THE COURT OF APPEAL

Edwards J.
Kennedy J.
Donnelly J.

Record No: CA224/2018

THE PEOPLE AT THE SUIT OF
THE DIRECTOR OF PUBLIC PROSECUTIONS

RESPONDENT

V

ADAM MARLOWE

APPELLANT

JUDGMENT of the Court delivered the 22ndof October 2019 by Mr. Justice Edwards.

Introduction

1. On the 5th of June 2018 the appellant was convicted by the unanimous verdict of a jury in the Dublin Circuit Criminal Court of all three counts on the indictment proffered against him: namely of Count No 1, being the offence of assault causing harm contrary to s.3 of the Non-Fatal Offences Against the Person Act 1997; of Count No 2, being the offence of robbery contrary to s.14 of the Criminal Justice (Theft and Fraud Offences) Act 2001; and of Count No 3, being the offence of aggravated burglary contrary to s. 13 (1) and (3) of the Criminal Justice (Theft and Fraud Offences) Act 2001.

2. Subsequently, on the 6th of July 2018 the appellant was sentenced to imprisonment for three years on Count No 1, imprisonment for eight years on Count No 2 and imprisonment for twelve years on Count No 3, all sentences to run concurrently and to date from the 17th of December 2016.

3. The appellant has now appealed against his conviction only.

The evidence before the jury

4. The trial in this matter lasted four days, with evidence being heard on three of those dates. The key witnesses from the point of view of this appeal were the injured party, Mr Malachy Turley, whose evidence was presented to the jury using the procedure provided for in s.21 of the Criminal Justice Act 1984; Garda Kevin Hynes, a garda who participated in a search at the scene of the crimes and who recovered a piece of physical evidence that was crucial to the prosecution's case against the appellant, and Dr Yvonne O'Dowd, a forensic scientist who examined that physical evidence and recovered DNA material from it which she subsequently subjected to a DNA profiling process which revealed the presence of one complete male DNA profile matching that of the appellant, and two partial DNA profiles which it was not possible to discriminate.

5. Briefly, the uncontroversial circumstances of the case were that Mr Malachy Turley, who was born on the 4th of November 1935, lived alone at the material time in a small cottage on farmland at Kettle's Lane in Drynam, Co Dublin. In the early hours of the 26th of July 2016, Mr Turley was the victim of an aggravated burglary of his home, in the course of which he was also robbed and assaulted by the burglars.

6. As Mr Turley's evidence was in statement form, and as there was no cross-examination because of the procedure used, it is convenient for the purposes of this judgment to simply recite (to the extent relevant) the s.21 statement that was read to the jury:

> *"I, Malachy Turley, with date of birth the 04/11/35 live at Drynam, Kettles Lane, Swords, County Dublin. I have lived at this address since 1952. I live alone and have done so since my mother passed in 1986. The house is a small cottage on farmland that I used to farm up until a few years ago. There is a side entrance that leads into the back of the house where the barn is located. I used this entrance to access the house as the front door is locked permanently and the area is overgrown with trees and shrubs. The barn consists of a workshop, but I don't use it anymore. There is a gate beside the barn which leads to the stables and the land. I allow use of this land to a few people to keep their horses, in return for a hundred euro a month fee. This land isn't used as often since the recession but there is still a handful of people who use it. I don't get many visitors to the house. The postman and the handful of people who use the land are the only frequent visitors. I rarely leave the house these days. Only once a week of a Tuesday, to do my shopping in Dunnes Stores Pavillions Shopping Centre. The last time I left the house was the 26th of July when I did my shop. I didn't go anywhere else. I last went to the bank two months ago. I use Bank of Ireland, Swords, Main Street.*
>
> *On the 28th of July 2016 I remember taking a shower and then going to bed at about 9:30. It had been an ordinary day with nothing unusual or any strange callers. I woke up at 3 am on the 29th of July 2016 for a cup of tea and a slice of apple tart. This would be a regular occurrence for me. I went into the kitchen and had my cup of tea and tart before going back to bed. I usually stay up for about half an hour. So I went back to bed at about 03:30. I am a very heavy sleeper, so I went back to bed and fell asleep straight away. I sleep in the bedroom which is on the left as you come from the sitting room. I heard a noise a short time after getting into bed. I always sleep with the door open, so I looked and seen one person standing in the doorway of my bedroom. I got out my bed and grabbed my walking stick to defend myself. Then, I saw two other people coming into my bedroom. They were all dressed in dark clothing. They all had on balaclavas but not ones made of cloth. It looked like they had made them themselves from a nylon-type material. The three of them were between 5ft 7 and 5ft 9, and fit lads, I think. I saw one of them had a stick or a bat in his hands. Another one was carrying a bat and a small dagger. The blade looked about four inches long. The third person had a firearm in his hand. It looked like a new type gun, not a cowboy gun. I think it was an imitation firearm. It didn't look real. As I grabbed my cane the three people ran at me and pushed the cane out of my hand. They pushed me back onto the bed. I grabbed the bed sheets and covered up. They began screaming at me, 'Where's the safe? Where's the safe?' They kept saying, 'Malachy, where's the safe? We will leave you half the money.' They kept calling me by my name. As they were doing this they kept hitting me with the sticks. I was getting hit by more than one bat and just kept covering up. I went*

unconscious for a moment. I could hear them talking but I felt like I couldn't respond. One leaned right over into my face yelling, 'Show me where the safe is.' I think the other two went out looking around the house. I don't think they used any vile language towards me. The accents sounded like a Dublin accent, but not the Moore Street accent, but like someone from the Dublin suburbs. This lasted for a few minutes. As this person was yelling at me he kept hitting me. I was just lying there taking the beating, not thinking ahead. I was just wishing he would stop. The other two came back into the room and they pulled me from the bed onto the ground. They did this by grabbing hold of the sheet and pulled me using the sheets. I landed on the ground hard and then they threw the mattress down on top of me. I heard them searching the bedroom and pulling the bed apart. My trousers had been beside the bed with my phone, my wallet and my keys in them. I heard them get hold of my keys and walk out of the room. I could hear them outside of my bedroom. I lay under the mattress for about 20 or 30 minutes after I last heard them to make sure they were gone. I got out from under the mattress and put it back on the bed which was difficult because I have a bad hip and need an operation. I use two walking sticks at the moment.

I put the mattress and the sheets back on the bed and I looked for my trousers to find my phone. I couldn't find them, so I went back to bed to try and sleep. I lay awake in bed thinking for a while thinking if I couldn't find my phone and they took my car, then I would be badly stuck. I was worried I would be left in the house alone. I think I fell asleep around 04:00 for a few hours. When I woke up, I went searching again for my trousers. I can't remember feeling any pain at the time, but I think I was in shock. I found all the cards and driving licence which were in my wallet on the sitting room floor. The house had been ransacked with everything thrown on the floor. I searched around and found my wallet. There had been fifty euro in ten euro notes in it which was gone. The whole house looked like it was searched. Two small bags of coin had been taken form the bookshelf. I eventually found my phone, but it was still early, and I didn't want to bother my brother too early. I rang him when it got to 10 am. I spoke to his wife first and then my brother, Fergus. I told him what had happened, and he rang the gardaí. I spoke to the guards a few months later. I showed them a deep cut to my right hand, bruising to my left shoulder and chest, and bad bruising on my right knee. I told them what had happened. At this point I seen the barn door padlock had been opened using my keys, but they were left in the lock on the ground.

An ambulance came a short period later and took me to Beaumont Hospital where I was given five stitches in my right hand and painkillers. I gave the gardaí permission to examine my house and search the area. I did not give any person permission to enter my house to assault me or to take any items from my property. This incident has been very traumatic. I am in a lot of pain now from my injuries. My main concern is that this incident could have been worse and that these people could go on to do this to other people. I don't want anyone else to have to go through this. I allowed people to use my land for their horses in return for a

hundred euro a month. This money was paid the first date when the horses arrived and was due that date each month subsequently. This money was always paid in cash. The last time I was paid was in June when I got paid for three horses. It can be very difficult to get the money at times.

