‘Strands in a cable: DNA reliance in circumstantial cases’

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CLANT Bali Conference
25 June 2019

“If the burglar was not the accused, then the burglar was someone who was wearing the accused’s dirty underpants, and most people prefer to avoid wearing other people’s unwashed underpants…..”

The Queen v King (No 2) **[2016] ACTSC 121 (Murrell CJ at [69])**

DNA circumstantial cases

- Advances in scientific technology now mean we are able to detect ever-smaller quantities of “trace” DNA evidence
- Yet with these improvements, so do the risks of misinterpreting irrelevant DNA (such as background or secondary transfer DNA)
- Empirical evidence confirms that more defendants are being prosecuted based on DNA evidence
- “CSI effect” – impact on jury and increased conviction rates
- This paper focuses on a subset of cases in which the only (or substantive) evidence implicating the accused is DNA evidence

DNA evidence

- DNA evidence is “circumstantial evidence” and can be contrasted with “direct evidence” of what a witness observed at the scene
- DNA evidence relies on an inference to connect it to a conclusion of fact e.g. from the presence of the accused’s DNA on the knife we can infer that they held the knife and used it to stab the victim

Quick overview

1. *Baden-Clay* (starting point for proving a circumstantial case)
2. Secondary transfer, contamination and innocent explanation (potential hypotheses consistent with innocence)
3. Examples of DNA circumstantial cases:
   - *Fitzgerald*
   - *Adams*
   - *King (No 2)*
   - *Wilton*
   - *Donnelly*
   - *Wurramara*
4. Where to from here?

R v Baden-Clay [2016] HCA 35

Baden-Clay

- Leading HCA authority for proving a circumstantial case
- Found guilty of murdering his wife, gave evidence at trial denying involvement
- Conviction overturned in the Qld Court of Appeal – substituted verdict of murder for manslaughter on basis that evidence did not exclude reasonable possibility that he could have killed her without requisite intent
- High Court reinstated original verdict of murder – no evidential basis for “manslaughter hypothesis”, in fact evidence of accused at trial expressly excluded such a hypothesis

Baden-Clay – key principles for proving a circumstantial case

1. Crown is required to exclude all reasonable hypotheses consistent with innocence: [50]

2. For a hypothesis to be reasonable it must rest upon something **more than mere conjecture**. The bare possibility of innocence should not prevent a guilty verdict: [47]

3. All of the circumstances are to be weighed in deciding whether an inference consistent with innocence is reasonably open (not looked at in a piecemeal fashion): [47]

Baden-Clay – key principles for proving a circumstantial case (cont.)

4. Defendant is **not required** to prove that some inference other than guilt should be drawn from the evidence **nor to prove particular facts tending to support such an inference**: [62]

5. Where a defendant with **peculiar knowledge** of the facts **declines** to give evidence, "hypotheses consistent with innocence may cease to be rational or reasonable in the absence of evidence to support them when that evidence, if it exists at all, must be within the knowledge of the accused" (this principle is derived from the earlier decision of *Weissensteiner*): [50]

Weissensteiner v R [1993] HCA 65

- Sits uncomfortably alongside right to silence
- Unusual facts – man found in possession of a boat belonging to 2 people suspected of being murdered (no bodies ever found)
- Trial judge directed jury that as Weissensteiner was the only person who could explain how he innocently came to be in possession of the boat, the jury could more safely infer from his silence that he was implicated in the murders
- Direction upheld by HCA
- *Azzopardi*: only applies in "rare and exceptional cases" and only if "additional facts are known **only to the accused**"

Hypotheses consistent with innocence for DNA circumstantial cases

1. Secondary transfer

2. Contamination

3. Innocent explanation

What do you have to do to raise these hypotheses? Will cross-examining the forensic biologist be enough to raise secondary transfer? Can you raise an innocent explanation without leading direct evidence from your client? Remember *Baden-Clay*: the defence is not required to prove facts to support an inference other than guilt

Key limitations of DNA evidence

1. No reliable method to determine “age” of DNA or **when** it was deposited

2. No reliable method for determining biological **source** of DNA cells (presumptive tests not necessarily conclusive)

3. No reliable method to determine **how** DNA was deposited (i.e. direct transfer or secondary transfer)

Fitzgerald v R [2014] HCA 28

- Leading authority for DNA circumstantial cases & secondary transfer
- DNA match on didgeridoo found at murder scene
- Unclear if DNA came from blood stain (presumptive test indicated presence of blood and visible “reddy-brown” mark)
- Fitzgerald had shaken hands with co-accused (Sumner) at a boxing match in hours before murder
- Forensic biologist could not exclude possibility of secondary transfer
- Found guilty at trial, confirmed by SAFCSC, acquitted by HCA

Fitzgerald

"…. The jury, acting reasonably, should have entertained a reasonable doubt as to the appellant's guilt. Alternative hypotheses consistent with the appellant's innocence, in particular the hypothesis that Sumner transferred the appellant's DNA to the didgeridoo on Sumner's first visit to the house on the day in question, were not unreasonable and the prosecution had not successfully excluded them."

