

Expert witness codes of conduct for forensic practitioners: a review and proposal for reform

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Abstract

In response to many miscarriages of justice attributed to forensic science, stakeholders in the justice system have proposed several reforms. One such reform is the broader use of expert witness codes of conduct to control the way in which forensic scientific evidence is reported in legal proceedings. In this article, the authors attempt to continue this discussion in three ways. They (1) review the use of expert witness codes of conduct in Australia and (2) compare that to their use in the civil context in Canada. The authors rely on that analysis to (3) suggest that a consensus-based code of conduct, modelled on reforms going on outside of forensic science, may assist in encouraging fuller and more cautious reporting by forensic scientists in Canadian courts.

Part I. Introduction

Numerous legal scholars, scientists, and judges have expressed serious concern about the use of forensic science in criminal cases and yet—relative to the magnitude of that concern—little has changed.¹ In this article, we address one component of the array of proposed responses, expert witness codes of conduct. In particular, the Motherisk Commission recently considered the impact of invalid hair analysis on many child protection cases in Ontario, and suggested that a firmly worded expert code of conduct may have helped prevent some of these tragedies.² In response to that suggestion, we examined the use and effects of expert witness codes of conduct in Australia and in the Canadian civil context. This analysis informs our ultimate proposal for a consensus-based expert witness code of conduct designed specifically for some forensic practices.

There is much at stake when it comes to forensic science in the criminal justice system. Most notably, invalid or overstated forensic scientific claims have been present

¹ For an overview of problems presented by forensic science in court, see: National Research Council of the National Academies, *Strengthening Forensic Science in the United States: A Path Forward* (Washington, DC: National Academies Press, 2009) [NAS Report]. Recent works find there is still much to do in improving forensic science and its use in court: US, President’s Council of Advisors on Science and Technology, *Forensic Science in Criminal Courts: Ensuring Scientific Validity of Feature-Comparison Methods* (Washington, DC: Executive Office of the President, 2016) [PCAST Report]; Jennifer L Mnookin, “The Uncertain Future of Forensic Science” (2018) 147:4 *Daedalus*, *J American Academy Arts & Sciences* 99; Chris Maxwell, “Preventing Miscarriages of Justice: The Reliability of Forensic Evidence and the Role of the Trial Judge as Gatekeeper” (2019) 93 *ALJ* 642.

² Ontario, *Harmful Impacts: The Reliance on Hair Testing in Child Protection: Report of the Motherisk Commission* (Toronto: Ministry of the Attorney General, 2018) (Hon Judith C Beaman) at 108–110 [Motherisk Commission].

in many wrongful convictions, both in Canada and abroad.³ This, in many cases, is likely due to these claims coming from authoritative figures that lay factfinders are likely to trust, but given without appropriate level of caution or objective *indicia* of the method's reliability. As the Supreme Court of Canada said in *R v Hart* (in the confessions context, but apparently speaking more broadly), this combination of unreliability and prejudice is dangerous:⁴

Experience in Canada and elsewhere teaches that wrongful convictions are often traceable to evidence that is either unreliable or prejudicial. When the two combine, they make for a potent mix — and the risk of a wrongful conviction increases accordingly. Wrongful convictions are a blight on our justice system and we must take reasonable steps to prevent them before they occur.

In the next part, we provide a brief primer on the types of forensic methods we are focusing on. Then, in Parts III and IV, we discuss expert witness codes of conduct as means to regulate the opinions provided by forensic practitioners. In Part V, we continue on to review how expert codes of conduct currently work in Canadian civil matters. Part VI concludes with our proposal for a consensus-based code of conduct designed for particular forensic fields.

³ See Maxwell, *supra* note 1; Emma Cunliffe & Gary Edmond, “What Have We Learned? Lessons from Wrongful Convictions in Canada” in Benjamin L Berger, Emma Cunliffe & James Stribopoulos, eds, *To Ensure that Justice Is Done: Essays in Memory of Marc Rosenberg* (Toronto: Thomson Reuters, 2017) 129; Brandon L Garrett & Peter J Neufeld, “Invalid Forensic Science Testimony and Wrongful Convictions” (2009) 95:1 Va L Rev 1.

⁴ *R v Hart*, 2014 SCC 52 at para 8, 2014 2 SCR 544.

Part II. Forensic feature comparison in court

Commentators generally agree that forensic science is in need of reform—both as it relates to conducting research and reporting findings in legal settings.⁵ They also tend to agree about what type of change would be beneficial: a move towards transparency, empiricism, scepticism, and concern about cognitive bias.⁶ Much of this work has focused on what are known as the “feature comparison” methods, or in other words, those in which the practitioner compares the features of an evidentiary sample (e.g., one found at a crime scene) with the features of a known sample from the suspect.⁷ These methods include DNA, fingerprint, and bitemark analysis. Our analysis will generally build on previous work by focusing on feature-comparison methods, but we think much of it can be extended to forensic science generally.⁸

Most fundamentally, many forensic practices do not have a strong research tradition behind them. Indeed, despite its longstanding use, appropriately designed studies

⁵ Jennifer L Mnookin et al, “The Need for a Research Culture in the Forensic Sciences” (2011) 58 UCLA L Rev 725; Gary Edmond et al, “Model Forensic Science” (2016) 48:5 Australian J Forensic Sciences 496 at 497–99 [Edmond et al, “Model Forensic Science”].