I wish to add that I have viewed a piece of blue latex glove which was seized from my bedroom following a report by me on the 29th of July 2016. I have never seen that piece of glove before. I have never had gloves like that in or near my bedroom. I would have no need for plastic gloves like this in or around the house. I would use heavier gloves for wandering around the house or on my land. This is the first time I have seen a glove like this on my property. There was no sign of this piece of glove or a glove like it in my house prior to the incident I reported on the 29th of July 2016."

7. The jury heard that after the incident had been reported to the gardai, a number of gardai were involved in the investigation that ensued, including Garda Kevin Hynes who, later on the 29th of July 2016, participated in a search of Mr Turley's cottage. Garda Hynes told the jury that he commenced search at 17.15 on that date, accompanied by Garda Thomas Tighe, and at 17.55 he located a small piece of blue material under the bed sheets in the bedroom of Mr Turley. He elaborated on this under cross-examination, using the eighth photograph in a book of photographs introduced by the prosecution, as follows:

Q. JUDGE: Could you just perhaps confirm again which photo you're looking at?

A. This photograph here, Judge.

JUDGE: Very good. Thank you.

Q. MR HENEGHAN: Is that --

A. But yes that was the position of the bed when we went in.

Q. Yes. It wasn't interfered with?

A. No, Judge.

Q. You're certain about that?

A. Well, when we walked into the room that's the position that the bed was in.

Q. And where was this piece of latex found?

A. Judge, it was found --I suppose on top there would be what you'd refer to as the duvet, it was under --

Q. JUDGE: When you are describing it maybe you'd just hold it over to the jury there.

A. This would be the duvet so to speak, bed sheet/duvet, and that would be the underlay sheet. It was found underneath the duvet on top of the underlay sheet on the bed.

8. The jury heard that the piece of blue latex material was placed in an evidence bag, which was appropriately sealed and labelled, and in due course it was delivered to the Forensic Science Laboratory for forensic examination. In cross-examination of Garda Hynes by counsel for the appellant it was put to him, inter alia, that the wearing of a glove prevents the leaving of a fingerprint, and he agreed with that.

9. Dr Yvonne O'Dowd, who examined the physical evidence, and in particular the piece of blue latex recovered by Garda Hynes, told the jury:

> *"Okay. Particularly with reference to the blue latex, exhibit KH1, I examined the I opened the bag in a specific facility we have for examining items in the laboratory. I examined the item. I took a sample of it with a swab and then I generated a DNA profile from this item. I also DNA profiles were generated from the DNA reference samples of Malachy Turley and Adam Marlowe for comparison with any profiles obtained from the blue latex. I obtained a single male DNA profile from the blue latex which matched the reference DNA profile of Adam Marlowe and I estimate the chance of finding this DNA profile, if the DNA had come from someone unrelated to Adam Marlowe, is considerably less than one in a thousand million. In addition to this profile, there were additional DNA elements at a very minor level present. These DNA elements were from more than one source. They didn't affect my interpretation and they were at such a low level it wasn't possible to discriminate them."*

10. Dr O'Dowd stated that there was a significant quantity of DNA on the small piece of latex amounting to 0.04 nanograms per microlitre, in circumstances where the maximum that would be used in the DNA profiling process was one nanogram per microlitre. She went on to say:

> *"Over 93 % of this contribution came from one individual. This was very clear from the end result of the profiling process and that contribution matched the reference DNA profile of Adam Marlowe. The additional minor DNA elements were made up of less than 7 % coming from at least two people. So they were at such a low level it wasn't possible to put any significance on them."*

11. Dr O'Dowd was cross-examined by counsel for the appellant. The cross-examination commenced as follows:

> *"Q. Just in respect of the piece of latex, it seems to be in the shape of a fingertip, would that be*
>
> *A. It looked like a fingertip pulled off the top of a glove. I often five days a week I wear gloves in work so as not to contaminate exhibits from myself*

and I change gloves between exhibits so that I don't cause contamination between exhibits, that's standard practice in a Forensic Science Laboratory. So, gloves are coming on and off all day. Sometimes they come off in a hurry. It wouldn't be unusual for you to tear them when you pull them off. So, when I saw this to me that looked like a glove.

Q. It looks like the tip of

A. It looks like the tip of a glove, yes.

Q. The tip of a glove. Did you can you tell when you obtained the samples from the tip, if we call it the glove tip, was it from the inside or outside?

A. It was from the inside.

Q. Inside?

A. Yes.

Q. And did you you took a swab; isn't that correct?

A. That's correct.

Q. And did you swab the entire

A. The entire inside of the latex.

Q. Did you swab the outside?

A. No.

Q. And is there any reason for that?

A. I was looking for the wearer of the glove.

Q. Yes.

A. And you're more likely to find the wearer of the glove on the inside then on the outside.

Q. And in terms of the tip of the glove, it's a tip?

A. That's right.

Q. If you cut a glove, if you just were to slice the top of a glove, is it reversible?

A. It is reversible.

Q. So how do you know which is inside and which is outside?

A. Because if you pull the top of this glove you'll be able to tell from me wearing it which is inside and which is outside, it's quite warm. When we get warm sometimes we leave staining on the inside of the glove, particularly when the temperatures are hot or if people are involved in activity which would cause them to heat up and it can leave staining on the inside of the glove and I observed staining on what I believed to be the inside of this

Q. What you believed to be the inside?

A. Yes.

Q. But you can't be certain it was the inside?

A. Well, the outside was quite clean.

Q. Yes. But you can't be certain; is that right?

A. It is my

Q. Because it's reversible. Once it's cut it's reversible; isn't that right?

A. It is reversible, yes.

Q. So you can't be sure whether it's inside or outside?

A. In my opinion it's more likely to have been the inside."

12. The witness stated that she could not say when the DNA was deposited on the glove, and agreed with counsel that it could have been there for weeks, months or years. She stated that whether or not DNA will persist on an item depends on the conditions under which it is stored. The cross-examination then continued:

"Q. So, we just don't know and we'll never know when that DNA was deposited on that glove?

A. It was likely to be deposited when it was worn.

Q. When it was worn but we don't know when it was worn?

A. Yes. We don't know when it was worn, no."

13. When asked about the possible mechanisms by means of which DNA can be transferred to a surface, the witness stated:

"There are a number of variables which determine whether DNA will or will not transfer to a surface, particularly when touched. It would depend on how much friction there was, on how long there was contact and on what we call the shedder status of the person we would be touching. Some people don't shed a lot of cells, others do. If you consider people with dandruff, they shed a lot of cells. You'll get

a DNA profile from someone like that. So, if a surface is touched there may or may not be transfer of DNA."

14. This was the prelude to the following exchanges on which the cross-examination concluded:

> *"Q. Yes. And in respect of the sample you analysed, you found Mr Marlowe's DNA without doubt?*
>
> *A. I found a DNA profile which matched Mr Marlowe's reference DNA profile.*
>
> *Q. And that's without doubt. But there was also two at least two other traces from other people; is that right?*
>
> *A. That's correct, yes.*
>
> *Q. And in terms of you can't determine when those other sources were deposited on the glove also; isn't that right?*
>
> *A. No, you can't.*
>
> *Q. You can't. So, you don't know which was first or last or second or third or*
>
> *A. We know from studies that have been done and from experience in the lab that if an item is worn the person who wears it is the person who is going to come through the most as the major contributor.*
>
> *Q. But you don't know when the others were deposited?*
>
> *A. No.*
>
> *Q. Or you don't know when Mr Marlowe's DNA was deposited?*
>
> *A. No.*
>
> *Q. qThank you very much."*

