



**REPORT**  
**Prepared for**

**KNOOPS & PARTNERS**

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In the case of Ernest Louwes

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**Lab Ref:** 300510164/400587573

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## REPORT

I hold a Bachelor of Science honours degree in Genetics and a Master of Science Degree in Toxicology.

I have been employed as a Forensic Scientist at the Huntingdon Laboratory of the Forensic Science Service since 1998 where my area of expertise is in the examination of biological evidence including the interpretation of Blood Patterns and the interpretation of DNA profiling results including Low Copy Number DNA profiling.

I am also a Registered Forensic Practitioner in the field of Human Contact Traces.

References: The laboratory reference number for this case is 3000510164.

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## Facts of the case

From the information provided to me I understand that on the 25<sup>th</sup> September 1999 Mrs JIEG Wittenberg-Willemen was found dead at her home address in Deventer. I understand that a post-mortem concluded that she had been killed by strangulation and/or stabbing with a sharp object causing five wounds to her chest. I also understand that the exact date of Mrs Wittenberg-Willemen's death is uncertain but the police believe it was on the 23<sup>rd</sup> September 1999.

I understand that Mr Ernest Louwes has been convicted of her murder but that he has always maintained his innocence. I understand that Mr Louwes had a meeting with Mrs Wittenberg-Willemen on the 23<sup>rd</sup> September 1999 at her address.

I understand that it is assumed that the blouse S12 was that worn by Mrs Wittenberg-Willemen at the time of her death.

In preparing this report I have been supplied with the following documents:

1. an overview of the relevant facts of the case and the history of the judicial proceedings, drawn up by the instructing solicitors
2. the report of the Netherlands Forensic Institute date 5<sup>th</sup> December 2003 (translated into English)
3. the report of the Netherlands Forensic Institute dated 19<sup>th</sup> January 2004 (translated into English)
4. the report of the Netherlands Forensic Institute dated 22<sup>nd</sup> January 2004

5. the witness statements of the scientists from the Netherlands Forensic Institute, Ing. R. Eikelenboom and Dr A Kloosterman, and the defence witness, Prof. Dr. De Knijff, which they gave before the Court of Appeal.
6. a report of the Netherlands Forensic Institute dated 22<sup>nd</sup> January 2004 with colour photographs
7. A set of DNA results from the Dutch Forensic Institute
8. a CD containing photographs of the blouse from the Netherlands Forensic Institute
9. Letter from Mr Toorenbeek dated 16<sup>th</sup> August 2005
10. questionnaire

This is the information upon which I have based my review of the forensic evidence in this case. If this information is incorrect or changes then I may need to review my interpretations and conclusions.

#### **Review of the blouse S 12 relating to Mrs Wittenberg-Willemen**

From the photographs and statements available to me I understand that during the examination of the blouse it was noted that:

1. the blouse was bloodstained and that the majority of this bloodstaining could be explained by the injuries sustained by Mrs Wittenberg-Willemen
2. there was a bloodstain present on the back of the collar which was inconsistent with the rest of the blood pattern,

3. several areas of the blouse gave a positive result when tested with a crimelita but that these areas were negative for blood, semen and saliva.
4. several areas of a light red substance, possibly make-up were detected on the blouse, predominantly in areas associated with injuries to Mrs Wittenberg-Willemen.

### **Review of the DNA Results**

I have reviewed the DNA profiling results based on the information provided to me and I agree with the results of the Netherlands Forensic Institute with respect to the attribution of DNA to either Mrs Wittenberg-Willemen and/or Mr Louwes.

However, there are possible additional DNA components not associated with the profiles of either Mrs Wittenberg-Willemen or Mr Louwes present in the profiles obtained from three areas of light red staining- stains 18, 19 and 20. This possible additional component consists of a single additional peak in stains 18 and 19 and two additional peaks in stain 20. However, they are present at a very low level and it is not possible for me to determine whether they actually indicate additional DNA from another source or whether they are just features (artefacts) of the DNA profiling tests.