⁶ In 2011, a group of lawyers, sociologists, psychologists, and forensic scientists called for a “research culture” in forensic science research and reporting marked by “empiricism”, “transparency”, and an “ongoing critical perspective”. See Mnookin et al, *ibid* at 742–744. A similarly constituted group in 2016 recommended changes aimed at “Disclosure, transparency, epistemic modesty and impartiality.” See Edmond et al, “Model Forensic Science”, *ibid* at 496.

⁷ PCAST Report, *supra* note 1 at 1.

⁸ Mnookin et al, *supra* note 5 at 730 take a similar approach: “Although we focus primarily on pattern evidence, many of our arguments apply to forensic science more broadly”.

to test whether fingerprint analysis is accurate have only been conducted in the last decade.⁹ In court (which is the focus of this article), forensic scientists have regularly overstated their conclusions, failed to refer to relevant literature, and suppressed case-specific tests that may cast doubt on their opinion.¹⁰ As noted above, such practices have contributed to numerous wrongful convictions.

Critical reports and commentary, in particular a 2009 report from the National Academy of Sciences (NAS),¹¹ seem to have inspired some research, but many forensic practices remain unvalidated (i.e., we do not know if they work and if so, how accurate they are).¹² Furthermore, while some forensic practitioners have moderated the language they use in court to admit of more uncertainty, others persist to downplay the potential for error in their methods.¹³ Many practitioners also do not take steps to manage cognitive bias, such as by keeping themselves unaware of irrelevant but biasing details, like emotional case facts.¹⁴

Courts, as they did before the NAS Report, remain reluctant to step into the fray. Indeed, the NAS Report

⁹ See PCAST Report, *supra* note 1 at 87–88.

¹⁰ See: Garrett & Neufeld, *supra* note 3; Mnookin, *supra* note 1; Gary Edmond, Kristy Martire, Mehera San Roque, “Expert Reports and the Forensic Sciences” (2017) 40:2 UNSWLJ 590 [Edmond et al, “Expert Reports”]; Jason M Chin & D’Arcy White, “Forensic Bitemark Identification Evidence in Canada” (2019) 52:1 UBC L Rev 57; Gary Edmond, David Hamer & Emma Cunliffe, “A Little Ignorance Is a Dangerous Thing: Engaging with Exogenous Knowledge Not Adduced by the Parties” (2016) 25:3 Griffith L Rev 383.

¹¹ NAS Report, *supra* note 1.

¹² PCAST Report, *supra* note 1; Mnookin, *supra* note 1.

¹³ Mnookin, *ibid*; Chin & White, *supra* note 10.

¹⁴ See NAS Report, *supra* note 1 at 122–124.

stated that courts had been “utterly ineffective” in regulating forensic science.¹⁵ In this respect, many have argued that judges should make more use of admissibility rules that require demonstrable reliability to exert control over the forensic science presented in court.¹⁶ Excluding such evidence would create an incentive for the forensic community to perform more rigorous testing and moderate their claims.¹⁷

Beyond admissibility rules concerning reliability, Canadian courts recently created a common law rule that would, in some cases, exclude experts who were not sufficiently independent from the case and who behave partially.¹⁸ In a similar way in which a reliability rule might help regulate forensic science in court, this rule might also be applied to exclude forensic feature comparison experts who do not address the possibility of error and do not take steps to avoid cognitive bias. These rules, however, have not been applied this way.¹⁹

¹⁵ NAS Report, *supra* note 1 at 53.

¹⁶ Gary Edmond, “Forensic Science Evidence and the Conditions for Rational (Jury) Evaluation” (2015) 39:1 Melbourne UL Rev 77; Mnookin et al, *supra* note 5 at 759. In Canada, a reliability threshold was applied in *R v J-LJ*, 2000 SCC 51, [2000] 2 SCR 600.

¹⁷ Mnookin et al, *supra* note 5 at 759: “The judicial response to these identification techniques has therefore been a powerful force both enabling and preserving this status quo.[...] Had the courts applied *Daubert v Merrell Dow Pharmaceuticals, Inc.* with an intensity in the forensic sciences similar to that seen in, say, the toxic torts arena, there is little doubt that the forensic science community would have become forceful advocates for whatever research seemed necessary to justify admissibility”.

¹⁸ *White Burgess Langille Inman v Abbott and Haliburton Co.*, 2015 SCC 23, [2015] 2 SCR 182 [*White Burgess*].

¹⁹ Jason M Chin, Michael Lutsky & Itiel E Dror, “The Biases of Experts: An Empirical Analysis of Expert Witness Challenges” (2019) 42:4 Manitoba LJ 21.

Sometimes overlooked in the discussion of courts' reaction to forensic science is procedural reform, particularly the potential of expert witness codes of conduct.²⁰ We will now provide a brief background on those codes.

