice lineup the witness must read the text entitled *Information for witnesses* (See 3.1 below).
- 2.15.3. The witness should be able to listen to the recordings in a quiet environment. To avoid any influence there should be no one else present in the room except the investigating officer charged with the administration of the test.
- It is conceivable that an approximation of the circumstances in which the witness/victim heard the voice of the perpetrator might facilitate recognition. If there are indications that this might be the case, the feasibility of this approach should be looked into.
- 2.15.4. If the witness explicitly states that he/she wishes to be accompanied by someone he/she trusts or if the services of an interpreter are required, this person/interpreter should take up a position in which he/she cannot be seen by the witness and should refrain from any audible reactions.
- 2.15.5. The lineup is played once only. However, it is possible to play one or more voices again at the request of the witness. This is easy to do if the lineup is recorded on DAT or CD.
- 2.15.6. The witness may in no way be put under any pressure to pick out a particular voice. The officer concerned must not:
- give any indication of the importance of the lineup;
  - make any comments or encouraging remarks;
  - put any emphasis in any way on a particular voice;
  - indicate how many voices the lineup contains.
- 2.15.7. The investigating officer responsible for the witness must observe any verbal and non-verbal reactions of the witness while the voices are being played - especially in so far as these may reflect doubt or emotion - and should take careful note of the time which elapses between hearing the voice and the moment of recognition). For this purpose he should take up a position which allows him to do so.
- 2.15.8. If others (the officer in charge of the identification procedure, the examining judge, the public prosecutor, defense counsel) have professional reasons for wishing to observe the reactions of the witness, a control room will be necessary from where the identification room can be observed by means of a two-way mirror or video system.
- 2.15.9. The police officer in charge of the procedure should draw up an official report describing the method of operation applied throughout the procedure. Copies of the texts given to the witness and the test listeners must be appended to this report.
- 2.15.10. The investigating officer responsible for assisting and examining the witness should also draw up an official report including:
- the method of operation used to play the lineup;
  - a verbatim account of the witness's words regarding identification or non-identification;
  - the verbal and non-verbal reactions of the witness;
  - the witness's answer to the question whether he has heard the suspect's voice since the incident;
  - the witness's answer to the question whether he recognized any of the voices as that of a person unconnected with the incident.
- 2.15.11. After completion of the procedure, a digital copy of the lineup should be sealed and stored in a safe place so that it is available for post-hoc analysis.
- 2.16. More than one witness**
- If there is more than one witness, the following rules apply:
- 2.16.1. Witnesses must they must be kept apart before and during the identification procedure.
- 2.16.2. Witnesses must not be informed of the results of previous procedures.
- 2.16.3. Each witness must be assisted and examined by a separate investigating officer who does not know the suspect or the foils in the lineup and has not been involved in previous identification procedures in the same case.
- 2.16.4. A separate selection must be made for each witness. This means that a separate cassette or CD must be produced on which the voice of the suspect and of some of the foils occurs in a different order and is preceded by a different serial number. Each selection must bear a unique identifying letter.

- 2.16.5. Different test listeners must be used for each witness unless there are no differences between the witnesses as regards their language background, sex and the description they have given of the perpetrator's speech.  
During the procedure the test listeners may have no contact with each other, the officers responsible for the witnesses, the witnesses or any interpreters or accompanying persons.
- 2.16.6. The witnesses must be told that they may not express any opinion on the outcome of the procedure if it is possible for contact to take place between witnesses or accompanying persons between procedures (as may be the case if the witnesses are not all of them available at the same time).
- 2.16.7. The witnesses, test listeners and any accompanying persons or interpreters must be made aware of their duty to preserve absolute secrecy.
- 2.16.8. The second and subsequent witnesses must be asked if they have had any contact with witnesses (or accompanying persons) involved at an earlier stage of the procedure and if so what information they received. Their answers must be recorded in the official report.

### 3. INFORMATION FOR WITNESSES AND TEST LISTENERS

#### 3.1. Information for witnesses in voice lineup procedures

Before listening to the actual lineup, the witness will be asked to read the following text:

*You have been witness to or victim of a crime. You have been interviewed by the police and you have told them that at the time of the incident you heard the voice of a person who was involved in that crime. In the course of the following police investigation a person has been found who may have committed this crime. However, this is by no means certain.*

*A recording has been made of this person's voice. In addition to this, recordings have been made of a number of people with similar voices. These persons are called foils. These foils are **not** suspected of having committed the crime.*

*You are about to listen to the recorded voices. However, the first voice you will hear is that of a test speaker. This will give you some idea of what to expect.*

*The voices are recorded on (digital) audiotape or CD. Each voice is preceded by a serial number.*

*If you recognize the voice of the person you heard at the time of the incident, you should inform the police officer who is playing the voices to you **at once**. If you have heard only a few voices at this point, you will be asked listen to some more voices.*

*The following points are important for you to bear in mind:*

- *The police officer who is playing the lineup for you does not know the persons whose voices he is playing. He does not know who is suspected of the crime.*
- *If there is someone in the lineup whom you happen to know, you should inform the officer who is playing the voices to you.*
- *The sound quality of the different recordings may vary; the same applies to **what** the speakers say. However, this is not important.*

*Try to ignore these differences.*

- *It is not necessarily easy to recognize a person's voice, even if you may have said or thought that you would be able to do so.*
- *If you have doubts about whether you recognize a person, you should not point out anyone.*
- *There is a chance that the person whom you have in mind is **not** included in the selection.*

*If you have any further questions, you should ask them now.*

#### 3.2. Information for test listeners in voice lineup procedures

Before being asked to listen to the actual lineup, the test listener will be asked to read a text which is partly identical with that for the witness/victim. In the version below these more or less identical parts have been omitted:

*Some time ago a crime was committed. You have already been told about the nature of the crime. A witness/victim heard the voice of a person during the incident who may have been involved. The witness has given a description of this person's voice. [...]*

*The witness will be asked to listen to the voice lineup. Before this happens, we would like to know if we have made an acceptable, objective selection. We will therefore first read aloud to you the witness's description of the voice of the person concerned and then play the recorded voices to you.*

*We would ask you to listen carefully to the voices. Our question to you is to indicate whether you have any reason to pick out one or more of the voices in the lineup because they stand out from the rest. Please note that if you have no reason for doing so, you must not pick out anyone!*

*If you do have reason to select a voice you must say so when you have heard all the voices. You will be given pen and paper to make notes while you are listening. [...]*

#### NOTES

1. However, Melara et al. [5] found that adding an auditory identification to a visual identification increases the chance of a correct identification without increasing the number of false positives.
2. A model text is available from the first author.
3. If these verbatim utterances are (likely to be) perceived as threatening by the witness or the suspect, or are otherwise deemed prejudicial to the exercise, they are better omitted. The use of this type of material is fraught with difficulty anyway [2, 4].

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