15. Dr O'Dowd was not re-examined.

The Application for a Direction

16. Counsel for the defence applied for a direction at the close of the prosecution's case. In doing so, he relied on the first limb of the test in R. v Galbraith, namely that there was insufficient evidence connecting the appellant to the crime to allow the case to go to the jury. Specifically, he contended, the prosecution could not prove when the accused's DNA (which it was accepted was on the piece of glove recovered at the crime scene) had been deposited, nor could they say when the other two contributors' DNA had been deposited on the glove. Moreover, only one side of the latex piece, which the forensic scientist believed to have been the inside, was swabbed, but the evidence had been that, once cut, a fingertip of the glove type concerned was reversible. Accordingly, he contended, the

evidence did not exclude the possibility that the DNA found, the major component of which it was conceded was that of his client, had in fact been on the outside of the fingertip and that it could therefore have been deposited other than somebody wearing the glove to which the latex fingertip belonged in the course of the commission of the crime. In substance, his contention was that there was insufficient evidence to connect his client with the crime. He concluded:

> *"I say it can't go to the jury because the jury would be being asked to speculate on two matters; 1) when was DNA deposited, in what sequence, who was the last person to wear the glove and 2) they'd have to speculate as to how the glove got into the house in the first place. There's no evidence that it was left by any of the raiders at all in circumstances, although Mr Turley I think his name is, Mr Turley in his evidence said he didn't have gloves like that in the house or never had gloves like that in the house, there's still no evidence that any of the persons in the house that night were wearing gloves. He doesn't indicate at all that any of the persons who went into his house were wearing gloves. That's my point, Judge, effectively that, you know, you are asking the jury to speculate."*

17. In those circumstances, and relying on two fairly recent decisions of the superior courts as ostensibly providing support for his submission, namely that of the Court of Criminal Appeal in *The People (Director of Public Prosecutions) v. O'Callaghan* [2013] IECCA 46, and that of the Supreme Court in *The People (Director of Public Prosecutions) v. Wilson* [2017] IESC 54, he contended that no properly charged jury could be satisfied beyond reasonable doubt of the guilt of his client. In that regard, he stated, *inter alia*:

> *"The jury would have to have a reasonable doubt. They'd have to. That's why I am seeking the direction because they'd have to have a reasonable doubt. They cannot for certain say. If there was only one person's DNA I would still be saying that this case is flimsy for other reasons but there's no other evidence in the case. There's absolutely no other evidence in the case and there is a possibility of two other persons or at least two other persons having touched that glove or worn that glove after Mr Marlowe had contact with it. That is a real possibility. It is a genuine possibility. It's a real possibility and I say to allow that to go to the jury is dangerous …"*

18. The application for a direction was opposed by counsel for the prosecution, who argued that there was in fact enough evidence to allow the matter to proceed to the jury.

19. Having heard both sides the trial judge refused to grant the direction sought, ruling as follows:

> *"JUDGE: All right. Well, I am satisfied from the evidence which was given by Dr O'Dowd and the percentage of DNA that was found being at a very, very high level, that of 93 %, and the remaining 7 % having been shared by two unidentified persons and the level of DNA not being sufficient from which to extract a profile, I am satisfied that the percentage is sufficiently high and the methodology used by*

Dr O'Dowd which was directed towards establishing the wearer of the glove and the evidence which she gave in that regard as to the high probability that the DNA was that of the wearer of the glove due to the high volume which she gave, and she gave a precise figure which I don't have, but she specifically noted that there was a very significant amount of DNA found for the purposes of profiling but it is the circumstances under which this particular fragment of latex which is the most compelling aspect of the evidence because it was in Mr Turley's bed where this particular item was retrieved on the day, albeit at a significantly later stage on the day, of the incident. It was found and there is evidence that Mr Turley was somebody who was not accustomed to having visitors in his house and in my view that is sufficiently compelling evidence which a jury, if properly directed, could convict in relation to each of the offences on the indictment.

Now, it is undoubtedly the case from the O'Callaghan decision and the Wilson decision that the jury will have to be carefully charged in relation to the DNA aspect of the case and those are aspects of my charge which I will have to give careful consideration to based on the guidance that's been given in the Wilson case."

20. Following the refusal of the direction application, the defence elected not to go into evidence.

The Trial Judge's Charge to the Jury

21. Following closing speeches by both prosecution and defence counsel, the trial judge charged the jury. Most of her charge is uncontroversial and does not require to be reviewed. However, as we shall see, one of the appellant's grounds of appeal relates to how she charged the jury in respect of the significance of the physical evidence, specifically the piece of blue latex, and the DNA trace evidence found on that. Accordingly, it is appropriate at this point in our judgment to rehearse the portion of the judges charge relating to these matters.

22. Having reviewed Dr O'Dowd's evidence in detail, the trial judge gave the following instructions, *inter alia*, to the jury:

"So, in this case, before you consider the conclusion you are being invited to draw from the DNA evidence, you must first consider the significance of the latex of the being found in Mr Turley's bed or in his bedroom on the afternoon after these offences were committed. You must consider all rational innocent explanations for the presence of the piece of latex in Mr Turley's bed clothes or in his bedroom on the date these crimes were committed. It is only if you have excluded all rational explanations consistent with innocence for the presence of the latex that you go on to consider the issue of whether you are satisfied beyond a reasonable doubt that the wearer of the glove from which the latex came committed the offences and whether the DNA evidence satisfies you beyond a reasonable doubt that the wearer of the glove was the accused. As DNA does not provide direct proof of guilt it should be treated by you with care and you should be aware of its possible infirmities as you are being invited to draw a highly significant conclusion, a guilty

verdict, from a single piece of evidence. For this reason a degree of circumspection is necessary in assessing this type of evidence and DNA evidence requires to be approached with care. Not only must you be satisfied that the finding of an item with a DNA profile matching that of the accused is consistent with guilt but you must also be satisfied that its presence is inconsistent with any other rational conclusion consistent with innocence.

The prosecution case rests on the comparison of the profiles taken from the latex material and the sample taken from Andrew Marlowe when he was arrested and you have heard that there was a match. The first thing of which you must be satisfied beyond a reasonable doubt is that the piece of latex which was analysed by Dr O'Dowd was the same piece of latex which was covered from the bed clothes of Mr Turley's bed or from his bedroom."

23. After some further elaboration on this requirement, the trial judge continued:

"However, if you are satisfied beyond a reasonable doubt that the latex analysed by Dr O'Dowd was the piece of latex which came from Mr Turley's bed"…"you can then go on to consider what inferences may be drawn from that fact. Just because there is a DNA match you must guard against jumping to an automatic conclusion of guilt. The finding of DNA evidence is not necessarily probative of guilt. You are required to consider the statistical basis which feeds into the conclusion of Dr O'Dowd before you accept it. DNA evidence, while technical and scientific by nature, is not infallible and it is opinion evidence. DNA is based on points of comparison between the population at large and other groups such as siblings or relatives of the person in respect of whom the match is made and there are different levels of probability. Look and examine the DNA evidence in the same way you would consider any other aspect of the evidence and scrutinise it. Consider the probabilities of the DNA being that of someone unrelated to the accused. The probability of the DNA being that of someone unrelated to the accused was stated by Dr O'Dowd to be considerably less than one in one thousand million. There was a large amount of DNA extracted and a full profile matching that of the accused was obtained. In reality it is accepted in this case that the probability of the DNA being that of someone other than the accused is extremely remote indeed. Less remote however is the possibility raised that one or other of the other sources of DNA of unknown origin found on the latex glove was the DNA of the wearer of the glove during the commission of the offences. Over 93 % of the DNA found on the latex tip matched that of the accused. However, there is a further amount which was said to be less than 7 % from two or more unknown contributors. That is evidence from which it can be inferred that at least two other unknown persons had sufficient contact with the inside of the tip of the glove to collectively account for less than 7 % of the DNA extracted. Does that percentage of DNA from the other unidentified sources cause you a reasonable doubt as to the wearer of the glove? If it does you must acquit. Even if you are not convinced that the wearer of the glove found was one of the other unidentified sources of DNA but

if that might reasonably be possible you must acquit. Because it is accepted that there is no other evidence against the accused and because the other sources of the 7 % of the DNA extracted remain unidentified and because the particle which was found represents only a very small of the entire glove you must be especially cautious before relying on the DNA evidence before convicting.

