

Catching Bradley Murdoch: Tweezers, Pitchforks and the Limits of DNA Sampling

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Introduction: The Needle in the Hayfield

In mid-July 2001, the Northern Territory police began its most high profile criminal investigation since the 1980 disappearance of infant Azaria Chamberlain at Ayres Rock. British backpacker Joanne Lees' account of her own brief kidnapping and her boyfriend's permanent disappearance during a struggle with a stranger at night on a lonely outback highway gripped two nations. The police investigating the disappearance of Peter Falconio repeatedly likened their task to searching for a needle in a haystack (Anonymous 2001a; 2001b; Cock 2001; Cornford 2001; Scott 2001).

A companion article to this one, published in the last issue of this journal (Gans 2007), argued that finding the source of an unknown man's DNA found on Lees' t-shirt, the investigators' best lead, was actually a much larger and less certain task, akin to searching a field for what might turn out to be the wrong needle. Moreover, the police, apparently motivated by legal concerns, declined to pursue their DNA lead aggressively by seeking samples from each of the thousands of persons of interest to it. One person passed over for DNA sampling was Bradley Murdoch, who was interviewed because his appearance and truck seemed a match to the investigators' second-best lead: footage shot at a truck stop on the night Falconio vanished (*Murdoch* trial transcript 2005:2061, 2072-2073). After Murdoch provided the police with an apparent alibi, another six months passed before he re-emerged as a suspect (Williams 2006:193).

A year after it commenced, Taskforce Regulus, the official police inquiry into Falconio's disappearance, appeared on the brink of failure. Its membership was being scaled down and a coronial inquest was looming (McGuirk 2002). Media coverage had become a full-blown circus, featuring psychics (Baxter 2002a), claimed repeat attacks by the highway stranger (Baxter 2002b; Toohey 2002), rumours and sightings of Falconio (Daley 2002) and Lees' bruising encounters with the British press (Bashir 2002; Wilson 2002). The deaths of British backpacker Caroline Stuttle in Bundaberg and Norfolk Island's first modern murder fuelled fears that international reporting of such crimes was harming Australia's tourism industry (Anonymous 2002d; DiGirolamo 2002).

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Much changed on 9 October 2002, with the announcement that the police ‘were unable to exclude’ Murdoch, then in custody in South Australia, as a source of the t-shirt smudge (Anonymous 2002a). The Taskforce’s head, Assistant Commissioner John Daulby, expressly declined to use the term ‘match’, but the media wasn’t so coy (Bevin 2002; Hunt 2002a). It was clear that the search for the man whose blood was on Lees’ t-shirt was over. As Daulby said, ‘[t]he focus of Taskforce Regulus will now surround the activities of [Murdoch] and his movements’ (Anonymous 2002a).

The Taskforce’s efforts to secure Murdoch’s DNA were quite different to those they used to obtain several hundred DNA samples from persons of interest in the investigation’s first 10 months, described in the previous article. This article outlines the legal tools utilised during the three-month search for Murdoch and a two-month court battle over his DNA sample. It will conclude with a proposal for a new DNA sampling regime that might have given the investigators a more satisfactory means of catching Murdoch.

Closing the Tweezers

Taskforce Regulus’ third big break – after the t-shirt DNA and the truck stop video – came on 17 May 2002, when the Broome police pulled over Murdoch’s former flatmate and business partner, James Hepi. The police had been tipped off, perhaps by rival traffickers but possibly by Murdoch himself, that Hepi had four kilograms of cannabis in his ute. Hepi and Murdoch had fallen out in late 2001, perhaps because of Hepi’s annoyance at Murdoch’s obsession with modifying his Landcruiser or Murdoch’s suspicion that Hepi had caused the arrest of Murdoch’s adoptive nephew. Whatever its causes, the consequence of Hepi’s arrest was that he offered the police the identity of the suspected killer of Falconio.

Hepi’s information was that Murdoch:

- was once seen by Hepi constructing cable ties apparently identical to those used to bind Lees;
- once detailed to Hepi how he would dispose of a body;
- travelled through the Northern Territory on the weekend of 14/15 July 2001 on a drug run from South Australia, mentioning unspecified trouble on arrival in Broome;
- dramatically changed his and his vehicle’s appearance in the following weeks, shaving his moustache, thoroughly cleaning his vehicle and replacing many parts, including its canopy; and
- often mentioned the Falconio case.

(Hepi’s dealings with Murdoch and Taskforce Regulus are detailed by Bowles 2005:chs 17, 18; Maynard 2005:ch 17; and Williams 2006:chs 35, 40.)

