A BRAVE NEW WORLD OF CRIMINAL JUSTICE: NEIL GERLACH'S *GENETIC IMAGINARY*[1]

A thousand years ago, trial by ordeal was all the rage in the justice system. Whether by hot iron, hot coals or water, the logic behind the various ordeals was relatively straightforward. God was interested in justice and would not allow an innocent person to be found guilty of an offence. Hence, the ordeal gave God the opportunity to save the innocent while allowing the guilty to be identified. As a system of justice it seems ridiculous to us today, but it was seen as sensible for a period many times longer than we have seen it as sensible to permit an accused person to testify in his or her own defence.[2]

In fact, trial by ordeal reflects a perfectly valid argument: God would not let an innocent person be condemned, but God has not saved this person, therefore this person is not innocent. The problem with the argument is not its validity but its soundness. If the starting premise were true the conclusion would follow, but in fact it seems pretty clear there is not a god who feels compelled to participate in the justice system on this kind of day-to-day basis.

Living on longer than trial by ordeal was another supposed method of proof, the belief that a corpse would bleed in the presence of its murderer: Shakespeare, for example, has Lady Anne note that "dead Henry's wounds/open their congeal'd mouths and bleed afresh" as Richard the Third stops the funeral procession.[3] Again, were there any scientific basis for this belief, it would be a boon to the criminal justice process, at least in murder trials — though squeamish judges and jurors might not welcome the innovation.

But perhaps, even if the belief were true, we would not make use of the evidence. In our time, for example, the Supreme Court of Canada has decided that polygraph evidence is not admissible in court proceedings. If this were simply skepticism about the accuracy of lie detectors, the decision would be inevitable: of course unreliable pseudo-scientific evidence should not be led. If, on the other hand, we were convinced that polygraphs or some similar credibility-tester were entirely accurate, it might seem like the sort of evidence that would be extremely valuable: that could, in fact, largely do away with trials. If we had a scientifically-proven indicator of guilt, why should we rely on the less certain method of who the judge or juror believes?

However, the Supreme Court unambiguously stated that unreliability was not the basis for rejecting polygraph evidence: "I would say at once that this view is not based on a fear of the inaccuracies of the polygraph. On that question we were not supplied with sufficient evidence

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1 Neil Gerlach, *The Genetic Imaginary: DNA in the Canadian Criminal Justice System* (Toronto: University of Toronto Press, 2004).

2 It is unclear exactly how long the system was used in that its origins in England are not easily identified, though it is thought to predate Christianity there. Pope Innocent III issued a decree against Ordeal in 1215: see "Ordeals" in the *Catholic Encyclopedia*, online: New Advent <www.newadvent.org/cathen/11276b.htm>.

3 See *Richard III*, Act I, Scene II.

to reach a conclusion."[4] Rather, they did not accept them precisely because, if polygraph evidence was admitted, it would effectively do away with trials:

> Here, the sole issue upon which the polygraph evidence is adduced is the credibility of the accused, an issue well within the experience of judges and juries and one in which no expert evidence is required. It is a basic tenet of our legal system that judges and juries are capable of assessing credibility and reliability of evidence.[5]

In this well written and intriguing book, Neil Gerlach asks why the criminal justice system has accepted DNA evidence in much the same way that our Anglo-Saxon predecessors accepted trial by ordeal. Why have we not instead shown the same caution we show polygraph evidence? To be sure, he does not present the issue in those terms, and might shudder at the analogy. Still, the central issue he pursues in the book is the question of how DNA evidence has managed to assume its current aura of infallibility, as evidence which is somehow uniquely objective and "true": how it has come to be regarded as an "oracle of truth in criminal justice, superior to the politicized power games of self-interested state agents."[6]

This is neither a legal book nor a scientific one, though that is not a criticism. Gerlach is not concerned with some matters lawyers might see as important, such as the distinction between a search not violating the *Canadian Charter of Rights and Freedoms*[7] and a search violating the *Charter* but the evidence being admitted nonetheless. Similarly, he occasionally reports instances of DNA warrants being issued in circumstances where it is hard to see how the statutory requirements were complied with. Finally, he does not attempt to show that DNA evidence is in fact unreliable, that there are flaws in the standards set for testing or the laboratory accreditation procedures, or that the testing procedures are in practice invalid.

That is not to say, however, that Gerlach does not look at legal and scientific issues, because he does both. In the course of writing the book he considered somewhere close to 200 cases. Some of these, like *R. v. Morin*[8] and *Reference re: Milgaard*,[9] he looks at in considerable detail. At another point, he looks at 164 cases applying the *Criminal Code*'s[10] DNA provisions, in a broad brushstroke manner aimed at discovering particular trends. The approach here is very much that of the social scientist: it does not provide legal arguments or analysis, but instead gives an interesting perspective on the attitude that has been adopted both judicially and by the public towards DNA evidence, and how that shapes the perception of the issues. In looking at the *Morin* and *Milgaard* cases he engages in an analysis of the media coverage to show what narrative was constructed around each and, in particular, how DNA evidence was portrayed in each. He notes for example that

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4 *R. v. Béland*, [1987] 2 S.C.R. 398 at 416-17.