The other significant aspect of the DNA evidence is that Dr O'Dowd cannot say when the DNA was deposited. All the DNA match tells you is that the glove was worn by the accused at some stage. However, Dr O'Dowd's evidence is that from studies and from experience in the lab if an article is worn the person who wears it is the person who is going to come through as the most major contributor. In considering this aspect of the case you are at liberty to consider the nature of the item involved by reference to your own knowledge and experience or indeed your own use of latex gloves. You are entitled to consider issues such as their durability and the disposable nature of latex gloves and the purposes for which latex gloves are used and how they are used. You are entitled to legitimately consider whether a disposable glove is an item which, by its nature, is one which is worn and reworn by multiple persons at different times.

You must also consider the evidence as to the methodology used by Dr O'Dowd in confining her examination to what she considered to be the inside of the glove. Although she could not say as a matter of certainty that it was the inside of the glove, she expressed a high level of confidence that it was. However, you must ask yourselves are you satisfied beyond a reasonable doubt that she was correct in that evidence, that it was the inside of the tip of the glove which she examined. Are you satisfied that confining her examination to the inside of the glove was the correct and reasonable approach to take in seeking to establish the wearer of the glove? If you have any doubts in relation to the completeness or the reliability of the process followed by Dr O'Dowd you must resolve these doubts in favour of the accused and acquit.

DNA evidence does not exist alone and must be considered in conjunction with the other evidence in the case as to how the offences were committed and evidence regarding the number of people who were likely to have been in Mr Turley's bed or bedroom in or around the date of the offences. Mr Heneghan has criticised aspects of the investigation … ."

"If any aspect of the investigation causes you to have reservations of a serious nature in relation to any aspect of the evidence the accused must be given the benefit of the doubt and you should acquit."

24. Then, having summarised both the prosecution and defence cases, respectively, the trial judge added:

"Now, in relation to your verdicts, you may only convict the accused of these offences if, having considered the DNA evidence, in conjunction with the other

evidence in the case, you reach a point where you consider that the percentage of the DNA which is a match for the accused is so high as to exclude the reasonable possibility that someone other than the accused was wearing the glove during the commission of these offences. However, if the size of the particle or the fragment or if the fact that less than 7 % from at least two unidentified sources causes you a reasonable doubt you must acquit."

The Grounds of Appeal

25. The appellant relies upon four grounds of appeal, as follows:

(i). The trial judge erred in law and in fact in refusing the application made on behalf of the appellant at the close of the prosecution case to withdraw the case from the jury and direct the acquittal of the appellant;

(ii). The trial judge erred in law and in fact in her assessment of the weight to be attached to the forensic evidence (DNA) in the case, such forensic evidence being the only evidence in the case tending to implicate the appellant in the commission of the offenses charged;

(iii). The trial judge erred in her directions to the jury as to the manner in which they should consider the forensic evidence (DNA) in the case and, in particular, erred in her directions to the jury as to the interpretation of the 'mixed profile'DNA sample in the case;

(iv). The verdict of the jury is perverse and against the weight of the evidence and, accordingly, the conviction of the appellant is unsafe.

Ground of Appeal No's (i) and (ii) – the failure to grant a direction, and the weight attributed to the forensic evidence by the trial judge in considering that application.

26. Grounds no's (i) and (ii) are in truth interrelated and for convenience may be dealt with together.

27. In his submissions to this Court, both written and oral, counsel for the appellant has again sought to place great reliance on the judgments in *The People (Director of Public Prosecutions) v. O'Callaghan* [2013] IECCA 46, and in *The People (Director of Public Prosecutions) v. Wilson* [2017] IESC 54, respectively.

28. *O'Callaghan's* case involved a scenario in which there was an armed robbery of a Post Office by two men wearing balaclavas. They had made their getaway by initially running for a short distance along the street outside the Post Office before being intercepted by, and getting into, a car driven by an accomplice, which had clearly been prepositioned to await their emergence, and which then drove away from the scene at speed. However, as the two men wearing balaclavas had been running along the street they were observed by an eye-witness who noticed one of the men remove his balaclava and discard it on an adjacent canal bank. The witness later pointed out this balaclava to Gardai who took possession of it. Subsequent forensic analysis revealed that it was a homemade balaclava fashioned from the sleeve of a woollen garment, and mixed DNA trace material was found

on it that was said to come from more than two people. The mixture was said to be comprised of a major component which matched the DNA profile of the accused Mr O'Callaghan, and a minor component. The chance that an unrelated person chosen at random would have the same DNA profile was estimated at *"considerably less than one in one thousand million"*. The State's forensic expert conceded at trial that it was not possible to say when any of the persons who had been the source of DNA material found on the balaclava had come in contact with the balaclava or with the sleeve. She had added *"The only thing we say is that, more than likely, this – they've been deposited since the sleeve had been washed."* However there was no evidence whatever as to any washing of the item, or of any possible donor garment. The only evidence before the court of trial relied upon by the State as tending to connect Mr O'Callaghan to the Post Office robbery was the fact that his DNA had been found on the discarded balaclava.

29. Although Mr O'Callaghan was convicted at first instance, the Court of Criminal Appeal allowed his appeal, concluding that the only evidential value of the forensic evidence was in establishing that he could have been one of three people who had been in contact with the balaclava or sleeve at some unknown point but probably since it was last washed. There was nothing in the forensic evidence which would entitle the jury to differentiate between the various persons who had been in contact at some point with the balaclava material for the purpose of determining which one of them was wearing it at the time the robbery was committed. Accordingly, the court was satisfied that there was no evidence on which a jury properly directed could rationally find beyond reasonable doubt that one of those persons rather than another was the person who was wearing it at the time of the robbery.

30. The *Wilson* case, which was also relied upon, had concerned a murder perpetrated by a lone gunman. In a superficial similarity with the O'Callaghan case, the perpetrator of the crime had also been observed discarding clothing and other items as he made his getaway. Amongst these items were a revolver, a cotton glove, a baseball cap and a hoodie, all of which we recovered by gardai in the subsequent investigation. On forensic examination these were found to bear trace material, including firearms residue and DNA material. DNA analysis succeeded in generating a full male DNA profile from the cotton glove, and mixed DNA profiles from the baseball cap and hoodie. In the case of the mixed profiles, although there was DNA present from more than one person, the major profile, in the case of both items, matched that found on the cotton glove. DNA present on swabs from the grip of the revolver also matched that on the cotton glove. Mr Wilson was identified as a suspect and was arrested and detained. While in detention he refused to provide a sample of his DNA for reference purposes, to be taken by the normal means of a buccal swab. Although one of the Supreme Court's findings was to the effect that such a sample could have been lawfully taken from him by the use of reasonable force, the Gardai in fact obtained the required reference sample by the alternative means of collecting cigarette butts discarded by the suspect. When a DNA profile was generated from the trace material on the discarded cigarette butts, it matched the major profile that had been found on the items discarded by the fleeing gunman.

31. Mr Wilson was charged, tried and convicted of murder in circumstances where, although there were three acknowledged strands to the prosecution's case, the crucial evidence against him tending to link him to the shooting was the DNA evidence. He appealed unsuccessfully, but the Court of Criminal Appeal certified a question for the Supreme Court, namely *"Is evidence of DNA samples taken from cigarette butts used and discarded by the detained person whilst in custody admissible evidence at trial."* While the Supreme Court addressed this question, and answered it in the affirmative, they allowed other issues to be raised and dealt with them. These included an additional question framed in terms *"When the sole evidence against an accused person is DNA evidence, is such sufficient to convict an accused or upon the prosecution case being closed, should a judge withdraw a case from the jury upon an application of the defence that there was no case to answer?"*; as well as contentions that Mr Wilson's constitutional right to privacy had been breached by the manner in which the reference sample had been obtained from him.

32. While the additional question just referred to was answered in the negative, and the Supreme Court stated *"[t]here is no reason in principle why a jury may not be satisfied to the criminal standard of the identity of the perpetrator of a crime where the only evidence of such identity derives from DNA profiling"*, they added the following caveat:

> "However, we make clear that, in our view, it is necessary that the evidence concerning the obtaining of a DNA profile from a crime scene, the probative connection between the presence of the DNA at a crime scene and participation in the crime as charged, the preservation, analysis and comparison of any DNA found at the crime scene with any DNA which can be established to be that of the accused together with evidence concerning the likelihood that the DNA of the perpetrator might not, despite a match, be that of the accused, must be sufficiently robust to warrant it being possible for the jury properly to conclude that proof beyond reasonable doubt has been established. Where such evidence is insufficiently robust to that end it is, of course, appropriate for the trial judge to direct the jury to acquit."