In response, Taskforce Regulus sought to re-interview Murdoch, but discovered that he was no longer in Broome. His name was placed on a nationwide alert list in late May 2002. The investigators’ obvious next priority was to obtain his DNA for comparison with the t-shirt smudge.

Reliable Grounds

A major legal difficulty loomed. With Murdoch apparently deliberately avoiding the Falconio investigators, it was doubtful that, if located, he would consent to providing a DNA sample, even if a request was put in strong terms. So, Taskforce Regulus’ alternative legal option would be to use the powers granted by Australian parliaments that allow criminal investigators to use force to obtain a DNA sample. In common law systems such

as Australia, the United Kingdom and the United States, investigative powers to gather evidence are typically hedged by a requirement that the police have objective investigation-specific justification for using force. In Australia, both arrest and DNA sampling powers can only be used on people who the police have 'reasonable grounds' to think have committed a crime (see, e.g., the then applicable *Criminal Law (Forensic Procedures) Act 1998* (SA) s26(1)(a)). If the Falconio investigators lacked such reasonable grounds in relation to Murdoch, then, even if they found him, they could not touch him without his consent.

Requiring reasonable grounds before a police power can be used seems paradoxical: to get evidence against someone, you need to already have evidence against them. In particular, Taskforce Regulus couldn't explore its strongest lead – the highway stranger's possible DNA profile – without making gains on much less compelling avenues of investigation. Of course, such a paradox is inevitable if you accept that the use of force to further a criminal investigation requires investigation-specific justification.

What counts as an investigation-specific justification is difficult to define. The United States Supreme Court has remarked that that country's test of 'probable cause' is 'a fluid concept – turning on the assessment of probabilities in particular factual contexts – not readily, or even usefully, reduced to a neat set of legal rules' (*Illinois v Gates* at 232). In Australia, where there is no constitutional freedom from unreasonable search and seizure, precedents on its requirement of 'reasonable grounds' are rare (Gans & Palmer 2004:416). Nevertheless, Taskforce Regulus would have been well aware that they faced significant difficulties in satisfying this test in the case of Murdoch.

The most obvious problem was Hepi. In the United States, the majority of appellate decisions on probable cause concern information from 'informants', that is, people whose involvement in the police's investigation arose from their own criminal background (LaFave 1996:88-89). The Supreme Court's decisions have emphasised that an informant's account is insufficient to justify the use of force without guarantees of veracity, typically via a history of useful informing or because the information disclosed is adverse to the informant's interests (*Aguilar v Texas*).

Hepi could not be further from this paradigm. He was a first-time informant and, moreover, had much to gain (and nothing to lose) from fingering Murdoch. Not only had Murdoch become a personal and business rival, but Hepi's transparent motivation for informing was self-interest. In early August 2002, he received only a largely suspended 18-month term for drug trafficking, with the judge noting his 'cooperation with the police' (Bowles 2005:153). He was also eligible for the \$250,000 reward offered by the Northern Territory Government for information leading to an arrest and conviction in the Falconio case (Atkinson 2001).

Without any grounds to trust Hepi himself, the worth of his information depended on independent confirmation of its details. However, neither of Hepi's two most damning claims about Murdoch could be verified. Presumably, Taskforce Regulus took considerable efforts to search for Falconio's remains in the places Hepi claimed Murdoch identified as ideal for disposing of a corpse – the spoon drain beside unsealed roads such as the Tanami Track – but Falconio's location remains unknown to this day. The close match between Hepi's detailed description of the cable ties he saw Murdoch making and those used to bind Lees might have provided considerable corroboration of his claims. Alas, Taskforce Regulus had shown replica ties to the media two months earlier, as a means (they said) of rebutting attacks on Lees in the British press. Their media release included a detailed description of how to make the ties (Anonymous 2002c).

The other claims made by Hepi were largely verified, via mobile phone records, business records from mechanics in Broome and some other witnesses, including Murdoch's ex-girlfriend. However, these inquiries also revealed confounding details, such as Murdoch's ordering of replacement parts for his ute well before the Barrow Creek incident, his purchase of a trailer (seen by neither Lees nor the truck stop camera) as he was leaving South Australia, various acquaintances who maintained that he had neither a moustache nor long hair at the relevant time and the undisputed fact that Murdoch's dog, Jack, was a Dalmatian, not a red heeler, all facts that contradicted Lees' own statement to the investigators. Murdoch's suspicious acts, such as changing his and his vehicle's appearance and, later, disappearing, were explicable by his desire to protect his drug running business, his falling-out with Hepi and his own oft-stated frustrations at being regularly pulled over by police investigating the Falconio case.