Part III. An expert witness code of conduct primer

Codes of conduct generally contain two components (see Online Supplement).²¹ First, they express the legal system's normative expectations of expert witnesses. In particular, they inform experts that their role is to provide "impartial" and "independent" evidence, with their ultimate duty to the court and proceedings, and not the retaining party.²² Second, some codes go on to ask experts to acknowledge they have met various requirements for the report, such as making salient any relevant qualifications to it and explaining any assumptions and facts relied on.

In these two components, there may be a way to encourage forensic scientists to present their evidence more carefully and transparently. These codes of conduct (and the common law rules about impartiality we just mentioned) provide norms about what the legal system expects of experts. But, as we will discuss below, forensic feature comparison witnesses do not seem to readily connect their duties as an expert witness to concrete behaviours

²⁰ But see Edmond et al, "Expert Reports", *supra* note 10; Jason M Chin, Mehera San Roque & Rory McFadden, "The new psychology of expert witness procedure" (accepted) *Sydney L Rev*.

²¹ Jason M Chin & Rory McFadden, "Civil Expert Codes of Conduct in Canada", online: <<https://osf.io/4axcs/>> [Online Supplement].

²² *Ibid.*

aligned with transparency and scepticism. In other words, they may not fully understand that their duty to the court includes acknowledging the possibility of error, informing themselves about the empirical research underlying their practice (if necessary), and reporting that information to the court (including the studies that are less supportive of their methods).

One way forward then is to design a code of conduct specifically for certain forensic practitioners, directly linking the witness's ethical obligations to specific disclosure-related acts. Before we delve into this idea in Part VI, it is useful to first examine how codes of conduct have been thought about and used in the past.

Part IV. Motherisk and the potential of expert witness codes of conduct

The Motherisk Commission

The Motherisk Commission responded to the revelation that, from 2005 to 2015, the Motherisk Drug Testing Laboratory (MDTL) had been providing scientifically invalid testing in thousands of child protection cases.²³ This hair testing, which purported to reveal drug and alcohol use, was relied on to separate many parents from their children. An independent review concluded that the testing was “inadequate and unreliable for use in child protection and criminal proceedings” and that its use had “serious implications for the fairness” of those thousands

²³ Ontario, Independent Reviewer, *Report of the Motherisk Hair Analysis Independent Review* (Toronto: Ministry of the Attorney General, 2015) (Hon Susan E Lang) [Lang Report]; Motherisk Commission, *supra* note 2.

of proceedings.²⁴ The subsequent Motherisk Commission, of which Justice Beaman was commissioner, engaged with many of those affected by the testing, assessed some of its harmful impacts, and identified factors in the system that contributed to the tragedy.

For the purpose of this article, we are most interested in Justice Beaman's discussion of the code of conduct in the Ontario *Family Law Rules* that applied at the time (it was subsequently amended).²⁵ She suggested that the Family Law code of conduct was not demanding enough, comparing it to the stronger code used in Federal Courts. The latter requires disclosure of limitations of the opinion, an item that Justice Beaman suggested may have helped. Being the most thorough statement we are aware of from a Canadian legal officer on the value of expert codes of conduct, Justice Beaman's comments are worth quoting extensively:²⁶

The *Family Law Rules* set out the duty of experts who provide evidence to be impartial. The Rules also require their reports to include certain information, including their qualifications, the instructions they received, and their opinions and reasons. The experts' opinions should include the assumptions on which they based their opinions and the research and documents they considered. The Rules do not require experts to include any information about the scientific limits of the method they are using, the possibility of contamination, or other issues

²⁴ Lang Report, *ibid* at 2.

²⁵ O Reg 114/99.

²⁶ Motherisk Commission, *supra* note 2 at 109.

that could affect the reliability of the opinions or test results. Had these requirements been in place, lawyers and judges may have been alerted to the need to probe the reliability of the Motherisk testing.

Other court rules do impose such requirements. Experts appearing in the Federal Courts (which do not hear child protection proceedings) are required to abide by a Code of Conduct. This Code of Conduct requires their reports to include “any caveats or qualifications necessary to render the report complete and accurate, including those relating to any insufficiency of data or research and an indication of any matters that fall outside the expert’s field of expertise.”

In the state of Victoria, Australia, the court requires experts to set out any limitation or uncertainty affecting the reliability of the methods, techniques, or data they relied on, and any limitations or uncertainty affecting the reliability of their opinions due to insufficient research or data. The experts must also disclose any significant and recognized disagreement or controversy in the field that is relevant to the expert’s technique, ability, or opinion

The Australian experience

Although we agree that the more demanding Federal and Australian rules are preferable, we still think that in the context of forensic science some work needs to be done for them to be as effective as they can be.

Our first concern is whether judges will vigorously enforce these codes of conduct. In particular, we recently

completed a review of the enforcement of Australian codes of conduct,²⁷ including the Victorian one mentioned by Justice Beaman.²⁸ We found only one case in which a court excluded an expert for breaching the code of conduct (we searched both civil and criminal cases because some Australian jurisdictions have expanded the use of codes of conduct into criminal matters).²⁹ In many cases, judges forgave not just failures to disclose something required by the code, but even situations when the expert admitted he or she was not even aware of the code when coming to the opinion. Given this state of affairs in Australia, we concluded that it was unlikely that tendering lawyers would encourage experts to take codes of conduct seriously if the courts tasked with enforcing them did not. It follows then that, if experts do not take codes seriously, then any (well-considered) reforms to their wording — like Justice Beaman mentioned — will have little value.