(Hayne, Crennan, Kiefel, Bell and Gageler JJ at [36])

Fitzgerald (DNA from blood?)

“[19] Dr Henry said that even if the abovementioned "reddy-brown stains" were in fact blood (as indicated by a presumptive test), that circumstance ***did not prove that the DNA in Sample 3B derived from blood because the DNA may have been "under the stain****", ie placed on the didgeridoo at an earlier time. She agreed with counsel for the prosecution that the "reddy-brown stains" may have "contributed nothing" to Sample 3B”*

Fitzgerald (key take-aways)

1. Secondary transfer is a legitimate hypothesis consistent with innocence

2. Presumptive test is not necessarily conclusive of biological source of DNA sample

Adams v R [2018] NSWCCA 303

- DNA found on breasts of child complainant
- Complainant made a number of sexual allegations including that the defendant licked and touched her breasts
- Defendant worked at youth shelter where complainant resided
- Evidence that complainant had asked for and handled defendant's mobile phone on the night of the incident
- At trial, acquitted of 3 counts but found guilty of 4th (indecent assault)
- Appealed conviction on basis that jury verdict was unreasonable

Adams (secondary transfer)

*"…**But secondary transfer could not be excluded as a reasonable possibility for the reasons he fully rehearsed**. And there was a proper evidential foundation in the present case supporting the hypothesis of secondary transfer. The complainant had handled the applicant's mobile telephone and other objects touched by him during the night of 29 to 30 January 2013 because it was common ground they had spent time together including at the computer when she got up.* ***Not only was this reasonable hypothesis consistent with innocence not excluded beyond reasonable doubt, but it had an affirmative foundation in undisputed evidence"***

(Campbell J with Hoeben CJ at CL and N Adams J agreeing at [128])

R v King (No 2) [2016] ACTSC 121

- DNA (major contributor) on soiled underpants found at scene of burglary
- DNA sample taken from waistband, not excrement stains
- Forensic biologist could not exclude possibility that underpants had been worn by the accused sometime prior to the burglary and that someone else wore the underpants after him
- Minor contributor not suitable for analysis
- Defendant declined to give evidence at trial

King (No 2)

"In this case, the DNA evidence was the only evidence implicating the accused. Had there been any other evidence tending to implicate the accused which was not related to the DNA evidence, then I may have been satisfied of his guilt beyond reasonable doubt. However, I am not satisfied that guilt is the only available rational inference. ***There is, for example, a reasonable (albeit small) possibility that the burglar was someone else who was wearing unwashed underpants that had previously been worn by the accused****."*

(Murrell CJ at [77])

R v Wilton [2014] SASCFC 96

- Fingerprint case, not DNA case
- Fingerprints found on shopping bags containing cannabis (10 out of 12 bags)
- Bags were found in a car being driven by his half-brother (Hallion)
- At trial, accused gave evidence to innocently explain presence of fingerprints (he did the shopping for his mother, half-brother had access to the bags when he would come over to the house to visit)
- Found guilty by a jury of drug trafficking, appealed

Wilton (majority)

"[31] …. The prosecution evidence summarised earlier was capable of excluding any reasonable hypothesis consistent with innocence. It is a necessary implication of the guilty verdict that the jury rejected the particular innocent explanation advanced by the appellant in his testimony…

[32] ***While, on its face, the appellant's answer to the evidence incriminating him was not manifestly implausible, it was for the jury to assess all the evidence in the case.*** *It cannot be said that its verdict was unreasonable or not supported by the evidence."*

(Vanstone J with Bampton J agreeing at [31]-[32])

Wilton (dissent)

*"I have reached the view that it was **not open to the jury** (acting reasonably) to dismiss the appellant's account of how he routinely stored and dealt with reusable plastic shopping bags and the buckets, as being reasonably possible. Similarly, the uncontested evidence as given by the appellant and the fact that he and Mr Hallion shared the same mother (with whom the appellant lived), meant that **it was not open to the jury to dismiss, if only as a reasonable possibility, that Mr Hallion had access to the appellant's house and its contents leading up to when the packaged cannabis was seized from Mr Hallion's van**."*

(Nicholson J at [47])

Donnelly v Richardson [2017] WASC 194

- DNA found on pickaxe at scene of burglary
- Pickaxe was resting on top of a safe that had been moved
- Pickaxe belonged to owner of house who hadn't seen it for about 12 months
- Forensic biologist gave evidence but was not questioned about possibility of secondary transfer
- Defendant declined to give evidence
- Magistrate relied on silence to draw an adverse inference pursuant to *Weissensteiner* – found guilty
- Appealed to WASC (Fiannaca J)

Donnelly

Two grounds of appeal:

1. The verdict was unreasonable and unsupported by the evidence

2. The magistrate erred in drawing a negative inference from the accused's silence pursuant to *Weissensteiner*

Donnelly (ground 1 – unsafe verdict)

"[78] In the present case, apart from the lack of expert evidence that might support the possibility of secondary transfer, there was no evidence at all to support a hypothesis that the appellant's DNA might have been transferred onto the pickaxe handle by an intermediary. There was no evidence that the appellant had any connection with Mr Thompson's residence or any of its occupants, or with anyone who may have had a connection with the residence or any of the occupants.