33. For completeness, we should add that the Supreme Court also took the opportunity to promulgate certain guidance for the benefit of trial judges concerning the directions that ought to be given to juries in relation to DNA evidence. Ultimately, however, Mr Wilson was unsuccessful in sustaining any of the issues that he had raised before the Supreme Court.

34. Counsel for the appellant in the present case, referring to the Wilson case in the first instance, relied in particular on the following passages from the joint judgment of Clarke J, Dunne J and O'Malley J (with which Denham C.J. and O'Donnell J concurred) dealing with the contention put forward on behalf of Mr. Wilson to the effect that DNA evidence, without more, and no matter what the statistical probabilities, cannot be sufficient to establish proof beyond reasonable doubt:

"5.2 It is perhaps appropriate to start by taking a more general view of the circumstances in which DNA evidence can be proffered as evidence of guilt. The following analysis, which identifies three significant elements of the evidential chain, is not intended to be exhaustive for there will undoubtedly be unusual cases where different variations on that analysis may require to be considered.

5.3 The first issue concerns the potential connection between a DNA sample found at what one might loosely call a crime scene and the potential guilt of the accused. The term "crime scene" is used loosely for it may involve the actual scene of the alleged crime but also may involve some other location where there is evidence of a connection with the crime. DNA may, for example, be found in a car which can be associated with a crime.

5.4 For the purposes of this aspect of the analysis it is appropriate to assume, but for the purposes of the argument only, that it can be shown that the DNA found in a particular location is in fact DNA which comes from the accused. But even if that is so to what extent can it be said that this tends to establish the guilt of the accused? Here there may be a range of circumstances stretching from those where there is a very high likelihood that the DNA found at a particular aspect of the crime scene must be that of the perpetrator of a crime to those which only demonstrate, at least in and of themselves, a tangential connection. For example, the sole DNA found on a murder weapon where there was evidence that the accused was not wearing a glove and used his or her hands to deploy the weapon concerned falls into a very different category from the finding of DNA on, for example, a cigarette butt located at the scene of a crime but where there is no direct evidence that the perpetrator discarded a cigarette at the time of the crime and no evidence to suggest that the cigarette butt on which the relevant DNA sample was found was necessarily discarded in the course of the commission of the relevant crime and by a participant in that crime. Doubtless a whole range of intermediate examples could be given where the connection between the relevant DNA sample and the identity of the perpetrator of the crime might be established to a greater or lesser degree.

5.5 In passing it is appropriate to emphasise that the Court is not here concerned with the admissibility of such evidence. Clearly even evidence of a tangential connection may be relevant in the overall context of a particular case but would be unlikely to provide sufficient evidence, without more, to allow for a safe conviction. The extent to which the DNA evidence concerned provides evidence of guilt will depend on all the circumstances of the case. It follows that there will undoubtedly be cases where, even should it prove possible to establish that the DNA sample concerned is that of the accused, the connection of the DNA sample to the perpetrator, having regard to the circumstances in which the sample concerned was found, may fall short, or, indeed, a long way short, of providing sufficient evidence, certainly in and of itself, to establish guilt.

5.6 However, there may be other cases where there is an inextricable logic in connecting the sample found at the crime scene with the perpetrator. Whether that is so will depend initially on the assessment by the trial judge as to whether the evidence is sufficient to go to the jury and, if so, ultimately on the view which the jury takes.

5.7 It is, however, important to emphasise that the starting point in any analysis of DNA evidence must be an assessment of the extent to which it can be said that the identification of a sample found at a crime scene as potentially that of the accused can, in all the circumstances, be probative of guilt of the offence as charged and in particular, in a case where there is no other evidence, whether that association is capable of establishing proof beyond reasonable doubt."

35. As mentioned already, counsel for the appellant also relies on the earlier O'Callaghan case, which was reviewed in detail by the Supreme Court in the Wilson judgment, and he draws our attention to the fact that the Supreme Court's joint judgment comments in relation to it, at paragraph 8.2 thereof, that:

> "The Court went on to express the view that the evidential value of the DNA in that case was that the appellant could have been one of three people who had been in contact with the balaclava or sleeve at some unknown point but probably since it was last washed. The Court went on to note that there was no forensic evidence which would entitle the jury to differentiate between the various people who had been in contact with the material for the purpose of determining which one of them was wearing it at the time the robbery was committed. On that basis the Court was satisfied that there was no evidence on which a jury properly directed could rationally find beyond reasonable doubt that one of those persons rather than another was the person wearing it at the time of the robbery. Accordingly, the appeal was allowed. *This case highlights the fact that there was a DNA sample relating to the accused person found on a balaclava, the balaclava was found near the crime scene, there was also evidence that other persons had worn the balaclava but there was no evidence to connect the accused person directly with the crime scene. There was, of course, evidence to connect him with the balaclava but that does not mean that he had been wearing it at the particular time when the robbery was committed. Thus, although there was a DNA match, it did not amount to proof of guilt."*
>
> (Counsel for the appellant's emphasis)

36. It has been submitted to us on behalf of the appellant that the DNA evidence connecting him to the piece of blue latex material found at the crime scene went no further than to establish that, at some undetermined point in time, the appellant (or a person with the same DNA profile as the appellant) was in contact with the material, as was any of the other persons whose DNA was found on it. The fact that a lot more DNA from the appellant (or a person with the same DNA profile of the appellant), rather than from the other persons, was found on the piece of blue latex material was not evidence from which

a jury could conclude beyond reasonable doubt that the appellant wore a blue latex glove (or was in contact with the piece of blue latex material) at the time of the robbery. It was urged upon us that nothing in the evidence establishes that the appellant (or a person with the same DNA profile as the appellant) was in contact with the piece of blue latex material at the time the robbery was committed. In fact, there was no evidence that any of the persons who committed the robbery was wearing a glove or gloves, let alone blue latex gloves.

37. Further, in circumstances where there was nothing in the evidence which would permit the jury to differentiate between the various persons who had at some point in time been in contact with the piece of blue latex material for the purpose of determining which one of them was wearing a blue latex glove (or in contact with the piece of blue latex material) at the time the robbery was committed, the trial judge erred in refusing the application to withdraw the case from the jury at the close of the prosecution case.

38. Responding to these submissions, counsel for the respondent contends that the trial judge was correct to allow the case to go to the jury. While accepting that the sole evidence linking the appellant to the crimes was DNA evidence found on the piece of blue latex material, counsel has submitted that other compelling evidence in the case served to heighten the probative nature of this DNA evidence.

39. We were asked to note, in particular, that the piece of blue latex material was located mixed up in the bed sheets of Mr. Turley's bed, where the assault had taken place. In his evidence Mr. Turley recalled being pulled from the bed onto the ground and his attackers *"grabbing hold of the sheet"* and pulling him *"using the sheets"*. Mr. Turley gave evidence to the effect that he didn't have many visitors to his house, that the postman and *"a handful"* of people who use his land were the only frequent visitors. Location maps exhibited during the trial bore out the remoteness and isolation of the location where Mr. Turley resides. When Mr. Turley was shown the piece of blue latex material seized during the search of his home, he confirmed that *"there was no sign of this piece of glove or a glove like it in my house prior to the incident I reported on the 29thof July 2016"*.