Second, even the stronger codes like those in Victoria and the Canadian federal courts contain linguistic ambiguity that forensic experts may, consciously or unconsciously, use to refrain from disclosing important limitations of their analysis. The Victorian code, for instance, says that experts must disclose disagreement of controversy when it is “directly relevant” to their opinion.³⁰ A forensic examiner

²⁷ Chin, San Roque & McFadden, *supra* note 20.

²⁸ Supreme Court of Victoria, *Practice Note No 2 of 2014* — Expert Evidence in Criminal Trials, 25 June 2014 (Reissued on 30 January 2017 and replaced by Supreme Court of Victoria, *Practice Note SC CR 3: Expert Evidence in Criminal Trials*, 30 January 2017) [Victorian Code].

²⁹ *Kyluk Pty Ltd v Chief Executive, Office of Environment and Heritage*, 2013 NSWCCA 114, (2013) 298 ALR 532 [*Kyluk*].

³⁰ Victorian Code, *supra* note 28.

may use that wording to support a number of rationalizations for why an absence of research or a few studies casting doubt on their method need not be mentioned. Similarly, the New South Wales expert code of conduct (“NSW Code”) requires.³¹

- (i) a declaration that the expert has made all the inquiries which the expert believes are desirable and appropriate (save for any matters identified explicitly in the report), and that no matters of significance which the expert regards as relevant have, to the knowledge of the expert, been withheld from the court

Here, subjectivity in things the “expert believes are desirable” and matters of significance which the expert “regards as relevant” may allow the expert to fall back on (deficient) forensic feature comparison norms about disclosure and scepticism, instead of what the legal system expects.

A recent NSW case, *DPP v JP* may be instructive in exposing some of the limitations of even a rather strong code.³² In that case, an expert fingerprint examiner provided a bare opinion that two fingerprints matched without disclosing the considerable human error present in this field that had recently been highlighted by the NAS. In a review of this case, Gary Edmond discussed the opinion’s

³¹ The NSW expert code of conduct can be found in the civil procedure rules but has been ported over to criminal courts in their rules: *Uniform Civil Procedure Rules 2005 (NSW)* sch 7, *Supreme Court Rules 1970 (NSW)* pt 75 div 1, 3j; *District Court Act 1973 (NSW)* s 171D.

³² *JP v Director of Public Prosecutions (DPP) (NSW)*, 2015 NSWSC 1669, (2015) 256 A Crim R 447 [JP].

apparent lack of compliance with the NSW Code:³³

The Crown relied on the testimony of a fingerprint examiner and an expert report that was not compliant with the jurisdictional expectations set out in the Code of Conduct for Expert Witnesses. The report did not explain what was done, list assumptions (e.g. uniqueness of fingerprints), explain the basis for the opinion, identify the ‘specialised knowledge’ (required by [Australian evidence law]), or refer to any limitations. There are, for example, no references to [fingerprint comparison methodology] and the process of review involved. There are no references to error, uncertainties, what the latent fingerprint examiner knew about the case when undertaking the comparison, and no images are included with the report.

The opinion in *JP* was ultimately admitted.³⁴

While much can be said about *JP*, for the purposes of this article we note that the expert witness code of conduct did not appear to work as it should have. The expert – who later testified he was not aware of much of the scientific research underpinning fingerprint analysis – did not provide any information about the mechanisms underlying his opinion, nor provide any notion of the possibility of error.³⁵ The controversy caused by *JP* did, however, have one salutary consequence. The NSW police updated their standard form expert report for fingerprint

³³ Gary Edmond, “Latent Science: A History of Challenges to Fingerprint Evidence in Australia” (2019) 38:2 UQLJ 301 at 344.

³⁴ *JP*, *supra* note 32 at paras 50–63.

³⁵ Edmond, *supra* note 33 at 344.

analysis to provide some discussion of the possibility of error.³⁶ That form, however, still understates that possibility and requires little actual discussion of how fingerprint analysis works.³⁷

Part V. A closer look at Canadian expert witness codes of conduct

To summarize the forgoing, the previous *Family Law Rules* expert code of conduct did not prevent the harmful impacts of the MTDL testing. Justice Beaman suggested that a more particularized code, like those found in some Australian jurisdictions, may help. As we discussed, however, forensic expert witnesses in Australia do not always provide opinions that comply with those codes and courts do not recognize and respond to these breaches.

Before continuing in Part VI with our idea for a consensus-based forensic expert code of conduct, it may be useful to first consider codes of conduct in the Canadian civil context. For instance, it may be that, unlike in Australia, Canadian judges are willing to enforce clear breaches of the expert codes of conduct.³⁸ As we discuss below, this is

³⁶ Edmond et al, “Expert Reports”, *supra* note 10 at 604: “The first thing to say about the Revised Certificate template is positive. It represents an improvement on what preceded it.”