## Review of the Interpretation of the findings

From the information I understand that the Netherlands Forensic Institute have considered the following alternatives for the findings:

- ❖ the cell material of a male individual was transferred to the blouse S12 via normal, businesslike contact, for example via saliva that was emitted whilst talking or by shaking the victim's hand, whereby the victim's hand then spread the cell material of the male individual over the blouse
  
- ❖ the cell material of a male individual was transferred to the blouse S12 during the criminal offence.

Mr Eikelenboom goes on to explain that the DNA was found in three ways: blood on the collar, crimescope positive areas and in a light red substance (possibly make-up).

Having reviewed all the information and explanations provided I would agree that the above two alternatives are reasonable given the circumstances of the case. The scientific evidence would provide more support for the second alternative than the first.

However, research has indicated that some individuals shed more DNA than others, so called good shedders and poor shedders of DNA. If Mr Louwes was a good shedder of DNA then there is the possibility that he could have shed sufficient DNA to be transferred onto Mrs Wittenberg-Willemen's hands or clothing to account for fact that his DNA was present on the blouse.

However, this would not take into account the fact that his DNA was only detected in areas that were crimescope positive or associated with light red staining. A hypothetical explanation for the presence of this DNA could be that enough DNA from Mr Louwes was present on an item handled by the 'true offender' or another individual to be transferred onto

the offender's/individuals hands and from them onto Mrs Wittenberg-Willemen's blouse. Although there is no real evidence to demonstrate the presence of DNA from a third individual, research has indicated that it is possible to handle items without depositing a demonstrable quantity of DNA and for that reason I cannot exclude the possibility that the DNA within these stains was deposited via a third individual.

Therefore, another possible alternative to be considered is:

- ❖ the cell material from Mr Louwes was transferred as a result of normal businesslike contact between Mr Louwes and Mrs Wittenberg-Willemen but was subsequently transferred to the blouse by either the 'true offender' or by another individual unrelated to the offence.

Also, given the inconsistencies surrounding the packaging and storage of the exhibit another possible alternative that has to be considered is:

- ❖ the cell material from Mr Louwes has been transferred as a result of contamination from other items stained with DNA from Mr Louwes.

In my opinion these alternatives could explain the presence of some of the DNA that could have originated from Mr Louwes. However neither of these alternatives provides a reasonable alternative for the presence of blood that could have originated from Mr Louwes.

#### Mode of securing and storage

During the routine recovery of items for forensic examination the normal procedure would be for the item to be placed into a bag, labelled and sealed and stored appropriately to prevent any accidental contamination or destruction of any evidence. There are cases where the items have not been stored correctly, packaged and as such the integrity of the item cannot be guaranteed. These items can still be examined and any risk taken into account in the interpretation of the findings.

In this case the blouse was not sealed into an exhibit bag; there is therefore the potential for this item to have been contaminated by other case exhibits. I understand that this blouse was stored in an open bag with other items and may have been examined at the same time as other items in this case.

Forensic Laboratories have rigorous procedures in place to ensure that any potential for contamination is minimised and I am sure that a high level of anti-contamination procedures will have been undertaken at the Netherlands Forensic Institute. However as there are discrepancies in the continuity of this item, the potential that this item has been contaminated has to be considered.

If, for example, this blouse was in direct contact with an item that contained a large amount of DNA from Mr Louwes then there is the possibility that DNA from Mr Louwes will have been transferred to the blouse. However, as DNA that could have originated from Mr Louwes was obtained from several areas of the blouse the original item would have had to have been heavily stained with DNA.

Although there is the potential for DNA to be transferred from one item to another, this would not explain the presence of the bloodstain on the back of the collar. In my opinion, if the profile matching Mr Louwes was obtained from the blood stain then this could only have been transferred as a result of contact with wet blood. This stain is therefore unlikely to have been transferred as a result of contamination with an item containing DNA from Mr Louwes.

