The biases of experts: An empirical analysis of expert witness challenges

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Abstract

Biased expert witnesses pose a distinct challenge to the legal system. In the criminal sphere, they have contributed to several wrongful convictions, and in civil cases, they can protract disputes and reduce faith in the legal system. This has inspired a great deal of legal-psychological research studying expert biases and how to mitigate them. In response to the problem of biased experts, courts have historically employed procedural mechanisms to manage partiality, but have generally refrained from using exclusionary rules. Canada diverged from this position in 2015, developing an exclusionary rule in *White Burgess Langille Inman v Abbott and Haliburton Co.* In this article, we assembled a database of 229 Canadian bias cases pre- and post-*White Burgess* to evaluate the impact that this case had on the jurisprudence. The data suggests that *White Burgess* increased the frequency of challenges related to expert biases, however, did not noticeably affect the proportion of experts that were excluded. This suggests that the exclusionary rule introduced in *White Burgess* did not significantly impact the practical operation of expert evidence law, as it pertains to bias. We conclude by recommending that one way for courts to better address the problem of biased experts is to recognize the issue of contextual bias.

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Part I. Introduction

One of the most formidable hurdles in generating and conveying knowledge is curbing one's own biases; we often see what we want to see.[1] This can occur unintentionally and even unconsciously.[2] In law, many wrongful accusations and convictions have been attributed to biased expert judgments (we will parse the term "bias" in Part II).[3] In this vein, a great deal of recent research in the field of psychology and law has studied the biases of forensic experts and how to limit them.[4] Despite the detrimental effect expert bias has on legal proceedings, courts around the world have traditionally refrained from excluding experts for non-independence, partiality, or bias. Instead, courts have let concerns of bias affect the weight ascribed to an expert's testimony.[5] In 2015, the Supreme Court of Canada deviated from this position in *White*

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[1] Marcus Munafò et al, "A Manifesto for Reproducible Science" (2017) 1:1 Nature Human Behaviour 1 at 1 [Munafò, Science Manifesto].

[2] See Emily Pronin, Daniel Y Lin & Lee Ross, "The bias blind spot: Perceptions of bias in self versus others." (2002) 28:3 Personality and Social Psychology Bulletin 369. This is known as the bias blind spot and has been specifically demonstrated in both forensic science experts, as well as forensic psychology experts. See Jeff Kukucka et al, "Cognitive Bias and Blindness: A Global Survey of Forensic Science Examiners" (2017) 6:4 Journal of Applied Research in Memory and Cognition 452 [Kukucka et al, Forensics Survey]; Patricia A Zapf et al, "Cognitive Bias in Forensic Mental Health Assessment: Evaluator Beliefs About Its Nature and Scope" (2018) 24:1 Psychology, Public Policy and Law 1 [Zapf et al, Forensic Mental Health Survey].

[3] See, e.g., Ontario, *The Commission on Proceedings Involving Guy Paul Morin: Report* (Toronto: Ministry of the Attorney General, 1998) vol 1 (The Honourable Fred Kaufman, C.M., Q.C.) at 100 [Morin Report]: "rather than remaining neutral and dispassionate, [the expert] acted in a manner favouring the objectives of the prosecution…"; Ontario, *Inquiry into Pediatric Forensic Pathology in Ontario: Report* (Toronto: Ministry of the Attorney General, 2008) vols 1–4 (The Honourable Stephen T Goudge) at 43, 69, 79, 153-156, 374-377 [Goudge Report]; A Review of the FBI's handling of the Brandon Mayfield Case. U.S. Department of Justice, Office of the Inspector General (2006), online: <http://oig.justice.gov/special/s0601/final.pdf>. See generally Bruce MacFarlane, "Convicting The Innocent: A Triple Failure of the Justice System" (2005-2006) 31:3 Manitoba LJ 403-488 [MacFarlane]; Emma Cunliffe, "Observations about the quality of the investigation of Colten Boushie's death should be assessed against the backdrop of wider systemic racism" (27 September 2018), online: *Policy Options* < http://policyoptions.irpp.org/magazines/september-2018/the-forensic-failures-of-the-stanley-trial/>.