³⁷ *Ibid* at 605–619.

³⁸ As noted above, Canadian courts developed a common law rule that excludes expert witnesses who are overly non-independent and/or partial, *White Burgess*, *supra* note 18. In Australia, these factors go to the weight ascribed to expert testimony and not whether they should be admitted, see *Chen v The Queen*, 2018 NSWCCA 106 at para 72, (2018) 97 NSWLR 915: “As was also discussed in *Wood*, however, the authorities establish that bias is not a reason for not admitting expert evidence”.

what we did find. We also found considerable variability in Canadian civil codes of conduct, with some quite specifically requiring disclosure of the opinions' weaknesses and others requiring little more than a signature. However, as in Australia, we found no case in which a court excluded an expert for failing to disclose limitations of their report (the aspect of codes highlighted by the Motherisk Commission).

Examining the civil codes

We assembled expert witness codes of conduct in the civil context.³⁹ These codes reside in court rules and rules of civil procedure. We did not find any cases which extended them to criminal proceedings.

We found considerable variability across jurisdictions. Seven jurisdictions require experts affirm their duty to the court in their expert report: British Columbia, Nova Scotia, Ontario, Prince Edward Island (which adopted Ontario's civil procedure rules), Quebec, Saskatchewan, and the Federal courts (see Table 1).

Under the theory that transparency and epistemic modesty are important in forensic science, we agree with Justice Beaman that experts should also positively acknowledge any limitations in their opinion (e.g., studies demonstrating the possibility of error in the method they used). Such an expression is required in Nova Scotia, the Northwest Territories, Nunavut, and the Federal courts. Along these lines, we think that Nova Scotia has the strongest transparency standard, requiring: "the report

³⁹ Online Supplement, *supra* note 21.

includes everything the expert regards as relevant to the expressed opinion and **it draws attention to anything that could reasonably lead to a different interpretation.**⁴⁰ Only Nova Scotia and Federal courts require both an acknowledgement of duty and have an item that asks experts to say whether they have disclosed limitations (see Table 1).

Some jurisdictions do not require the expert to affirm in their report that any particular disclosure has been made or that they are aware of any duty to the court. Those provinces are Manitoba, New Brunswick, and Newfoundland and Labrador. We refer to these as “no code” jurisdictions in Table 1.⁴¹

Enforcement of the codes

As to enforcement of the codes, we searched for cases in which experts were unaware of a code when constructing their opinion (despite their willingness to acknowledge it later in court). We found that many courts seemed quite concerned with this defect, excluding experts in such circumstances.⁴² In many of these cases, however, there were

⁴⁰ *Civil Procedure Rules*, 2009 at 55.04(1)(c) [emphasis added].

⁴¹ Alberta is not listed here. It provides a very minimal guidance, simply asking experts to disclose the basis of their opinion.

⁴² *Pelletier v Canada*, 2019 FCA 165, 305 ACWS (3d) 557; *West Moberley First Nations v British Columbia*, 2018 BCSC 1835, 301 ACWS (3d) 631; *Pichugin v Stoian*, 2014 BCSC 2061, 68 CPC (7th) 4 [Pichugin]; *Machander v Drader*, 2012 BCSC 1496, 82 ETR (3d) 92; *Klimek Estate v Klimek*, 2014 BCSC 1204, 242 ACWS (3d) 244; *Lawrence v Parr*, 2014 BCSC 2004, 246 ACWS (3d) 103 [Lawrence]; *Lozinski v Maple ridge (District)*, 2015 BCSC 2565, 264 ACWS (3d) 958 [Lozinski]; *Kidner Investments Ltd v Totem Mercury Holdings Ltd.*, 2017 BCSC 205, 66 BLR (5th) 98 [Kidner]; *Es-Sayyid v Canada (Minister of Public Safety & Emergency Preparedness)*, 2012 FCA 59, [2012] FCJ No. 250 [Es-Sayyid]; *Ottawa*

several other procedural defects with the opinion.⁴³ Still, some courts issued strong statements about the importance of the code of conduct:⁴⁴

A first, and to my mind critical, flaw is the failure of the expert to acknowledge and certify in the report that he understands and has complied with the obligations set out in Rule 11-2 to assist the court and to refrain from being an advocate, and that he has prepared his report in conformity with his duty. The absence of the required certification is not merely a matter of improper form or of poor practice, although it certainly is that. The purpose of the certification is to ensure both that the expert is, in fact, aware of his obligations and to give the court the comfort of knowing that it can rely on the report because it had been prepared in accordance with the expert's duty.

As noted above, this position contrasts with that in Australia, where courts almost always forgive failures to acknowledge the relevant code of conduct.⁴⁵

Despite these cases, many Canadian courts have

(City) v TKS Holdings Inc, 2011 ONSC 7633, 93 MPLR (4th) 224 [TKS].

⁴³ *Es-Sayid*, *ibid*; *Lawrence*, *ibid*; *Lozinski*, *ibid*; *Kidner*, *ibid*; *TKS*, *ibid*.