So, the investigators' suspicions about Murdoch, Hepi's unverified claims aside, came down to the apparent fit between his appearance, possessions, behaviour and movements and those of the highway stranger. However, while that might be sufficient in many investigations, it wasn't in this case; as explained in the companion article, many people were likely to share some or all of the features of the man in Lees' tale. Clearly, Murdoch was now firmly ensconced as one of Taskforce Regulus' hot prospects. But was membership of that group enough to justify forced DNA sampling?

Narrow Grounds

In the United States, court decisions 'indicate that probable cause requires a fairly narrow focus, but they ordinarily stop short of saying that the focus must narrow down to a single suspect' (LaFave 1996:63). However, the narrower approach has occasionally been taken in Australia. The most famous instance arose from the 1989 death of David Gundy, who was shot in his house as he wrestled with armed police.

Gundy's home was stormed simultaneously with five others that were identified as possible hiding places of a man suspected of shooting two police officers; an informant had said that one of Gundy's housemates had a brother who was a childhood friend of the suspect. A subsequent inquiry into Gundy's death analysed the main Australian decisions on arrest and search to conclude that, amongst other flaws in the investigation, the fact that there were six simultaneous raids meant that the requirement for reasonable grounds to believe that the suspect was on the premises could not have been satisfied; it is not possible to believe on reasonable grounds that a single suspect is in more than one house (Wooten 1991:53-55).

Nothing can be said with certainty about the investigative focus required to establish reasonable grounds for the relatively new statutory powers on DNA sampling in the various jurisdictions in Australia, which, in any case, vary in their terminology (see *Orban v Bayliss*; *Police v Beck*). However, the tests required by these statutes all closely resemble those imposed as preconditions on the traditional powers of arrest and search; it is doubtful that any Australian police have the authority to arrest or search groups of people when searching for a single criminal. This suggests that a focus sufficient to justify DNA sampling would have to be similarly narrow: if not one suspect, then only a few. In terms of the analogy of finding a needle in a haystack, the statutory DNA sampling powers are akin to arming the searcher with a pair of tweezers.

At Murdoch's committal and trial, the prosecution adduced evidence aimed at establishing that the field of possible suspects had indeed been narrowed down to just

Murdoch. Senior Sergeant Megan Rowe, the head of Taskforce Regulus' intelligence cell, testified that Murdoch was the only man not 'eliminated' out of the:

- 36 names nominated by the public as the man in the truck stop video;
- approximately 30 hot prospects identified by Rowe;
- the 2000 or so persons 'of interest' to the investigation

(*Murdoch* committal transcript 2004:1191, 1198-1200, 1214-1217; *Murdoch* trial transcript 2005:2070-2073, 2106-2108).

The first two of these claims suffer from two deficiencies in terms of establishing an objective basis for suspecting Murdoch. First, both groups of names were established subjectively, by the public and the Taskforce respectively. The real truck stop man may simply not have been recognised; moreover, Rowe conceded that she had had to disregard a further 30 claims to have recognised the truck stop man, because the informants gave insufficient details to identify the candidate. Likewise, the Taskforce's notion of hot prospects was not defined systematically, but was rather a matter of day-to-day operational exigencies; indeed, Murdoch only emerged as a hot prospect because of Hepi's tip and the elimination of other hot prospects (Shears 2005:115). Second, Rowe's claim that the men on the lists had been eliminated depended, in about half of the names, on DNA identification, despite the possibility that the t-shirt smudge was unconnected to the Barrow Creek incident.

Rowe's third, much broader, claim suffers from still broader problems. As discussed in the companion article, the Taskforce devised shortlists of persons of interest as an alternative to the near impossible task of investigating everyone who had an opportunity to commit the crime; however, that doesn't mean that the real offender was on the shortlist. Also, Rowe conceded at Murdoch's trial that much of the list was eliminated using a much less exacting methodology than the two smaller lists. In her testimony, she described an elimination process based on her and other's assessments of each person of interest's fit to characteristics of the stranger and vehicle, drawn from Lees and the truck stop video. Not only was this process clearly a matter of subjective judgment, but it was also subject to uncertainty about both of these sources. In any case, the bulk of the shortlist was eliminated only after Murdoch's arrest and sampling. Only 43 of the 1500 names eliminated in this phase were subjected to the closer inquiries based on alibi and DNA identification that Rowe had used to clear the two smaller lists (*Murdoch* committal transcript 2004:1216-1217; *Murdoch* trial transcript 2005:2108).