40. Moreover, during the course of her evidence, Dr. O'Dowd confirmed that the piece of material she examined looked like the finger tip of a glove. She explained that in her own work she used gloves every day to avoid contamination of exhibits and, although she did not expressly characterise them as such, it was clear that she was speaking of disposable surgical type gloves. In that regard the piece of material in question was an exhibit in the case and a piece of real evidence which the jury was entitled to scrutinise and have regard to. Dr O'Dowd testified to the effect that it was easy to detach a piece when pulling off such gloves. (*"Sometimes they come off in a hurry. It wouldn't be unusual for you to tear them when you pull them off."*) She gave evidence that she examined what she believed to be the inside of the piece of latex in question, which she believed to be from a glove (*"in all probability this was the inside of the glove"*) in an effort to ascertain the wearer of the glove (*"I was looking for the wearer. When you're looking for the wearer you swab the inside"*) and obtained a single male DNA profile. She confirmed that

there was *"a significant amount of DNA on the small piece of latex"* and that 93% of the contribution came from one individual, which contribution matched the reference profile of the appellant. She stated that the *"chance of finding this DNA profile, if the DNA had come from someone unrelated to [the appellant] is considerably less than one in a thousand million"*. Dr. O'Dowd explained that the *"additional minor DNA elements were made up of less than 7% coming from at least two people. So they were at such a low level it wasn't possible to put any significance on them"*.

41. The respondent maintains that in considering the appellant's direction application, the trial judge assessed the evidence as a whole and concluded that there was sufficient evidence in the case to allow matters proceed to the jury. Counsel for the respondent has submitted that she was perfectly entitled to come to this conclusion, in accordance with the principles outlined in *The People (Director of Public Prosecutions) v Wilson*, and that there was no error in fact or in law.

42. Counsel for the respondent has sought to distinguish *The People (Director of Public Prosecutions) v O'Callaghan*. She has submitted that in *O'Callaghan* a DNA sample matching the DNA of the accused had been recovered from a homemade balaclava made from the sleeve of a jumper. The balaclava had been worn by one of two men who robbed a post office. When analysed, the nose/mouth area of the balaclava generated a profile which *"indicated the presence of a mixture; this means that there is DNA from more than two people present. This mixture consisted of a major male component and a minor component."*

43. However, there was nothing in the judgment to indicate that there was evidence in that case as to what was the percentage of the major component of DNA material versus the percentage of the minor component of that material. The present case can be differentiated on the basis that the jury here had received evidence indicating that the major component of DNA recovered from the blue latex material, matching the DNA of the Appellant, represented 93% of the DNA found on the exhibit.

44. Furthermore, it was submitted, the facts of *O'Callaghan* are otherwise distinguishable from the present case when one compares and contrasts the exhibits which were subjected to forensic analysis. Counsel submitted that a balaclava, a robust item of clothing which can be worn over and over, by many individuals, is fundamentally different to a latex glove, which by its very nature is intended for wear by one person on one occasion, to be disposed of thereafter.

Decision

45. We consider that this was a finely balanced case, but ultimately are of the view that the trial judge was correct to allow the case to go to the jury. We have arrived at that view following a careful consideration of the evidence, during which we have focussed in particular on certain subsidiary issues.

46. The first such issue is whether there was evidence on foot of which a jury could be satisfied beyond reasonable doubt that the piece of latex in question, found at the scene

in the aftermath of the crime, was deposited there by one of the perpetrators of the crime. There was certainly evidence on foot of which the jury could be satisfied to the required standard that the piece of blue latex represented the torn off fingertip of a disposable glove. In that regard there was the evidence of Dr O'Dowd concerning her opinion as to the nature of the item she examined, and an explanation of the likely mechanism by means of which it had become detached. The was also the nature of material itself. The piece of latex was real evidence in the case. It was before the jury as an exhibit and it was available to the jury to examine and scrutinise in assessing the reliability and credibility of the opinion offered by Dr O'Dowd as to the nature of the item.

47. There was no specific evidence from Mr Turley to the effect that he had observed the perpetrators, or at least one of them, to be wearing a glove or gloves. While the absence of evidence of any direct observation by the victim of gloves being worn by the perpetrators is certainly something which a jury would have been entitled to take into account, we do not consider the absence of evidence of direct observation to be determinative necessarily of the issue. We carefully considered whether there was circumstantial evidence which, notwithstanding the absence of direct evidence, might have justified the drawing of inference that the perpetrators, or at least one of them, may have been wearing a glove or gloves.

48. In that regard there was evidence that Mr Turley lived alone and had few visitors apart from the Postman and persons who used his land. There was no suggestion that any of these persons had entered his house at any time. His evidence was that *"I have never seen that piece of glove before. I have never had gloves like that in or near my bedroom. I would have no need for plastic gloves like this in or around the house. I would use heavier gloves for wandering around the house or on my land. This is the first time I have seen a glove like this on my property. There was no sign of this piece of glove or a glove like it in my house prior to the incident."*

49. In addition, the location in which the piece of latex was found was a piece of potentially important circumstantial evidence. It was found underneath the duvet and on top of the underlay sheet on Mr Turley's bed. This was against a background of evidence from Mr Turley that the perpetrators had grabbed hold of a sheet with which Mr Turley was covering himself, and pulled him on to the floor, following which they had thrown the mattress down on top of him. There was also evidence that after his assailants had left Mr Turley had put the mattress and the sheets back on the bed, and that he had gone back to bed to try to sleep. The jury had photographs before them, taken by a scene of crime examiner, of how the bedding had been found upon the arrival of the gardai and before it was disturbed for the purposes of the search.

50. We consider that it was open to a jury properly charged and depending on the view they took of the evidence, to have drawn the inference that the piece of latex found at the scene came from a glove being worn by one of the burglars. We are satisfied that the circumstantial evidence, taken at its height, would have permitted the drawing of that inference.

51. Although we did not specifically take it into account in arriving at the conclusion just stated, there was some other evidence that was potentially consistent with, if perhaps not directly supportive of, the suggestion that the burglars, or one of them, might have worn a glove or gloves. There was the evidence from Mr Turley that his house was ransacked and that in the course of that ransacking numerous items of his property were handled by the burglars. Despite this there was no evidence of any fingerprints of interest having been detected in the subsequent scene of crime examination. In that context, the evidence from Garda Hynes that the wearing of a glove prevents the leaving of a fingerprint offers a potential explanation as why a burglar, such as one of Mr Turley's assailants, might have worn a glove or gloves in the course of the burglary. We accept, however, that on its own such evidence could not assist with respect to whether a glove or gloves were in fact worn by the burglars, and for that reason that we excluded it from our consideration.

52. Proceeding on the premise that there was evidence on foot of which the jury could have inferred that the burglars, or at least one of them, wore a glove or gloves, the next subsidiary issue to which we were required to give careful consideration was whether a jury, properly charged, could have regarded the DNA evidence as sufficient to place the appellant at the scene of the crime at the time of its perpetration, and to justify an inference that he was one of the perpetrators. It is uncontroversial that the appellant (or a person sharing his DNA profile although the odds of that were on the evidence exceedingly remote) is linked via DNA trace evidence to the piece of torn latex found at the scene of the crime. If the jury were to accept that the piece of latex came from a glove worn by one of the perpetrators during the commission of the crime, the issue then becomes whether that evidence, taken at its height and combined with the other evidence in the case, goes so far as to allow a jury, properly charged, to conclude beyond reasonable doubt that the appellant was one of those perpetrators.

53. We accept that it does not follow that simply because the appellant's DNA was on a glove believed to have been worn by one of the perpetrators during the commission of the crime, that the appellant was necessarily one of the perpetrators. If that was the high-water mark of the evidence, then it would leave open the possibility that his DNA, and indeed that of the other (unidentified) minor contributors, could have been deposited on another occasion. Moreover, it would not foreclose on the possibility that one of the minor contributors could have been a perpetrator wearing the glove during the commission of the crime, rather than the appellant. If it were the case that the evidence, taken at its height, admitted of the reasonable possibility that the appellant's DNA could have been deposited on the glove on an occasion other than during the commission of the crime, then no jury, properly charged, could convict him, and the case ought properly to have been withdrawn from the jury.