5 *Ibid.* at 415-16.

6 *Supra* note 1 at 129.

7 Part I of the *Constitution Act, 1982*, being Schedule B to the *Canada Act 1982* (U.K.), 1982, c. 11 [*Charter*].

8 [1998] 2 S.C.R. 345 [*Morin*].

9 [1992] 1 S.C.R. 866 [*Milgaard*].

10 R.S.C. 1985, c. C-46.

> The press coverage also brought DNA testing into the Morin narrative as a heroic ultimate identifier — an objective truth teller that cut through the inefficient and ineffective rituals of testimony, witnessing, and organizational processes to reveal the truth.[11]

This is Gerlach's real concern in looking at cases: what image of DNA testing has been created and accepted.

Similarly Gerlach discusses the scientific process involved in DNA testing and looks in particular at DNA testing in Canada and the operation of the National DNA Databank. Again, though, his concern is not to show that the process is actually flawed: his interest is how it has generated an impression of flawlessness and reliability. One of the most revealing quotes comes from Alec Jeffreys, the British scientist who first developed DNA testing: "If we had called this 'idiosyncratic Southern blot profiling,' nobody would have taken a blind bit of notice. Call it 'DNA fingerprinting' and the penny dropped."[12] Gerlach does point to the many places in which human interpretation and decision-making in fact enters into the process of DNA testing. His central point, though, is that the process today is seen as essentially a black box: an expert comes and testifies about a particular probability, and that percentage is the evidence. Rarely does a judge or jury get behind the number and the potential illusion of precision it creates.

Scientific objectivity has been challenged as something of an illusion in many other instances. Gerlach mentions a U.S. case in which a forensic serologist was convicted of misconduct for his biased work on behalf of the prosecution in over 130 criminal cases.[13] In Canada, one can point to *R. v. Trotta*[14] and *R. v. Kporwodu*,[15] two recent cases in which concerns have been raised over potential Crown bias on the part of a pediatric pathologist. In addition, there are many well-documented cases of outright fraud by scientists bent on proving particular conclusions.[16] No less damagingly, subconscious views can affect the way in which scientists perform their work. Various purportedly scientific measures have been relied on to support politically-motivated claims about intelligence, for example.[17] Even an apparently objective task like counting lines on a crystal can be influenced by subjective pressures on the scientists involved.[18] Again, however, Gerlach's central point is not to claim that DNA evidence is typically flawed or unreliable: his point is that today, the black box is closed and the option of pursuing that argument has all but disappeared.

Gerlach also points to other institutional factors contributing to these conclusion. He notes, for example, the relative lack of availability in Canada of DNA testing for the defence in criminal cases. Rather, typically RCMP forensic experts testify for the Crown, but there are no expert witnesses available for the other side. Since this is quite unlike most circumstances,

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11 *Supra* note 1 at 118.

12 *Ibid.* at 139.

13 *Ibid.* at 228. See *Re: West Virginia State Police Crime Lab*, 438 S.E. 3d 501 (W. Va. 1993).

14 (2004), 23 C.R. (6th) 261 (Ont. C.A.).

15 (2003), 176 C.C.C. (3d) 97 (Ont. Sup. Ct. J.).

16 See *e.g.* William Broad & Nicholas Wade, *Betrayers of the Truth: Fraud and Deceit in the Halls of Science* (New York: Simon & Schuster, 1982).

17 See *e.g.* Stephen Jay Gould, *The Mismeasure of Man* (New York: Norton & Co., 1981).

18 See Roger Lewin, *Bones of Contention: Controversies in the Search for Human Origins* (New York: Simon & Schuster, 1987) at 246-47.

in which expert evidence is called by both parties, it also helps to create "the impression that DNA is an exact and unambiguous science in which human interpretation plays no part."[19]