Taskforce Regulus would have been well aware after May 2002 that their ability to lawfully take Murdoch's DNA sample once he was found was in doubt. Their options were limited: to hope that something would arise from traditional lines of inquiry or to pursue another method for eliminating or confirming Murdoch's identity as the highway stranger. Asking Lees to attempt to select Murdoch's picture from a photo parade would reduce the worth of her eyewitness identification in any future trial, as later events bore out (*R v Murdoch (No 1)*). Morphology analysis of the truck stop video, relied on at Murdoch's later prosecution, was apparently either unavailable or deemed too expensive or doubtful to pursue at that stage in the investigation.

The investigators spurned one alternative option for obtaining Murdoch's DNA sample. Hepi, eager to convince the police that his information was accurate, offered to locate Murdoch's discarded cigarette butts, which he was sure would contain DNA matching the t-shirt smudge. However, the Falconio investigators were uninterested in this offer

(probably for good reason) and later testified that they received no such items from Hepi (*Murdoch* trial transcript 2005:2033-2037).

In the end, Taskforce Regulus opted for a different way of testing Murdoch's link to the t-shirt smudge. On 14 August 2002, they travelled to Perth and approached Murdoch's older brother, Gary, for his DNA sample. The costs of this decision became clear when it later emerged that Gary promptly phoned Murdoch to warn him of the heightened interest of the Falconio investigators. However, the police's gambit yielded a partial DNA match after Gary consented to the sampling, perhaps because he didn't think his brother was the highway stranger (Bowles 2005:151; Maynard 2005:159-160; Williams 2006:224).

The partial match – to be expected if a blood relative of Gary's was the source of the smudge – was certainly enough, in combination with the other information gathered by Taskforce Regulus, to objectively narrow the investigators' suspicions to Murdoch himself. However, Taskforce Regulus eschewed relying on this technique as a means of justifying the sampling of Murdoch. Instead, when Murdoch was located two weeks later, none of the information gathered by the investigators up to that date was used to justify either his arrest or the taking of his DNA sample.

Pulling the Tweezers

The final major break in the Falconio case was a phone call at 11.30am on 28 August 2002. A man rang Berri police station in South Australia's Riverland to say that his de facto and her daughter had been raped and kidnapped by Murdoch a week earlier.

This grim message yielded two enormous benefits to Taskforce Regulus. First, it led directly to the arrest of Murdoch around 6pm that day, as he was buying supplies at a supermarket in Port Augusta. Second, it also provided a new avenue for lawfully acquiring Murdoch's DNA sample. The accounts of the two alleged victims were clearly enough to provide reasonable grounds to suspect Murdoch of a serious crime: not the Barrow Creek incident, but rather the alleged rapes and kidnappings in South Australia. (The rape and kidnapping investigation and prosecution is detailed in Bowles 2005:chs 19, 31; Maynard 2005:chs 17, 18; and Williams 2006:chs 41, 44.)

If these crimes had occurred in the Northern Territory, Murdoch's mere arrest would have been enough to justify his forced DNA sampling: see *Police Administration Act* 1978 s145A. However, the remaining Australian jurisdictions, including South Australia (see the then applicable *Criminal Law (Forensic Procedures) Act* 1998 s26(1)(b)), required that the objective justification for a proposed DNA sampling encompass, not only who is sampled but also the investigative utility of sampling. So, to force Murdoch to provide a DNA sample to investigate the allegations by the mother and daughter, the police needed reasonable grounds to expect that obtaining Murdoch's DNA sample would make a difference to that investigation. This requirement became the subject of a court dispute during September 2002, when Murdoch challenged the validity of forensic procedures carried out after his arrest on the rape and kidnapping charges (see *BJM v Police*).

Expected Gains

An alleged rapist's DNA sample will often be crucial to a rape investigation. However, three facts dramatically reduced the potential value of Murdoch's DNA to the investigation into the South Australian allegations. First, the mother had disposed of her and her daughter's clothes the day after the alleged crimes, along with any DNA evidencing them. Second, the two alleged victims did not go to the police until a week after the alleged rapes

occurred, so it appeared unlikely that any fluids from the rapist would have remained on their bodies. Third, the alleged crime scenes described by the child and her mother were, respectively, Murdoch's own bed (in a building on the victims' property) and his Toyota Landcruiser. Both would have Murdoch's DNA on them whether he had raped the complainants or not.