54. Following a careful review of the entire transcript we are satisfied that the evidence in this case went considerably further than merely suggesting that the appellant's DNA was on a glove believed to have been worn by one of the perpetrators during the commission of the crime. The evidence of Dr O'Dowd was to the effect that while there were a number of

contributors to the DNA found, there was a disproportionality in the amount of DNA found. Ninety three per cent of it came from the major contributor, with a profile matching that of the appellant, and the remaining seven per cent came from at least two other people. She stated that *"We know from studies that have been done and from experience in the lab that if an item is worn the person who wears it is the person who is going to come through the most as the major contributor."* In addition, her evidence was that she had observed staining on the portion of the latex piece that she believed to be the inside of the torn off glove fingertip. She explained that when a glove is worn *"sometimes we leave staining on the inside of the glove"* and that she had taken her swab from that area, because *"I was looking for the wearer of the glove."* In our estimation this provided sufficient evidence for a jury, properly charged, to infer, if they were minded to do so, that the appellant's DNA had been deposited on an occasion when he had worn the glove. Counsel for the appellant suggested in his submission to the court below that, even assuming that to be the case, the jury would nonetheless be required *"to speculate on … when was DNA deposited, in what sequence, who was the last person to wear the glove"*. In that regard, however, the jury would be entitled to conclude that the type of glove involved was a disposable type glove intended to be worn only once. Although no witness either expressly characterised the glove as disposable, or referred to it in terms of it being intended only to be worn once, it was implicit in the evidence of Dr O'Dowd, and evident from the piece of material itself which was before the jury as real evidence, that this was the type of glove that Dr O'Dowd was speaking of. Moreover, that this was not in controversy, and indeed that it was the common understanding of all involved in the trial, is evident from the fact that the trial judge, without any objection being raised, and without being subsequently requisitioned in respect of it, said to the jury in the course of her charge that:

> *"Dr O'Dowd's evidence is that from studies and from experience in the lab if an article is worn the person who wears it is the person who is going to come through as the most major contributor. In considering this aspect of the case you are at liberty to consider the nature of the item involved by reference to your own knowledge and experience or indeed your own use of latex gloves. You are entitled to consider issues such as their durability and the disposable nature of latex gloves and the purposes for which latex gloves are used and how they are used. You are entitled to legitimately consider whether a disposable glove is an item which, by its nature, is one which is worn and reworn by multiple persons at different times."*

55. At no point was it suggested that the trial judge had overstated the evidence. It was manifest that the type of glove from which the latex piece was considered to have come was, in Dr O'Dowd's understanding, a disposable type of glove intended to worn only once and then discarded, not dissimilar to those she routinely used in her own work.

56. Based on this, we consider that the respondent is right in suggesting that the facts of this case are materially distinguishable from those which led the Court of Criminal Appeal in the O'Callaghan case to conclude that the evidence did not go so far as to establish when Mr O'Callaghan's DNA, and that of the other minor contributors, had been deposited on

the balaclava, beyond the fact that it was likely to have been deposited at some point since the item, a reference that was not established with any specificity. The balaclava in that case, or the garment from which a sleeve was cut to fashion it, was clearly not intended to worn only once or, necessarily, by just one wearer. In contrast, while the evidence in the present case did not go so far as to suggest that disposable gloves intended to be worn only once could never be worn more than once, the nature of such gloves, and their usual and clearly intended manner of use, was nonetheless a highly material circumstance in the case. It was an important additional circumstance that was not present in the *O'Callaghan* case, and one which the jury were entitled to have regard to as the trial judge rightly suggested they should.

57. In addition, there was no evidence in the *O'Callaghan* case to suggest that the proportions in which the various persons whose DNA was found on the balaclava had contributed was of any potential significance, either in determining whether deposition had occurred in the course of a wearing the item, or if so, in assessing how recently it might have been worn and by whom. On the contrary, the Court of Criminal Appeal had expressly noted that:

> *"35. DNA found on the homemade balaclava, which the other evidence in the trial established had been worn and discarded by one of the two men, was identified by the forensic scientist as matching the DNA profile of the applicant. However, the forensic scientist also established that DNA from two or more other persons was also present on this balaclava. The forensic evidence therefore went no further than establishing that the wearer of the balaclava could have been the applicant, a person with the same DNA profile, or any of these two or more persons. The finding of a lot more DNA matching the DNA profile of the applicant in the nose and mouth area of this homemade balaclava than DNA which did not match that profile was not shown to be evidence from which a jury, properly directed, could conclude beyond reasonable doubt that the applicant rather than one of the others had worn the balaclava after it had been fabricated from the severed sleeve."*

58. In contrast, in the present case, the jury had the evidence of Dr O'Dowd that *"if an item is worn the person who wears it is going to come through as the major contributor"*.

59. We consider that having regard to all of the evidence in the case, including the fact that the DNA had been deposited on a piece of a glove intended to be disposable, and not intended to be worn more than once; the fact that the likely mechanism by means of which the glove fingertip had been detached suggested that it had occurred in the course of being removed by the most recent wearer; the fact that Dr O'Dowd detected visible staining on what she considered to be the inside of the detached glove fingertip; the fact that such staining was in the opinion of the forensic scientist most likely to have been left by the wearer; the fact that this area when swabbed revealed DNA evidence comprising a major male contributor to the extent of 93%, with the remaining 7% from at least two minor contributors whom it wasn't possible to discriminate; and the fact that the forensic scientist had testified that both studies and experience suggested that if an item is worn

the person who wears it is the person who is going to come through as the major contributor; it would have been open to a jury properly charged to conclude by inference that the appellant had not just worn the glove but that he had likely been the only wearer, and certainly had been the most recent wearer, of the glove, and to be satisfied of all of that to the standard of beyond reasonable doubt. The standard of proof, it must be remembered, is proof beyond "reasonable" doubt and not proof beyond any shadow of a doubt however theoretical or fanciful. We are satisfied that on the evidence before the jury the appellant was sufficiently linked to the crime to allow them, if so minded, to justifiably attribute guilt to him, which in fact they did.

60. In relation to ground no (ii) we should add that we have specifically considered the trial judge's ruling on the application for a direction, and indeed all of the exchanges between her and counsel on both sides during the submissions that were made in advance of the delivery of her ruling. We find no evidence that the trial judge attributed inappropriate weight to the forensic evidence, or any aspect thereof.

61. In the circumstances outlined we reject grounds of appeal no's (i) and (ii).

Ground of Appeal No (iii) – the trial judge's charge in relation to the DNA evidence

62. In substance, the complaint here is that the trial judge failed to provide any guidance (because, counsel for the appellant contends, no such guidance could be given) as to how it might be possible for the jury, for the purpose of identifying the wearer of the glove (or person in contact with the piece of blue latex material) at the time of commission of the robbery, to differentiate between the various persons whose DNA was found on the piece of blue latex material. There was simply no evidence on which the jury could rationally conclude beyond reasonable doubt that the appellant, as to any of the other persons, was the wearer of the glove (or in contact with the piece of blue latex material) at the time of commission of the robbery.

63. In the joint judgment in the Supreme Court case of *The People (Director of Public Prosecutions) v Wilson* the judges concerned offered the following guidance to trial judges concerning how they should instruct juries with respect to DNA evidence. They said:

> "8.1 When it comes to giving directions to the jury in relation to DNA evidence, the trial judge should point out that DNA evidence is given by an expert and as such the evidence is opinion evidence. They should be reminded of the approach to be taken by the jury in assessing and weighing expert evidence. The jury should be told that DNA evidence, whilst it is technical and scientific by nature, is not infallible. Depending on the facts of the case it may be necessary to point out to the jury any issues that arise from the circumstances of the case. The fact that a sample of DNA is found at a crime scene which is a match for the DNA profile of the accused is not necessarily probative of the guilt of the accused. For example, one can look at the case of *The People (DPP) v. Michael O'Callaghan* [2013] IECCA 46, a judgment of the Court of Criminal Appeal."