⁴⁴ *Pichugin*, *supra* note 42 at para 18. See also: *Mitusev v General Motors Corp.*, 2015 FCA 12 at para 11, 469 NR 379; *Cheung's Bakery-Products Ltd. v Saint Honore Cake Shop Ltd.*, 2013 FC 935 at para 19, 121 CPR (4th) 64 [emphasis added]: "As noted by the respondent, it is not in the interests of justice to make light of Rule 52.2 by permitting a witness to say nearly one year after preparing her expert evidence that she has complied with the Code of Conduct for Expert Witnesses after confirming on cross-examination that she had never seen or read it." The trial judge was overruled on this point in *Saint Honore Cake Shop Ltd. v Cheung's Bakery-Products Ltd.*, 2015 FCA 12, 469 NR 379.

⁴⁵ Chin, San Roque & McFadden, *supra* note 20.

excused non-compliance for expediency and fairness reasons,⁴⁶ because the expert did not seem partial,⁴⁷ and sometimes for no clear reason.⁴⁸

Recall that some jurisdictions have more onerous disclosure requirements than others in the civil sphere (Table 1). Although at least one court has endorsed the importance of these requirements,⁴⁹ we were unable to find many challenges to an expert report under these provisions. In one challenge, for example, the court was persuaded that a breach of the code should be excused because the expert provided more context under cross-examination.⁵⁰ While this may be acceptable in this civil context, many forensic scientists are not fully cross-examined in criminal cases because of lack of funding.⁵¹ Another challenge may be in

⁴⁶ *Canadian Doctors for Refugee Care v Canada (Attorney General)*, 2014 FC 651, 458 FTR; *Michienzi v Kuspira*, 2012 ONSC 2273 at para 23, 228 ACWS (3d) 137.

⁴⁷ *Cantlie v Canadian Heating Products Inc*, 2017 BCSC 286, 276 ACWS (3d), 782 in which the expert was forgiven for not signing the code because she did not see herself as a party expert and thus would not be partial to begin with; *Heiser's Health and Fitness LTD. v Saskatchewan Government Insurance*, 2019 SKQB 124, 305 ACWS (3d) 841.

⁴⁸ *Burge v Emmonds Estate*, 2017 BCSC 1526, 283 ACWS (3d) 656; *Canada (Board of Internal Economy) v Canada (Attorney General)*, 2017 FCA 43, 412 DLR (4th) 336.

⁴⁹ *Shaw v J.D. Irving Ltd*, 2011 NSSC 457 at para 6, 27 CPC (7th) 209.

⁵⁰ *Shannon v Frank George's Island Investments Ltd*. 2015 NSSC 76 at para 29, 257 NSR (2d) 168: "Indeed, I was satisfied that when Dr. Robertson was challenged on the contents of his reports, he had turned his mind to Rule 55.04. When the expert was stepped through the requirements of this rule, given his answers, I formed the strong impression that although he did not overtly refer to Rule 55 in his written opinions, Dr. Robertson made the appropriate representations to the Court." See also *Ferris v Scotia Life Insurance Company*, 2018 NSSC 216, 296 ACWS (3d) 334 for an example of a court struggling to determine if an expert's failure to reference certain materials violated the code of conduct.

⁵¹ Keith A Findley, "Innocents at Risk: Adversary Imbalance, Forensic Science,

determining if an expert's failure to acknowledge limitations was an instance of the expert disobeying the code or simply being unaware of limitations of the opinion.⁵²

Part VI. A forensic feature comparison code of conduct

In summary, attentive scientists, legal scholars, and legal actors have noted considerable shortcomings in the way forensic science is presented in court. The Motherisk Commission suggested expert codes of conduct may help address some of these concerns.⁵³ Canadian courts have expressed more enthusiasm about codes of conduct, but it generally seems difficult to police expert disclosure and circumspection.

In this context, we propose the development of a reform that expressly ties an expert's duty to several specific reporting practices that commentators have suggested may help courts more fully assess forensic scientific claims. In particular, we suggest as a first step the development of a "consensus-based transparency checklist" for forensic feature comparison experts in court.⁵⁴

Nudging adherence to epistemic norms in other fields

Over the past decade, there has been a movement

and the Search for Truth" (2008) 38:3 Seton Hall L Rev 893. In the child protection context, see Motherisk Commission, *supra* note 2.

⁵² *TDC Broadband Inc. v Nova Scotia (Attorney General)*, 2016 NSSC 206 at paras 44-50, 376 NSR (2d) 222.

⁵³ Motherisk Commission, *supra* note 2 at 109.

⁵⁴ Balazs Aczel et al, "A consensus-based transparency checklist" (2019) *Nature Human Behaviour*.

afoot in many fields of research (e.g., biomedicine, psychology, economics) aimed at improving transparency, disclosure, and scepticism – as well as limiting the ability of researchers to unconsciously sway their results.⁵⁵ It has sometimes been called a “credibility revolution”, with the idea being that cautious claims backed by transparent evidence will improve the credibility of the relevant fields.⁵⁶ This movement has produced several specific reforms to the way in which research is conducted and reported.⁵⁷ Many of these reforms have been tested and have demonstrably improved the way in which some fields are operating.⁵⁸

Broadly speaking, these reforms are attempting to bring researchers’ behaviours in line with epistemic norms like transparency and modesty. Within the general scientific research culture, it appears that most researchers will endorse such norms when specifically asked about them.