Further examination could be undertaken with respect to any items stored with the blouse S12 to determine whether there is any DNA from Mr Louwes present and therefore whether these items could have contaminated the blouse. However, it should be noted that the absence of DNA from Mr Louwes on any of these items would significantly strengthen the level of support for the prosecution hypothesis that the DNA was deposited as a result of a violent incident.

### Light red stains and blood traces

From the photographs available to me (part of the report from the Netherlands Forensic Institute dated 22<sup>nd</sup> January 2004) bloodstaining and light red staining can clearly be seen in the photographs. The light red staining is particularly visible around the collar of the blouse. As I have not been provided with any examination notes made in 1999 at the time of the original examination I cannot comment on whether or not the presence of the stains were noted during the examination.

It is not possible to determine when the bloodstaining (stain 10) on the collar of the blouse was deposited. However, from the photographs the bloodstaining does not appear to be dilute, which could indicate that this blood was deposited since the blouse was last washed. However I am unable to state for certain that this is the case.

I have reviewed the results of the DNA profiling tests and I agree with the Netherlands Forensic Institute with respect to the attribution of DNA within the stains recovered from the blouse, namely that Mrs Wittenberg-Willemen and Mr Louwes could both have contributed DNA. Under the assumption that this is Mrs Wittenberg-Willemen's blouse then in my opinion, it is reasonable to assume that her DNA would be present on the blouse. This DNA could be in the form of skin cells, saliva or blood and would be transferred as a result of the fabric being in contact with the skin.

In cases where a mixed profile has been obtained (stains 1, 9, 18-20), when Mrs Wittenberg-Willemen's profile is removed the DNA components remaining match those of Mr Louwes and therefore in my opinion it would be reasonable to assume that Mr Louwes or another person with the same DNA components in their profile as him have contributed DNA to the stains. As it is known that Mr Louwes has been in contact with Mrs Wittenberg in my opinion it is likely that this is his DNA.

The information provided by the Netherlands Forensic Institute indicate that these areas of staining (referred to above) tested negative for blood, semen and saliva. It is therefore not possible to determine what body fluid the DNA that could have originated from Mr Louwes was obtained from. This profile may have arisen from saliva or from skin cells, for example.

As stated previously, the possibility that DNA that could have originated from Mr Louwes was deposited as a result of secondary transfer from another item cannot be excluded but this mechanism of transfer is unlikely to have given rise to the bloodstain that could have originated from Mr Louwes.

In some cases it is possible to determine the action that caused the transfer of material, for example, in cases involving an assault where the victim receives injuries that bleed. In these cases, the nature and distribution of any bloodstaining that could have originated from the victim on the suspect's clothing could assist in determining whether it was deposited as a result of a violent incident, for example, punching or kicking, rather than by simple contact with the victim whilst they were bleeding. If it is not possible to determine what body fluid has given rise to a particular DNA profile, it will not be possible to determine how and when that DNA was deposited. There will be more than one possible explanation for how the DNA came to be deposited on an item including by some innocent means of transfer, for example, by contact with an individual. Therefore I would have to agree with the Netherlands Forensic Institute that the traces of DNA do not constitute direct evidence but that they may have indirect evidential significance as they can indicate that a suspect was present at a scene or has had some form of contact with the victim.

#### Working hypotheses Netherlands Forensic Institute

I understand that Mr Eikelenboom indicated that he was not able to comment on the force with which the bloodstaining was deposited on the blouse; I agree with this comment. As I have not been able to view the item I cannot comment on the likelihood that this bloodstaining (stain 10) has arisen as a result of contact between the blouse and an object

wet with blood rather than the bloodstaining having been deposited as a result of the blouse being in close proximity to a source of airborne blood i.e. this bloodstain is a spot of blood.

From the information provided from the Netherlands Forensic Institute they indicate that this bloodstain did not fit with the general pattern of bloodstaining present on the item and that this stain could have arisen as a result of a minor injury. I would have to disagree with Mr Eikelenboom that if this stain was a spot of blood that there would have to be more than one spot of blood detected. An assault is a dynamic situation during which both the suspect and victim would be moving; it would therefore be possible for more than one spot of blood to be shed but for only one to land in a particular place.