Gerlach also points to other ways in which the existence of DNA technology and testing affects the criminal justice system and attitudes within it. Let us return to the polygraph analogy for a moment. One theoretical difference is that polygraph evidence goes to the central issues of credibility, essentially allowing an expert to perform the judge or jury's job of deciding who is telling the truth. DNA evidence is merely evidence of one particular fact relevant to the trial — at least in principle. But part of Gerlach's point is that in practice, the perception of DNA evidence allows it to play a more central role than perhaps it ought to: a role, one might claim, similar to that of the polygraph. Gerlach refers to the "prosecutor's fallacy" — an easy error for judges, juries or lawyers to fall into.[20] When DNA evidence is presented in a trial, confining it to its proper role (that is, not treating it like polygraph evidence) involves reasoning in two steps: 1) what is the probability that this DNA sample came from the accused; and 2) if the DNA sample came from the accused, what is the probability that the accused is guilty. The enormously high percentage probabilities often obtained by DNA testing answer only the first question. But all too easily, Gerlach argues, we can slip into the error of treating it as the answer to the second question "thereby equating the probability of a random match with the probability of the defendant's innocence."[21] Indeed, contested hearings over DNA evidence are proportionally quite rare: the normal result, Gerlach notes, is a plea bargain.[22] In that event, DNA evidence is in practice frequently playing the pre-emptive role that it was feared polygraph evidence would play.

Other issues are discussed briefly in the book, such as the potential dangers to privacy that will arise from demands to do research on DNA databank samples, the push towards finding genetic explanations of crime and society's movement from a danger analysis to a risk analysis. On the whole, the book has the desirable quality of continually causing the reader to ask questions, which turn out to be answered, or at least addressed, in later chapters. One issue that deserved more discussion, however, was the practice of DNA "sweeps" and its relation to the presumption of innocence. Gerlach discusses a number of instances in Britain, the United States and Canada when police, while investigating a serious crime where a DNA sample was found at the scene, have sought voluntary DNA samples from all the men within a certain geographic area. He describes the facts of these various sweeps and notes that they seem inconsistent with the presumption of innocence. Rather than presuming police must find the guilty party, DNA sweeps take the opposite approach, asking each member of the public (or at least each male member of the public) to prove his innocence. Presumably because it arose too late to be in the book,[23] Gerlach does not discuss the Holly Jones case in Toronto,

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[19] *Supra* note 1 at 152.

[20] *Ibid.* at 46.

[21] *Ibid.*

[22] *Ibid.* at 168.

[23] No doubt for the same reason Gerlach is only able to discuss the *B.(S.A.)* decision, which rejected a *Charter* challenge to the DNA databank provisions, at the Alberta Court of Appeal level ((2001), 293 A.R. 1). This is unfortunate, though nothing in the Supreme Court's analysis (*R. v. S.A.B.*, [2003] 2 S.C.R. 678) seems obviously inconsistent with Gerlach's theory. The Court does, somewhat surprisingly, frame their s. 8 analysis as a discussion of the principle against self-incrimination, rather than as a privacy issue: see David Stratas, *R. v. B.(S.A.) and the Right Against Self-Incrimination: A Confusing Change of Direction* (2004), 14 C.R. (6th) 227. However, Gerlach's concern is not the legal

where Michael Briere refused to provide a sample when the police requested one as part of such a sweep. The police accordingly placed him under surveillance for a period of time until they were able to obtain a sample surreptitiously.[24] As Briere was then charged with the offence one could look at this simply as good police work. On the other hand, does the approach differ in principle from the Susan Nelles case, a prosecution that ultimately led to an inquiry as to how things had gone off the rails? In that case, Nelles attracted police attention when she asserted her right to counsel before answering questions from the police, who had no special suspicions of her prior to that stage.[25] At that point, however, the police investigation fixed — wrongly — on her. Does the Briere case only seem like "good police work" because it produced a plausible suspect? Was it, assuming Briere is found guilty, in fact just good luck? How often do such approaches not lead anywhere, and what is the cost, both in resources and in liberty, that accompany them? As Gerlach notes, "there is a danger that as DNA testing technology is normalized, mass testing of the public will be normalized along with it."[26] He observes that there needs to be more discussion of the issue: this is correct, and it would have been good to have seen more of it here.

All of this arises, in Gerlach's view, because in effect we are living in a "hyperreality" where "future possibilities are treated as present realities and as such are shaping our current actions."[27] For example, science cannot actually predetermine genetically which people are more predisposed to crime. The DNA databank, however, does socially code some people in precisely that way. This type of effect is the source of Gerlach's title, the "genetic imaginary." What matters most is not the current state of DNA technology, but the future we expect to live in.

The book is well thought out, persuasive in its arguments and insightful. It is a useful "outside" perspective likely to raise ways of thinking about issues that would not readily occur to most of those working within it. It is an interesting read for anyone interested in the role DNA testing, and other technologies, ought to hold in the criminal justice system.

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reasoning itself but the presuppositions behind the legal reasoning.

24 *R. v. Briere*, [2004] O.J. No. 5611 (Ont. Sup. Ct. J.) (QL).

25 *R. v. Nelles* (1982), 16 C.C.C. (3d) 97 (Ont. Prov. Ct. (Crim. Div.)).

26 *Supra* note 1 at 203.

27 *Ibid.* at 5.