However, while the question of whether a person did or did not commit a crime has only one correct answer, the evidential value of a procedure to an investigation depends on the other evidence available to the investigators. The South Australian Supreme Court's ruling on the validity of Murdoch's DNA sampling took into account what evidence *might* emerge. At the time of the court's decision, on 8 October 2002, the rape investigation was at an early stage: forensic results on the crime scenes and victims' bodies were unavailable and Murdoch had refused to comment on the allegations. So, the South Australian court was able to contemplate the possibilities that male bodily tissue might yet be found on the victims' bodies, semen might be found in the bed or car or Murdoch might deny parts of the victims' account – such as smoking or drinking at the time of the alleged crimes or being at a particular location – that might be verifiable by DNA identification. The court held that these possibilities sufficed as reasonable grounds to expect that the DNA sampling might yield an investigative benefit (*BJM v Police* at [25]-[31]).

In short, the paradox of reasonable grounds – that you need evidence that a person has committed a crime to get evidence that he or she has done so – is reversed when the reasonable grounds relate to the expected outcome of the procedure. If the police are fortunate enough to have reasonable grounds to suspect a person very early in an investigation, then their expectations will nearly always be objectively wide enough to justify taking a DNA sample on a 'just in case' basis.

Once the law's tweezers have closed on a particular piece of hay, is there any reason to refrain from checking whether or not the hay is really a needle? Many modern DNA sampling statutes include a public interest test, weighing the benefits of sampling against the costs. In South Australia, decision-makers had to consider the effects of the proposed procedure on the suspect's welfare, as well as his or her reasons for objecting: see the then applicable *Criminal Law (Forensic Procedures) Act* 1998 s26(1)(c)-(2). However, these considerations are only significant if a suspect's dislike or discomfort at being sampled could ever be a cogent reason to forego a possibly useful procedure. This is a doubtful proposition for serious crimes.

Once the police have objective grounds to suspect someone of rape or kidnapping, they can arrest that person and search his body, clothes, possessions and home, not to mention subjecting him or her to a period of detention for questioning. Alongside these intrusions, a DNA sampling procedure (i.e., mouth swabbing, hair pulling or thumb pricking) and analysis of the suspect's DNA in a lab pale in comparison. Indeed, the South Australian court highlighted the removal of Murdoch's pubic hair and swabbing of his penis (to seek tissue from his alleged victims) rather than the swabbing of his mouth (to seek his own tissue), as a 'serious invasion' of his privacy. However, even these intrusions did not outweigh even the slight possibility of gathering evidence that might affect the investigation of the serious allegations made against him in South Australia (*BJM v Police* at [33]-[34]).

So, the South Australian Supreme Court held that neither the reasonable grounds requirement nor the public interest test provided any barrier to testing Murdoch for the rape investigation. In the end, it made no difference that Murdoch was arrested in South Australia in 2002, when its statutory DNA sampling power was supposedly closely constrained, rather than in the Northern Territory, which has long provided the DNA of

arrestees *carte blanche* to investigators, or five years later, when the South Australian Parliament gave its police the world's broadest DNA sampling powers: see *Criminal Law (Forensic Procedures) Act 2007* (SA) s14. Faced with the court's judgment, Murdoch declined his right to further appeals from the ruling and instead devoted his energies to fighting the substantive charges against him.

Intended Gains

The irony in the South Australian proceedings was that, although the Supreme Court's reasons were concerned exclusively with the rape and kidnapping charges against Murdoch, those charges were clearly of secondary importance to both Murdoch and the police. After Murdoch's arrest, South Australia's Attorney-General followed his New South Wales counterpart in hurriedly signing an agreement with the Northern Territory police to permit the cross-border sharing of DNA samples and profiles (Hunt 2002b). Murdoch's counsel, Grant Algie, told the court, '[i]t is fundamentally obvious that the [South Australian police's] purpose ..., one would cynically suspect, is not in respect to these allegations. It is for the purpose of sending these samples to the Northern Territory' (Reid 2002). When Murdoch was prosecuted for the rapes and kidnappings in early 2003, the defence was even more cynical, asserting that the rape allegations themselves came about at the behest of either Hepi (who knew both complainants) or Taskforce Regulus as part of an interstate conspiracy to obtain Murdoch's DNA for comparison with the t-shirt smudge (Maynard 2005:173).

The proposed use of forensic information, gathered for one investigation, to further an unrelated investigation is something that is difficult for a court to take into account when deciding whether or not a forensic procedure is justified. Aside from the problem of ascertaining the investigators' true motives, there is the inherent difficulty of balancing the need to investigate the crime charged against the costs to the suspect of being exposed to other investigations. For example, it was clear that the rape complainants' claim that Murdoch's drug use prompted his crimes against them justified sampling his blood to test their claim (*BJM v Police* at [28]). How could the merits of this claim be outweighed by the possibility that the police would also obtain a DNA profile from that blood and send it to the Northern Territory?