64. Having outlined the facts in the O'Callaghan case the judges went on to say:

> "This case highlights the fact that there was a DNA sample relating to the accused person found on a balaclava, the balaclava was found near the crime scene, there was also evidence that other persons had worn the balaclava but there was no evidence to connect the accused person directly with the crime scene. There was, of course, evidence to connect him with the balaclava but that does not mean that he had been wearing it at the particular time when the robbery was committed. Thus, although there was a DNA match, it did not amount to proof of guilt.
>
> 8.3 Equally if an issue arises as to a particular feature of the DNA evidence in a case concerning the way in which the relevant sample was obtained, maintained, analysed, or compared, the trial judge should explain the issue to the jury and outline the relevant evidence in that regard, from both the prosecution and the defense. This should usually be a straightforward process arising from the evidence. Thus, it may be that an issue arises in relation to the possibility of cross-contamination or an issue may arise as to the quality of the sample of DNA obtained at the crime scene. It is not necessary for a trial judge to advise the jury as to potential difficulties that may arise in some cases if those issues have not in fact arisen in the case at hand. Accordingly, if there is no evidence of contamination of forensic samples or laboratory error there is no need to warn the jury that there may be a risk of inaccuracy in assessing whether the suspect's DNA profile matches the relevant sample despite what was contended in this respect by counsel on behalf of Mr. Wilson. Directions given to the jury should be relevant to the particular case before the Court and to the issues that arise in that case.
>
> 8.4 Perhaps the area of greatest potential for confusion in terms of the instructions to be given to a jury in relation to DNA evidence concerns the statistical analysis which underpins DNA evidence. Care should be taken by the trial judge that the jury are not led into any confusion in relation to the statistics and in particular that the evidence is not presented in such a way as to involve what has been described previously in the course of this judgment as the prosecutor's fallacy."

65. While the Supreme Court had much more to say concerning the type of guidance with respect to statistics, and how to avoid the prosecutor's fallacy, it is not necessary to quote that for the purposes of this judgment in circumstances where the extent and quality of the instructions in relation to such matters does not form part of the appellant's complaint about the specific charge in his case. Rather, the complaint is focussed entirely on aspects of the charge bearing on the necessity for the jury to be satisfied beyond reasonable doubt that the appellant was not just linked by DNA to the piece of blue latex, but also that the presence of his DNA on that piece of latex, taken with other evidence in the case, was sufficient to link him to the crime, particularly in circumstances where other persons' DNA had also been found on that exhibit, where there was no direct evidence that gloves had been worn, and where the forensic scientist could not say with certainty how or when the DNA evidence found, or any component of it, had been deposited.

66. Earlier in this judgment we quoted at length from the trial judge's charge with respect to the forensic evidence, and in particular the DNA evidence. We were impressed by the detail of her remarks and the careful and conscientious way in which she instructed the jury on this issue. She emphasised the importance of excluding all rational explanations for the presence of the piece of latex in Mr Turley's bed or in his bedroom on the afternoon after these offences were committed, and instructed the jury, with admirable clarity, that *"[i]t is only if you have excluded all rational explanations consistent with innocence for the presence of the latex that you go on to consider the issue of whether you are satisfied beyond a reasonable doubt that the wearer of the glove from which the latex came committed the offences and whether the DNA evidence satisfies you beyond a reasonable doubt that the wearer of the glove was the accused."* She added *"As DNA does not provide direct proof of guilt it should be treated by you with care and you should be aware of its possible infirmities as you are being invited to draw a highly significant conclusion, a guilty verdict, from a single piece of evidence. For this reason a degree of circumspection is necessary in assessing this type of evidence and DNA evidence requires to be approached with care. Not only must you be satisfied that the finding of an item with a DNA profile matching that of the accused is consistent with guilt but you must also be satisfied that its presence is inconsistent with any other rational conclusion consistent with innocence."*

67. The trial judge then proceeded to point out each evidential component of the prosecution case about which they were required to be satisfied to the standard of beyond reasonable doubt. She stressed:

> *"Just because there is a DNA match you must guard against jumping to an automatic conclusion of guilt. The finding of DNA evidence is not necessarily probative of guilt. You are required to consider the statistical basis which feeds into the conclusion of Dr O'Dowd before you accept it. DNA evidence, while technical and scientific by nature, is not infallible and it is opinion evidence. DNA is based on points of comparison between the population at large and other groups such as siblings or relatives of the person in respect of whom the match is made and there are different levels of probability. Look and examine the DNA evidence in the same way you would consider any other aspect of the evidence and scrutinise it. Consider the probabilities of the DNA being that of someone unrelated to the accused. The probability of the DNA being that of someone unrelated to the accused was stated by Dr O'Dowd to be considerably less than one in one thousand million. There was a large amount of DNA extracted and a full profile matching that of the accused was obtained. In reality it is accepted in this case that the probability of the DNA being that of someone other than the accused is extremely remote indeed. Less remote however is the possibility raised that one or other of the other sources of DNA of unknown origin found on the latex glove was the DNA of the wearer of the glove during the commission of the offences. Over 93 % of the DNA found on the latex tip matched that of the accused. However, there is a further amount which was said to be less than 7 % from two or more unknown contributors. That is evidence from which it can be inferred that at least two other*

unknown persons had sufficient contact with the inside of the tip of the glove to collectively account for less than 7 % of the DNA extracted. Does that percentage of DNA from the other unidentified sources cause you a reasonable doubt as to the wearer of the glove? If it does you must acquit. Even if you are not convinced that the wearer of the glove found was one of the other unidentified sources of DNA but if that might reasonably be possible you must acquit. Because it is accepted that there is no other evidence against the accused and because the other sources of the 7 % of the DNA extracted remain unidentified and because the particle which was found represents only a very small of the entire glove you must be especially cautious before relying on the DNA evidence before convicting."

68. Further, she gave the jury this additional guidance on the linkage being contended for by the prosecution:

> *"The other significant aspect of the DNA evidence is that Dr O'Dowd cannot say when the DNA was deposited. All the DNA match tells you is that the glove was worn by the accused at some stage. However, Dr O'Dowd's evidence is that from studies and from experience in the lab if an article is worn the person who wears it is the person who is going to come through as the most major contributor. In considering this aspect of the case you are at liberty to consider the nature of the item involved by reference to your own knowledge and experience or indeed your own use of latex gloves. You are entitled to consider issues such as their durability and the disposable nature of latex gloves and the purposes for which latex gloves are used and how they are used. You are entitled to legitimately consider whether a disposable glove is an item which, by its nature, is one which is worn and reworn by multiple persons at different times."*

69. Finally, having dealt with issues relating to methodology and statistics she recapped by saying to the jury:

70. "If any aspect of the investigation causes you to have reservations of a serious nature in relation to any aspect of the evidence the accused must be given the benefit of the doubt and you should acquit."

71. Then, having summarised both the prosecution and defence cases, respectively, the trial judge added:

> "Now, in relation to your verdicts, you may only convict the accused of these offences if, having considered the DNA evidence, in conjunction with the other evidence in the case, you reach a point where you consider that the percentage of the DNA which is a match for the accused is so high as to exclude the reasonable possibility that someone other than the accused was wearing the glove during the commission of these offences. However, if the size of the particle or the fragment or if the fact that less than 7 % from at least two unidentified sources causes you a reasonable doubt you must acquit."

72. We consider that the trial judge's charge was impeccable in terms of the guidance that it offered. It is manifest that a great deal of thought had been given to it and that preparatory work was done. The result was a careful and conscientious charge that communicated clearly to the jury what was required of them, and which would have caused them to focus appropriately on the key issues concerning which they needed to be satisfied before they could convict. The guidance offered was pellucid and to the point, and entirely adequate in our view.

73. We therefore also reject ground of appeal no (iii).

Ground of Appeal No (iv) – The verdict was perverse

74. We consider that, in circumstances where we have already ruled that there was sufficient evidence at the conclusion of the prosecution case to allow the case to proceed to the jury, and no other evidence was offered, the appellant cannot maintain that the verdict was perverse on grounds of lack of evidence. To succeed based on perversity in such circumstances, he would have to have shown the existence of something else, some extrinsic circumstance (e.g., concrete evidence of jury bias), tending to suggest that the verdict was perverse. He has not done so. We cannot therefore uphold the perversity complaint.

75. In the circumstances, ground of appeal no (iv) is also rejected.

Conclusion.

76. In circumstances where we have seen fit to reject each of the appellant's grounds of appeal, the appeal is dismissed.