⁵⁵ BA Nosek et al, “Promoting an Open Research Culture” (2015) 348:6242 *Science* 1422; John P A Ioannidis, “How to Make More Published Research True” (2014) 11:10 *PLoS Med* e1001747; Rachel A Searston, “Truth and transparency in expertise research” (in press) *Journal of Expertise*, available online <<https://psyarxiv.com/bn85g>>.

⁵⁶ Simine Vazire, “Implications of the Credibility Revolution for Productivity, Creativity, and Progress” (2018) 13:4 *Perspectives on Psychological Science* 411.

⁵⁷ Nosek et al, *supra* note 55; Mallory C Kidwell et al, “Badges to Acknowledge Open Practices: A Simple, Low-Cost, Effective Method for Increasing Transparency” (2016) 14:5 *PLoS Biology* 1; Lucy Turner et al, “Does Use of the CONSORT Statement Impact the Completeness of Reporting of Randomised Controlled Trials Published in Medical Journals? A Cochrane Review” (2012) 1:60 *Systematic Reviews* 1. See generally Tom E Hardwicke et al, “Calibrating the scientific ecosystem through meta-research” (in press) *Annual Review of Statistics and its Application*, available online: <<https://osf.io/preprints/metaarxiv/krb58/>>.

⁵⁸ Christopher Allen & David M A Mehler, “Open science challenges, benefits and tips in early career and beyond” (2019) 17:5 *PLoS Biol* e3000246; Turner et al, *ibid*; Kidwell et al, *ibid*.

For example, one large survey of scientific researchers found that almost all respondents endorsed Robert Merton's scientific norms, which include openness and scepticism.⁵⁹ They are:⁶⁰

Communality: Scientists openly share findings with colleagues.

Universalism: Scientists evaluate research only on its merit, i.e., according to accepted standards of the field.

Disinterestedness: Scientists are motivated by the desire for knowledge and discovery, and not by the possibility of personal gain.

Organized Skepticism: Scientists consider all new evidence, hypotheses, theories, and innovations, even those that challenge or contradict their own work.

Despite subscribing to the above norms, survey respondents also said that their behaviour did not always reflect them, and that the behaviours of other researchers were even less in line with these expectations. Describing this difference between what researchers believe, what they do, and what they think others do as “normative dissonance”, the authors provided the following recommendation:⁶¹

⁵⁹ Robert K Merton, *The Sociology of Science: Theoretical and Empirical Investigations* (Chicago: University of Chicago Press, 1973); Melissa S Anderson, Brian C Martinson & Raymond De Vries, “Normative Dissonance in Science: Results From a National Survey of U.S. Scientists” (2007) 2:4 *Journal of Empirical Research on Human Research Ethics* 3.

⁶⁰ Anderson, *ibid* at 6.

⁶¹ *Ibid* at 12 [**emphasis added**].

Institutional leaders, administrators, and lab directors would do well to make deliberate reference to normative principles when making decisions, frankly discuss contradictions between norms and counternormative behaviors, and openly debate the normative implications of new situations that give rise to ethical dilemmas. Such steps would call attention to normative dissonance, thereby **diminishing its power as a covert force** in science.

Following from that recommendation, it strikes us that one difficulty with applying expert witness codes of conduct (both in general and with forensic scientists) is that they may be too abstract to establish normative dissonance. In other words, some of the codes we have reviewed in our research draw the expert's attention to a duty to the court. Some go on to explain some requirements of the expert's opinion and report. Some also then ask for a general acknowledgement that the expert has disclosed limitations in the opinion. Not one, however, expressly explained that behaviours like disclosing limitations were instantiations of the expert's overriding duty to the court. And not one asked for acknowledgments that were clearly associated with the field of forensic science. For instance, some experts may make the connection that explaining studies that found that forensic practitioners sometimes make mistakes is a limitation that should be exposed, but many may not.

Within many fields, reporting checklists are an emerging way of encouraging fuller disclosure and more modest claims. These checklists are often submitted when researchers send their findings to journals for peer review and dissemination. They require that authors acknowledge

whether or not they have taken various concrete steps like making their data available and saying whether or not they changed their methodology after seeing the results (and thus may have been susceptible to cognitive bias). These include CONSORT (Consolidated Standards of Reporting Trials) for clinical medical trials, PRISMA (Preferred Reporting Items for Systematic Reviews and Meta-Analyses) for systematic reviews, and CHEERS (Consolidated Health Economic Evaluation Reporting Standards) for economic evaluations.⁶² A 2012 systematic review found use of the CONSORT checklist was associated with fuller reporting.⁶³

Recently, a large group of researchers devised a checklist for their field (behavioural and social science) in a way that courts and forensic scientists may be particularly interested in.⁶⁴ This is because the checklist was created in a transparent and systematic consensus-based manner (a “reactive-Delphi” expert consensus process).⁶⁵ First, they identified many stakeholders in their field, like researchers and journal editors. They sent a first draft of their checklist to these individuals, asking whether they agreed or disagreed with the items, and asking for any additions or subtractions they thought would help. This process continued until a pre-specified level of agreement was reached. These researchers recently published their checklist along with a web tool. The web tool allows individuals to easily fill out the checklist online, with the website then producing a standard form that can be published along with the

⁶² See Equator Network, “Enhancing the QUALity and Transparency Of health Research”, available online: <<https://www.equator-network.org/>>.