Rather, the only workable way to protect suspects from being exposed to investigation for crimes other than those suspected is for the legislature to pass laws restricting the investigative *use* of DNA profiles to the purpose for which they were obtained. In Australia, the drafters of model DNA database laws proposed such a limit in 1999, but dropped it without explanation a year later (Gans 2002a:218). All Australian jurisdictions, and many overseas ones, have enacted provisions expressly permitting the comparison of suspect DNA profiles against any unsolved crime. The only limit (in Australia) is a temporal one: matching (and indeed retention of the profiles or samples in an identifiable form) is not permitted if charges are not brought after a defined time, or they are dropped or the suspect is acquitted (see e.g., *Criminal Law (Forensic Procedures) Act 1998* (SA) ss44C, 46D(2), but note the repeal of all such requirements by the *Criminal Law (Forensic Procedures) Act 2007* (SA)).

The policy of making further use of samples taken from unconvicted suspects continues to be debated, at least outside Australia. Critics of the policy condemn the level of intrusion into citizens' privacy and discriminatory treatment of arrestees; supporters highlight the benefits of holding a larger number of profiles and the difference between being unconvicted and being factually innocent (see *R (S & Marper) v Chief Constable*). While

Murdoch's case might seem to highlight the benefits of the policy, the ultimate fate of his South Australian prosecution ought to give its proponents pause.

Murdoch faced trial for the rape and kidnapping charges three months after Taskforce Regulus announced that his DNA profile matched the t-shirt smudge (Williams 2003). The South Australian jury were well aware that Murdoch was the prime suspect in the Falconio case, as the stress of the pursuit by Taskforce Regulus (heightened by the phone call from his brother) was part of the motive the prosecution alleged for the attacks on the complainants. Despite this knowledge, the jury acquitted him of all the South Australian charges after just three hours deliberation (Bowles 2005:294).

Murdoch's acquittal did not, of course, affect the legality of his DNA sampling or the transmission of his DNA profile to the Northern Territory. However, the result sat unfortunately comfortably with Murdoch's repeated claim that the two complainants' accounts were outright lies aimed at allowing Taskforce Regulus to obtain his DNA sample. Whatever the merits of this conspiracy theory, it lent credence to Murdoch's other claim: that he was also being framed (by Hepi, the Northern Territory police and/or others) for the murder of Falconio and the assault of Lees.

Moreover, recent revelations about South Australia's DNA database system demonstrate that the policy of permitting unlimited matching of suspect DNA samples might have had more significant negative consequences for the investigation. In November 2005, South Australia's Attorney-General reported that the State's public authorities had been systematically failing to remove profiles of cleared suspects from their database, as mandated by statute. The problem, caused by the police's glacial approval of protocols, existed in 2003 and was not resolved until late 2005 (MacPherson 2005:11-12). At least two people had been unlawfully linked to crime scenes using DNA profiles that should have been removed from the database; while one pled guilty (MacPherson 2006:5-6), the other was acquitted after successfully challenging the evidence against him as illegally obtained (*R v Dean*).

The possible significance of these revelations to the Falconio investigation can be seen by considering the following hypothetical: What if Taskforce Regulus' third big break – Hepi's arrest on drug charges – never occurred and Murdoch remained a mere person of interest when he was arrested in South Australia? Any DNA profile obtained for the rape and kidnapping investigation would have been processed just like all other suspect DNA profiles in South Australia at the time: that is, slowly (*R v Dean* at [8]-[10]). Once Murdoch was acquitted or otherwise cleared of those charges, his profile would have unlawfully remained on the database until late 2005.

In the meantime, it is possible that Murdoch might have been matched to the t-shirt smudge, with the consequence that the match and all evidence obtained as a result of it would automatically be inadmissible in South Australia (*Criminal Law (Forensic Procedures) Act 1998* s45(3)). This position would have been very influential elsewhere in Australia (*R v Sarlija*), including, presumably, the Northern Territory. So, if events had followed this hypothetical but entirely plausible path, then, at the very moment Taskforce Regulus finally discovered who left the t-shirt smudge, that source would probably have been rendered effectively immune from prosecution for the Barrow Creek incident.

Conclusion: It Takes a Pitchfork

The inculpatory power of DNA identification was stunningly demonstrated in 1986 in the same investigation that also proved its exculpatory value. A year after Alec Jeffreys' technique exonerated one boy of two murders in central England, Leicestershire police asked all 3000 men in the villages surrounding the two crime scenes to give their blood so that the same technique could identify the true killer. The breakthrough came when they learnt that a local resident had asked an acquaintance to give blood in his stead. When confronted with proof that he had evaded the world's first mass DNA screening, Colin Pitchfork confessed to the murders in front of his wife and the police (Wambaugh 1989:ch 26).