[4] See Itiel E Dror, "Biases in forensic experts" (2018) 360:6386 Science 243 [Dror, Biases in forensic experts]; Itiel E Dror, "A Hierarchy of Expert Performance (HEP)" (2016) 5:2 Journal of Applied Research in Memory and Cognition at 121.

[5] See, for example, *White Burgess Langille Inman v Abbott and Haliburton Co*, 2015 SCC 23 at paras 41-44, [2015] 2 SCR 182 [*WBLI*]; Paul Michell & Renu Mandhane, "The Uncertain Duty of the Expert Witness" (2005) 42:3 Alta L Rev 635 at 650 [Michell & Mandhane]; The Australian position, in *Uniform Evidence Law* jurisdictions (New South Wales, Victoria, Tasmania, the Northern Territories, and the Australian Capital Territory) was recently

Burgess Langille Inman v Abbott and Haliburton Co. ("*WBLI*"), holding that bias can be cause to exclude an expert's testimony.[6] In this article, we report the results of an empirical study attempting to measure the impact of the exclusionary rule put forth in *WBLI*. Our results suggest that *WBLI* did not change the practical operation of evidence law in Canada, as it pertains to bias. As a result, courts around the world may wish to learn from the Canadian experience and employ a more expansive and multi-faceted approach to the biases of expert witnesses.

There are many reasons to be concerned with the biases of expert witnesses: bias can reduce the accuracy of the expert's opinion, diminish the public's faith in the justice system, and create unjust, potentially life-ruining, outcomes. Exacerbating the problem, research has found that the vast majority of experts believe that they can overcome such biases through mere willpower, a naïve belief that psychologists have long concluded to be misguided.[7] Despite the threat they can pose to justice, experts often carry a lot of weight in the trial process, possessing knowledge the judge and jury cannot be expected to have.[8] As a result, the Supreme Court of Canada, in *WBLI,* was faced with a difficult task: in an adversarial system that is inherently inundated with bias, how much bias is too much? Or, put differently, when should trial judges intervene if it seems likely that the expert is biased and partial?

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reaffirmed in *Chen v R* [2018] NSWCCA 106; In the U.S., see Daniel J Capra et al "Forensic Expert, Testimony, Daubert, and Rule 702" (2018) 86:4 Fordham L Rev 1463.

[6] *WBLI*, *supra* note *5*; About *WBLI*, Peter Sankoff writes: "**The decision was an extremely important one**. Previously, Canadian courts were divided about whether experts could be excluded where there were signs of bias or partiality, and, if so, in what circumstances. The Supreme Court attempted to provide more transparent standards for the admissibility inquiry, recognizing that questions of bias need to be treated seriously, though with an understanding of the basic realities of the adversarial process…" [**emphasis added**] Alan W Mewett & Peter J Sankoff, *Witnesses* (Toronto: Carswell, 2018) at chapter 16.8 [Mewett & Sankoff].

[7] Kukucka et al, Forensics Survey, *supra* note 2; Zapf et al, Forensic Mental Health Survey, *supra* note 2.

[8] *R v D(D)*, 2000 SCC 43 at para 57, [2000] 2 SCR 275 [*DD*]; Jason M Chin & William E Crozier, "Rethinking the Ken Through the Lens of Psychological Science" (2018) 55:3 Osgoode Hall Law Journal 625 [Chin & Crozier].

In what follows, we will first review the ways in which experts can become biased (Part II) and how courts have traditionally approached these issues (Part III). Then, in Part IV, we will discuss the Canadian approach for dealing with this issue, as it was laid down in *WBLI*. Part V includes an empirical analysis of the pre-and post *WBLI* case law, finding that any effect *WBLI* had on the biased expert witness jurisprudence was likely insignificant. Part VI concludes and offers some preliminary reflections on how courts in the future can more effectively deal with expert bias.