[79] ***In short, there was no evidence of any means, other than by primary transfer (i.e. by direct contact), which would explain the appellant's DNA being found on the pickaxe****."*

Donnelly (ground 2 – *Weissensteiner*)

[101] As the appellant's counsel conceded on the appeal, if the accused's DNA came onto the pickaxe by direct contact in any other circumstance, then 'it could be expected that he would be in a position to provide an explanation' for such contact. In other words, having regard to the evidence about the use and storage of the pickaxe, ***any innocent explanation for the appellant coming into contact with it would necessarily have been within his knowledge****…*

[102] In my opinion, ***having regard to the manner in which the case was contested at trial****, the magistrate relied on the appellant's silence on the relevant issue as a basis for rejecting the proposition that the appellant may have come into contact with the pickaxe in circumstances other than those associated with the burglary…* ***In my opinion, it was open to his Honour to take that approach****.*

Donnelly (ground 2 - *Weissensteiner*)

"I accept that ***if there was any reasonable basis to hypothesise that the appellant's DNA came onto the pickaxe handle by secondary transfer, the foundation for the assumption that the appellant must have knowledge of any circumstances that would support such a hypothesis would be less secure****. However, to draw any conclusion about that would be speculative, given that it was not a hypothesis relied upon at trial, there being no evidence about secondary transfer."*

(Fiannaca J at [103])

Donnelly (key take-aways)

1. Need to have an evidential foundation to support your hypothesis consistent with innocence – mere conjecture will not suffice. As defence counsel at first instance had not cross-examined the forensic biologist about the possibility of secondary transfer there was no evidence for it to be left open as a reasonable hypothesis

2. *Weissensteiner* is a "real thing" and has particular scope for application in DNA circumstantial cases

3. Line between a "*Weissensteiner* case" can be difficult to discern

Wurramara v Blackwell [2018] NTSC 89

- Charged with unlawfully using motor vehicle at Angurugu (Groote Eylandt)
- 12 hour window from when vehicle was stolen to when it was found by police
- Vehicle found rolled on its side, 4 young men seen running away (police unable to identify)
- Cigarette butt inside vehicle that matched defendant – only evidence linking him to the car
- Convicted at first instance, appealed to NTSC (Kelly J)

Wurramara – issues on appeal

1. Was the DNA evidence on the cigarette sufficient to prove physical presence inside the vehicle?

2. Even if the defendant was inside the vehicle, was the evidence sufficient to prove beyond reasonable doubt that he knew the vehicle was stolen at the time?

Wurramara (judicial notice)

- Judge at first instance had taken judicial notice of the following to infer knowledge that the vehicle was stolen:

  "Young boys in Angurugu, it is my experience of 20 years coming here, don't own cars, don't travel in such cars, such that they could disappear from a residence in Alyangula, turn up in time proximate after leaving a lawful place, ending up in the community, on its side, with the dust still there, with cigarette butts identifying with no doubt that the defendant had been there."

Wurramara

"The inference drawn by the trial judge was that, on the assumption that the appellant was a mere passenger, none of his associates could have owned or lawfully possessed a vehicle of this type and, therefore, he must have known that it was stolen. That is a belief on the part of the trial judge. It may or may not be a reasonable one, ***but it is not a matter of incontestable fact (ie "not reasonable open to question")*** *which satisfies the prescription in s 144(1) for use as common knowledge"*

(Kelly J at [32])

Wurramara

*"[49] …. **All the DNA evidence establishes is that the appellant was in the car at some point after the car was stolen**. It does not establish that he was in the car when those things which the Crown relies on to establish guilty knowledge occurred. Given that potential window of 12 hours or more during which the appellant could have been in the car, in the absence of the impermissible reliance on his personal experience of what cars boys from Angurugu drive (or any evidence to that effect), the trial judge, acting reasonably, must have entertained a reasonable doubt about whether the appellant was present in the car when it was rolled, and **therefore must have entertained a reasonable doubt about whether the appellant knew the car had been stolen when he was present in the car**…"*

Where to from here?

- Judicial notice of secondary transfer?
- Judicial notice of limitations of DNA evidence?
- Specific jury directions for DNA evidence?
- Legislated warnings for DNA as a category of “unreliable evidence” – s165 UEA (i.e. similar to treatment of “identification evidence”)

Questions?