Murdoch was no Pitchfork. Arrested on the Adelaide court doorstep after his acquittal on the rape and kidnapping charges, he maintained his innocence throughout his prosecution in the Northern Territory, ultimately denying his involvement in the Barrow Creek incident on oath.

The announcement of the DNA match proved to be Taskforce Regulus' highpoint, flanked by major missteps. At Murdoch's prosecution, it emerged that Territorian investigators had taken Lees' handcuffs to South Australia in order to prompt the newly arrested Murdoch to confess (*Murdoch* trial transcript 2005:879). His defence later argued that novel DNA evidence linking him to the cuffs was the result of contamination during this gambit. The Taskforce also neglected to promptly inform their only eyewitness of the match to Murdoch; Lees instead learnt of Daulby's announcement from friends while holidaying in Sicily. She visited a BBC website featuring Murdoch's photo accompanied by a caption celebrating the DNA result, irrevocably contaminating all of her subsequent purported identifications of him as her assailant (*R v Murdoch (No 1)* at [18]-[32]). These and other flaws in the prosecution's evidence meant that the initial DNA match between Murdoch and the t-shirt smudge bore much of the weight of the case against him.

The match to the t-shirt smudge was evidently sufficient for a jury to convict Murdoch of murdering Falconio and assaulting Lees at the conclusion of a lengthy Darwin trial in late 2005. The DNA match also allowed appeal courts to uphold Murdoch's conviction despite some legal errors during his trial: *Murdoch v The Queen* (NTCCA) at [311]-[330]; *Murdoch v The Queen* (HCA). Subject to the emergence of new evidence (e.g. Falconio's remains), Taskforce Regulus can obviously be labelled a success. But can the same be said about the present legal regime for DNA sampling? The analysis in this article and its companion suggests that the regime failed at three points during the investigation:

First, as outlined in the companion article, in November 2001, when the police either declined to ask Murdoch for his sample or didn't push the point. Taskforce Regulus likely eschewed a more aggressive approach to sampling its shortlist because of concerns that such an approach might backfire legally if used against someone who was eventually prosecuted. The result was that the Taskforce failed to recognise Murdoch's significance for a further six months, during which time he absconded, Hepi negotiated a soft sentence and almost a thousand others were investigated.

Second, after May 2002, when the Taskforce recognised the importance of Murdoch's DNA, but also that they likely lacked objective justification to have him compulsorily sampled once located. Again eschewing other ways of gathering his DNA, the investigators ultimately chose to approach Murdoch's brother. The result was a significant partial match that they nevertheless declined to rely upon once Murdoch was arrested. Moreover, Murdoch's brother promptly tipped off the investigators' target. At Murdoch's rape and kidnapping trial, the prosecution argued that this prompted his alleged crimes the following week.

Third, in August 2002, when the police chose to rely on the South Australian charges, rather than the Barrow Creek incident, to obtain Murdoch's sample. The serendipity of the rape and kidnapping charges emerging just as Murdoch was arrested – and that investigation remaining nascent during the court battle over the sample – meant that the constraints on the police's DNA sampling powers were sidestepped. Keeping the South Australian events from the Darwin jury proved difficult, in one instance nearly causing Murdoch's lengthy trial to miscarry (*R v Murdoch (No 6)*).

It might be argued that these problems were the product of the difficulties of the investigation, rather than the legal regime for DNA sampling. However, that argument assumes that investigators searching a hayfield for a needle should not be given a tool more suitable than a pair of tweezers to perform their task.

In the midst of the legal dispute about Murdoch's sampling in South Australia, the author aired an argument that DNA sampling powers should not be subject to the legal constraints imposed on traditional powers like arrest and search (Gans 2002b). As later formulated, the proposal was that the police should be empowered to compulsorily sample the DNA of 'groups of people, where investigators reasonably suspect that one of the group has committed a crime for which a crime scene profile has been obtained, but investigators are unable to narrow that suspicion to a particular individual' (Gans 2003:16).

In terms of the hayfield analogy, this power could be equated to giving the searcher a pitchfork to quickly gather hay.