Part II. A Panoply of Biases

> … I propose that people motivated to arrive at a particular conclusion attempt to be rational and to construct a justification of their desired conclusion that would persuade a dispassionate observer. They draw the desired conclusion only if they can muster of the evidence to support it. In other words, **they maintain an 'illusion of objectivity'**. To this end, **they search memory for those beliefs and rules that could support their desired conclusion**. They may also **creatively combine accessed knowledge to construct new beliefs that could logically support their desired conclusion**. It is this process of memory search and belief construction that is biased by directional goals. **The objectivity of this justification construction is illusory because people do not realize that the process is biased by their goals, that they are accessing only a subset of their relevant knowledge, that they would probably access different beliefs and rules in the presence of different directional goals, and they might even be capable of justifying opposite conclusions on different occasions**.[9]

Before discussing the Canadian approach and its effectiveness, it will be useful to parse the various types of biases and causes of bias that scholars and courts have considered.

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[9] Ziva Kunda, "The Case for Motivated Reasoning" (1990) 108:3 Psychological Bulletin 480 at 482-483[Kunda, **emphasis added**].

Moreover, we will explain that biases are extensive and pernicious.[10] As Ziva Kunda describes in the above quote, cognitive scientific research finds that these biases can contaminate the expert's memory and reasoning processes in ways they cannot know.[11] Experts may therefore labour under what psychologists term a "bias blind spot" resulting in the "illusion of objectivity".[12] In law, this can result in expert witnesses seeing their own field and work as balanced and fair, while more easily seeing others as biased.[13] For instance, in a 2017 survey of forensic science examiners, approximately 71% agreed that cognitive bias is a cause for concern in forensics, but only 26% agreed that it impacted their own judgments.[14] These issues may be pronounced for intuitive, subjective, or experience-based forms of expertise, because such expertise does not follow a chain of reasoning that can be scrutinized for bias.[15]

We use the term "bias" broadly in this article to describe any systematic error in reasoning and thinking that can alter an individual's memory, perception, and decision making.[16] In this manner, there are several causes and forms of bias (and we do not intend to provide an exhaustive list). In the interest of brevity, and in light of the existing research examining these concepts, we will provide only a cursory (and bulleted) overview:

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[10] Richard H Thaler & Cass A Sunstein, *Nudge: Improving decisions about health, wealth and happiness* (London, England: Penguin, 2009) at 19-42 "Biases and Blunders"; Munafò, Science Manifesto, *supra* note 1 at 2; D Michael Risinger et al, "The *Daubert*/*Kumho* implications of observer effects in forensic science: Hidden problems of expectation and suggestion" (2002) 90:1 California Law Review 1.

[11] David M Paciocco, "Unplugging Jukebox Testimony in an Adversarial System: Strategies for Changing the Tune on Partial Experts" (2009) 34:2 Queen's LJ 565 at 567 [Paciocco, Jukebox]; David E Bernstein, "Expert Witnesses, Adversarial Bias, and the (Partial) Failure of the Daubert Revolution" (2008) 93 Iowa L Rev 451 at 455-456 [Bernstein, Partial Failure].

[12] Kathleen A Kennedy & Emily Pronin, "Bias Perception and the Spiral of Conflict" in Jon Hanson and John Jost (eds), Ideology, Psychology, and Law (Oxford University Press, 2012); Kunda, *supra* note 9.

[13] Kukucka et al Forensics Survey, *supra* note 2; Zapf et al Forensic Mental Healthy Survey, *supra* note 2.

[14] Kukucka et al Forensic Survey, *supra* note 2 at 454.

[15] Paciocco, Jukebox, *supra* note 11 at 578; Jason M Chin, Jan Tomiska & Chen Li, "Drawing the Line Between Lay and Expert Opinion Evidence" (2017) 63:1 McGill LJ 89 [Chin et al, Opinion Evidence].