⁶³ Turner et al, *supra* note 57.

⁶⁴ Aczel et al, *supra* note 54.

⁶⁵ *Ibid.*

research report.

Improving expert witness codes of conduct

A consensus-based checklist for forensic feature comparison could be an excellent first step to improve the current use of codes of conduct in Canadian courts. Such a checklist could be issued to forensic feature comparison experts (online or otherwise) when they are retained, with an explicit instruction on the form that the items are part of their duty to the court.⁶⁶ This initiative would need cooperation of the relevant courts, which likely can request experts to fill them out through their inherent jurisdiction to control their own processes (e.g., through practice directions).⁶⁷ There may be a great likelihood of getting involvement from courts in Canada as opposed to Australia given their willingness to exclude experts who were not aware of codes of conduct (see Part V).

As to development of such a code, there is already a great deal of academic work explaining what factfinders should know about forensic feature comparison.⁶⁸ These suggestions, like disclosing error rates and the potential for cognitive bias, can serve as a starting point for the consensus-based system. That said, one key distinction between forensic science and other fields is that forensic science exists in a legal-adversarial culture that may make imposition of a code a hard pill to swallow for many practitioners. A consensus-based system could potentially

⁶⁶ *White Burgess*, *supra* note 18.

⁶⁷ See e.g. the Ontario Superior Court of Justice is a superior court of record, *Courts of Justice Act*, RSO 1990, c C43 at s 11(1) (2).

⁶⁸ See the sources at note 1.

bridge some of this divide.⁶⁹

Moreover, there are many other challenges present in forensic feature comparison that a code of conduct cannot fully address. Most fundamentally, there is still a paucity of rigorous studies assessing the validity of many forensic practices (i.e., do they consistently return results that accord with the ground truth). A consensus-based code of conduct may encourage experts to acknowledge this lack of research, but it cannot directly improve this situation. And while a forensic code of conduct may help move forward the dialogue about what forensic practitioners should say in court, that is only one step towards changing the culture in forensic science.⁷⁰

Finally, we should ask if it is realistic for courts to begin encouraging parties to follow a forensic feature comparison code of conduct. We think that it is. Trial judges are already expected to wade into the fray and gatekeep unreliable science.⁷¹ They also regularly provide scientific knowledge to juries in their instructions about the frailties of eyewitness identifications.⁷² Collaborative initiatives (e.g.,

⁶⁹ We acknowledge that there will likely be considerable disagreement, with some parties unhappy with particular code of conduct outcomes. This may, however, be the way that progress is made.

⁷⁰ For example, one academic lab using open science principles has brought that mentality into its collaboration with forensic science labs and the police, see Samuel Robson et al, “How to Collaborate with Industry Using Open Science” (12 July 2019), online (blog): Center for Open Science <<https://cos.io/blog/how-to-collaborate-with-industry-using-open-science/>>.

⁷¹ *White Burgess, supra* note 18 at para 20: “The unmistakable overall trend of the jurisprudence, however, has been to tighten the admissibility requirements and to enhance the judge’s gatekeeping role”.

⁷² Jason M Chin & William E Crozier, “Rethinking the Ken Through the Lends of Psychological Science” (2018) 55 OHLJ 625.

between academic scientists and jurists) produced advances like the Victorian expert code of conduct mentioned above. And, in 2018, President Kingham of the Queensland Land Court developed a practice direction requiring experts to meet with a mediator in some cases.⁷³ Against that backdrop – and with the serious threat forensic science poses in mind – a consensus-based code for forensic expert witnesses seems justified.

⁷³ *Procedure for Court Managed Expert Evidence*, Practice Direction 3 of 2018.

Table 1

Table 1. The first column of this table lists jurisdictions with rules that require expert witnesses in civil cases to affirm a duty to the court when preparing their report. The second column lists jurisdictions with rules that require experts to disclose any information that would cast doubt on their opinion. The third column lists jurisdictions in which we could find no code of conduct in any court rules (i.e., rules that require either an expression of the expert's duty or requirements about the completeness of the expert report). Jurisdictions with an * require both a statement of the expert's duty and disclosure of information that could cast doubt on the opinion (i.e., they meet the requirements of columns 1 and 2).

| Expert affirms duty | Expert discloses caveats / qualifications / reservations | No Code |
|------------------------------------------------------------------------------------------|--------------------------------------------------------------|-----------------------------------------------------------|
| British Columbia Nova Scotia* Ontario PEI Quebec Saskatchewan Federal* | Nova Scotia* Northwest Territories Nunavut Federal* | Manitoba New Brunswick Newfoundland and Labrador |