Obviously, this proposal is a significant change to the present law and the Falconio investigation alone can scarcely justify it. As the author has argued elsewhere, the case for the proposal turns not only on the present limits of compulsory DNA sampling, but also on the flaws of alternative methods to which investigators are driven, such as the consent of so-called volunteers, the informal gathering of DNA outside the bounds of current regulation and the use of 'DNA request surveillance'. These techniques presently leave non-suspects exposed to having their privacy infringed with few legal restraints or protections (Gans 2001). By contrast, a new compulsory power could be constrained by the limits presently applicable to compelled individual sampling, including reasonable grounds and public interest requirements, tests that would be much more meaningful when applied to a proposal to sample a group. There would be also be a compelling legal and political case to further hedge a group sampling power by limiting the definition of a group, requiring a court order and restricting the use made of samples obtained (Gans 2003).

The main rationale for a group sampling power flows from the contrast between traditional investigative techniques and the use of DNA identification. This rationale is powerfully illustrated by contrasting the course of the actual Falconio investigation with the way it might have progressed had a group sampling power been available to Taskforce Regulus. As the companion article explained, Taskforce Regulus' methodology relied on developing a number of shortlists of persons of interest. Those lists, especially the main one based on tips, were presumably chosen in part due to their amenability to investigation through the tools then available to the taskforce, such as alibi checking and (when used) voluntary DNA sampling. Armed with a compulsory group sampling power, a quite different list might have been devised based on a source less susceptible to human failings: Taskforce Regulus' second-best lead, the truck stop video.

While there are millions of four-wheel drives manufactured in Australia, only 72,000 or so are 75-series Toyota Landcruisers, the type recognisable in the video (Toyota Australia 2006). Further clues from the video could reduce the group of potential suspects, notably

the approximate height of the stooping figure filmed at the truck stop – six feet, according to the police’s media release (Anonymous 2002b) – and the man’s purchase of diesel (rather than petrol) fuel. A straightforward analysis of vehicle registration and drivers’ licence details could be used to generate a list of male owners of diesel 75-series Landcruisers who were taller than six feet. Such a list would probably number in the tens of thousands. Several mass DNA screenings of this size have been conducted in Germany, albeit on an ostensibly voluntary basis (Sauter 2003:26). Indeed, a screening of over 80,000 people as part of a serial child rape investigation has been underway in Saxony since 2006 (Anonymous 2006, 2007, explaining a decision of Dresden’s district court to order a continuous DNA investigation of all men, born between 1961 and 1980, between 1.65 and 1.85 metres tall and resident in Dresden or 24 other Saxony municipalities in 2005).

If Taskforce Regulus had been willing and able to obtain a group DNA sampling order for men whose height and vehicles matched the truck stop video – arguably, a group that could be reasonably thought to include the highway stranger – then many more people would have had their DNA taken than the several hundred men who volunteered their samples to the Taskforce during 2001 and 2002. However, numbers alone do not paint the full picture. There would be significantly less stigma to membership of a group whose characteristics matched the truck stop video than to being labelled a person of interest because of public or police tips. Moreover, compelled DNA sampling would likely have been less burdensome on citizens and police resources than the investigation of macroscopic characteristics like appearance, belongings and movements used to clear Rowe’s various lists.

Most importantly, sampling such a group would avoid many of the uncertainties that burdened Taskforce Regulus’ search for the source of the t-shirt smudge. Instead of trusting Lees’ hazy memories or pouring over mostly irrelevant public tips to generate a smaller shortlist, the larger group is based on narrower and more precise leads. Of course, detection of the highway stranger via group sampling is by no means certain. However, if every member of this group was cleared as the source of the t-shirt smudge, then Taskforce Regulus would have learnt something crucial: that at least one of the truck stop video, vehicle registration details or the smudge itself was an unreliable lead. Similar gains would not have flowed with any certainty from the methodology actually adopted by the Taskforce’s intelligence cell.

With hindsight, we know that the DNA of one man in the group would have matched the t-shirt smudge. In all probability, Murdoch, six feet and five inches tall and the owner of a diesel 75-series Landcruiser, would have made himself scarce when the group sampling order became public, just as he eventually did during the actual operation of Taskforce Regulus. However, the police could then have searched for him (and any other fugitives) free of the imperative of finding objective grounds to narrow the investigative focus to a particular person. Hepi’s reduced sentence and, perhaps, the unfortunate developments in South Australia might have been avoided. Moreover, Murdoch’s eventual DNA sampling could have been conducted on a secure legal footing without the need for the serendipity of further, ultimately unproven, allegations of serious crimes.

It took a village to catch Colin Pitchfork. However, in modern Australia, where the majority of the population lives in big cities and the outback scarcely resembles the British countryside, the tweezers that the law currently provides to the police to compulsorily acquire a DNA sample were a very poor substitute. It may well take a pitchfork to catch the next Bradley Murdoch.

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