[16] Martie G Haselton, Daniel Nettle & Damien R Murray, "The Evolution of Cognitive Bias" in David Buss ed, *The Handbook of Evolutionary Psychology* (Hoboken: John Wiley & Sons, Inc, 2015).

- **A relationship or** what Paciocco referred to as an **association bias**.[17] Simply being assigned a side (even at random) can unconsciously bias an expert toward that side.[18] Additionally, many forensic experts work for the police (some forensic crime laboratories are even part of the prosecuting District Attorney's Office), which can also be a source of organizational relationship bias.

- **A tangible reward**. A financial stake in the outcome of a case (including the possibility of being retained again) may unconsciously bias the expert in favour of one side.[19]

- **Pre-existing views and selection bias**.[20] An expert may be selected because he or she has a particular view on an issue, which may diverge from the consensus in the field.[21] For example, there may be a dispute in real estate about how to most accurately assign a value to property. The court will have a hard time knowing whether the expert's view is orthodox because parties will be motivated to retain a witness whose opinion accords with their case theory. Pre-existing views (including whether an accused is guilty or

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[17] *Ibid* at 577.

[18] See Daniel C Murrie et al, "Are Forensic Experts Biased by the Side That Retained Them?" (2013) 24:10 Psychological Science 1889. In the Murrie et al study, practicing forensic psychologists were told they were retained by the defence or prosecution with minimal instructions as to how they should perform their assessment task: "The attorney addressed the defense-allegiance participants with statements that are typical of many defense attorneys (e.g., 'We try to help the court understand that the data show not every sex offender really poses a high risk of reoffending'). Likewise, he addressed participants in the prosecution-allegiance condition with statements that are typical of prosecutors (e.g., 'We try to help the court understand that the offenders we bring to trial are a select group whom the data show are more likely than other sex offenders to reoffend'). In both conditions, he asked participants to score the offenders using the two risk instruments. He also hinted at the possibility of future opportunities for paid consultation." [Murrie, Forensic Experts].

[19] Paciocco, Jukebox, *supra* note 11 at 577; Bernstein, *supra* note 11 at 455.

[20] Paciocco, Jukebox, *supra* note 11 at 575-584.

[21] *Ibid*. This view may result from a "professional bias", such as a practitioner of a certain methodology seeking to defend that method despite evidence suggesting it is flawed. It may also flow from "noble cause distortion", with experts in some areas seeing themselves on the "side of good", thus making it morally acceptable (in their minds) to dissemble in their evidence and testimony.

innocent) may result in **confirmation bias**, as the expert tends to distort information to fit that view.[22]

- **Contextual bias**. Contextual information, such as emotional case facts or whether the accused confessed, has a demonstrable and well-supported impact on decision making.[23] This biasing contextual information can impact relatively robust domains of forensic science, such as fingerprinting[24] and DNA.[25] Oftentimes, such information is irrelevant to the expert's task.[26] Contextual bias, although the focus of a great deal of recent scientific research, is rarely expressly considered by courts.[27]

- **Bias cascades.** Biases not only impact an individual expert at one stage of the investigation, but they can cascade to other aspects of the investigation and also impact other experts and legal professionals.[28] For instance, a crime scene investigator may be impacted by irrelevant contextual information at the crime scene, and then also be impacted by the same biasing information when her or she analyzes the evidence back at