As I cannot determine how this bloodstaining was deposited I cannot comment on whether or not it is likely to have been deposited by the perpetrator. However the fact remains that DNA profiling tests indicate that this blood could have been shed by Mr Louwes and I would not expect this bloodstaining to be present as a result of a business meeting between Mr Louwes and Mrs Wittenberg-Willemen.

With respect to questions 17 and 18, in the photographs there are areas of light red staining to the collar of the blouse which is where I might expect make-up to be transferred from the face/neck. If the remaining areas were of a similar colour then I could not exclude the possibility that the light red staining was in fact make-up. It would not be possible to determine when this make-up staining was deposited except since the item was last washed. Although, if this staining was make-up, you might normally expect to detect make-up on the face. As it would not be possible to determine when the staining on the blouse was deposited, the absence of make-up on the face would not assist/ refute the assertion that this staining was make-up.

### Questions concerning conducting the contra-expertise

Having reviewed the findings in the case in my opinion I would not recommend any further work with respect to the blouse. The Netherlands Forensic Institute have undertaken a detailed examination particularly in relation to whether or not there is any DNA from Mr Louwes present in unstained areas of the blouse and I would agree with their findings. As it is not possible to determine when and how the DNA from Mr Louwes was deposited on the blouse, the analysis of further areas would not assist in exploring this question further.

As any tests on the red substance and/ or make-up would be outside my area of expertise, I have discussed this aspect with colleagues with the relevant expertise. The Forensic Science Service may be able to conduct further analysis on this staining, if there are some areas of the red substance remaining on the blouse untested, and if there is a control sample of Mrs Wittenberg-Willemen's make-up available. However, careful consideration should be given to the significance of any findings as it is not unrealistic for Mrs Wittenberg-Willemen to have traces of her own make-up on her clothing. This further analysis will also not provide any assistance in determining whether or not Mr Louwes was responsible for her death.

### **Comment**

In my opinion, the Netherlands Forensic Institute have undertaken a robust and comprehensive examination of the blouse taking into account information from both the prosecution and defence and reached a reasonable conclusion based on the hypothesis that the DNA matching Mr Louwes associated with the light red staining was deposited as a result of forceful contact.

However, in my opinion, there are no scientific tests available to support or refute this hypothesis in terms of:

- ❖ the degree of force required to deposit sufficient DNA material to be able to discern a DNA profile,
- ❖ whether the male DNA present was deposited at the same time as the light red staining,
- ❖ the significance of the absence of DNA from a male in non-stained areas

Also, there may be other explanations for how the DNA from Mr Louwes was deposited on the blouse and taking these into account the level of support given to the significance of the presence of DNA that could have originated from Mr Louwes on the blouse would be reduced.

However, if it is accepted that the profile matching Mr Louwes obtained from stain 10 was obtained from the bloodstaining present, then in my opinion, it is difficult to explain how this bloodstaining could have been deposited on the back of the collar as a result of innocent contact during a business meeting between Mr Louwes and Ms Wittenberg-Willemen. However as it is not possible to determine when this bloodstaining was deposited I cannot exclude the possibility that it was deposited at some other time unrelated to the offence.

To summarise, I would expect some cell material from Mr Louwes to be transferred to Mrs Wittenberg-Willemen and her clothing worn at the time as a result of normal businesslike contact. However it is not possible to measure the amount of cell material that would be transferred in this way and therefore I cannot determine if this DNA is more likely to have been deposited as a result of violent transfer rather than businesslike contact. However, the presence of blood that could have originated from Mr Louwes on the collar on the blouse is very significant as it is unlikely that this bloodstaining was deposited as a result of normal businesslike contact or as a result of contamination by the blouse being stored with items belonging to Mr Louwes.

Lucinda Patricia Kenny