[22] Raymond S Nickerson, "Confirmation Bias: A Ubiquitous Phenomenon in Many Guises" (1998) 2:2 Rev General Psychology 175; Alan D Gold, *Expert Evidence in Criminal Law: The Scientific Approach*, 2nd ed (Toronto: Irwin, 2009) at 98.
[23] Gary Edmond et al, "Contextual Bias and Cross-contamination in the Forensic Sciences: the Corrosive Implications for Investigations, Plea Bargains, Trials and Appeals" (2014) 14:1 L Probability & Risk 1 [Edmond et al, Contextual bias]; United States, President's Council of Advisors on Science and Technology, Forensic Science in Criminal Court: Ensuring Scientific Validity of Feature-Comparison Methods, Report to the President, September 2016 (Washington DC: Executive Office of the President, 2016) at 31[PCAST Report].
[24] Itiel Dror & Robert Rosenthal, "Meta-analytically quantifying the reliability and biasability of forensic experts" (2008) 53:4 Journal of Forensic Sciences 900.
[25] Itiel Dror & Greg Hampikian, "Subjectivity and bias in forensic DNA mixture interpretation" (2011) 51:4 Science and Justice 204.
[26] Edmond et al, Contextual bias, *supra* note 23 at 2.
[27] See Part VI.
[28] Dror, Biases in forensic experts, *supra* note 4; Itiel Dror et al, "The Bias Snowball and the Bias Cascade Effects: Two Distinct Biases That May Impact Forensic Decision Making" (2017) 62:3 Journal of Forensic Sciences 832 [Dror, Snowball]. See *R v Howard*, [1989] 1 SCR 1337 discussing the possibility that confession evidence may have cascaded into the expert shoeprint identification opinion.

the crime laboratory. Hence, the bias cascades from one aspect (CSI) to another aspect (analytic work in the crime laboratory) of the investigation.

- **Bias snowball.** Bias can also snowball when forensic examiners are exposed to irrelevant details about the case and then share these details as well as their biased conclusion or case theory with another examiner. Bias then snowballs (i.e., increases in magnitude) because the bias now has a double impact (i.e., the direct impact of the biasing information itself, as well as its indirect impact via the conclusion of the other examiner). Then, more bias snowballing can occur when the factfinder hears from both examiners, each presenting their finding as if they are independent lines of evidence.[29]

The various biases listed above can originate from three general sources: (1) specific case-related information, (2) wider factors relating to the expert and the environment, and (3) human nature (see Figure 1).

[**Figure 1 about here**]

Specific case-related information includes any irrelevant information that experts do not need in order to do their work (e.g., police suspicions, information about the investigation, emotionally evocative case facts, the suspect's past criminal record, their race or religion).[30] This is commonly referred to as "domain irrelevant information".[31] In addition, sometimes even relevant information, such as reference materials (e.g. the suspect's fingerprint, DNA, handwriting, etc) can bias an expert's opinion or analysis.[32] To illustrate, an expert who is

[29] Dror, Snowball, *ibid*.
[30] Edmond et al, Contextual bias, *supra* note 23.
[31] *Ibid*.
[32] Jeanguenat, Budowle, & Dror, "Strengthening Forensic DNA decision making through a better understanding of the influence of cognitive bias" (2017) 57:6 Science and Justice 415

presented with a suspect's reference materials may perceive or interpret the actual evidence from the crime scene in a way that is consistent with those of the suspect. That is, the expert goes backwards from the suspect to the evidence, rather than from the evidence to the suspect; this phenomenon has been termed "suspect/target driven bias".[33]

The wider factors that can bias experts include their experience, training, background, motivation, and organizational culture.[34] And lastly, the biasing factors related to fundamental human nature arise from cognitive architecture and how the brain processes information. For example, humans use unconscious mental shortcuts known as heuristics that produce economies but can slant judgment away from rational outcomes in many cases.[35] These are independent of the specific case and the expert involved.[36]

Before proceeding, it is important to emphasize that research findings are clear: experts are not immune to any of the biases and contextual influences discussed above.[37]

Influential legal decisions (and later, *WBLI* itself) generally do not engage with the science of cognitive bias, and, perhaps as a result, simply classify biases into two categories: independence and partiality.[38] Independence concerns the expert's relationship with either the parties to the litigation (e.g., a friendship with the defendant) or with the litigation itself (e.g., a financial stake in the outcome.) Courts generally accept some level of non-independence, as

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[33] *Ibid*.
[34] Murrie, Forensic Experts, *supra* note 18.
[35] Daniel Kahneman, Thinking, Fast and Slow (New York: Farrar, Straus and Giroux, 2011).
[36] Itiel Dror, "Human expert performance in forensic decision making: Seven Different Sources of Bias" (2017) 49:5 Australian Journal of Forensic Sciences 541. [Dror, Sources of Bias].
[37] See Itiel E Dror et al, "No one is immune to contextual bias—Not even forensic pathologists" (2018) 7:2 Journal of Applied Research in Memory and Cognition 316
[38] Paciocco, Jukebox, *supra* note 11 at 572: "As has been pointed out, bias can be a function either of a lack of independence or a lack of impartiality." *National Justice Compania Niveira S.A. v Prudential Assurance*, [1993] FSR 563 at 565, [1993] 2 Lloyd's LR 68 [*The Ikarian Reefer*]; Michell & Mandhane, *supra* note 5 at 638-638; *WBLI*, *supra* note 5 at 48-49. See also Mewett & Sankoff, *supra* note 6 at chapter 16.8(ii)-(iii).

experts are typically retained and paid by one party.[39] Partiality refers to the expert's biased state of mind or attitude, and generally manifests itself in some sort of behaviour. [40] It may flow from non-independence, a pre-existing belief, contextual cues, or other similar sources.

Part III. Addressing bias in courts

> There is a tendency in every expert to have an unconscious bias in favour of the party who calls him as a witness.[41]

Given the many influences that can slant an expert's judgment, courts have, unsurprisingly, been concerned with the objectivity of experts for centuries.[42] However, an English decision from the early 1990s, *National Justice Compania Niveira S.A. v Prudential Assurance* ("*The Ikarian Reefer*") is often credited with the modern interest in bias.[43] In that case, Creswell J, troubled by a protracted battle of experts, laid out several duties and responsibilities of expert witnesses (e.g., independence, impartiality).[44] *The Ikarian Reefer* inspired a great deal of procedural reform (e.g., expert codes of conduct, jointly appointed experts) and wide acceptance that experts owed a duty of independence and impartiality.[45]

Still, the existence of such a duty and new procedures can only go so far. As we discussed above, experts will rarely be aware of their biases, and therefore simply reminding

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[39] Paciocco, Jukebox, *supra* note 11 at 573.
[40] Paciocco, Jukebox, *ibid*; Michell & Mandhane, *supra* note 5 at 638-639.
[41] *Earle Smith Construction Co v Aylmer High School Board* [1940] OJ 244 at para 26.
[42] See; *Lawrence v Pehlke (Trustee of)*, [1937] OJ No 63; *Abinger v Ashton*, 17 LR Eq 358 at 374 (Ch 1873).
[43] *The Ikarian Reefer*, *supra* note 38; *WBLI*, *supra* note 5 at paras 26-32; Gary Edmond, "After Objectivity: Expert Evidence and Procedural Reform" (2003) 25 Sydney Law Review 131 [Edmond, After Objectivity].
[44] *The Ikarian Reefer*, *ibid* at 565.
[45] For a review in Canada see: Paciocco, Jukebox, *supra* note 11 at 585; Michell & Mandhane, note 5 at 641-646. In Australia, see, Edmond, After Objectivity, *supra* note 43. For post-*Ikarian Reefer* interest in the experts' duties, see: *DD*, *supra* note 8; *R v K(L)*, 2011 ONSC 2562 [*KL*], 94 WCB (2d) 755; *Deemar v College of Veterinarians*, 2008 ONCA 600, 298 DLR (4th) 305 [*Deemar*].

them of their duty to be objective and impartial may often prove ineffective. Moreover, even if experts are aware of their biases, such biases cannot simply be overcome through mere willpower.[46] Indeed, even in the face of admonitions from bodies like the National Academy of Sciences about the danger of cognitive biases in the forensic sciences, forensic examiners – testifying in court – continue to deny the importance of blinding themselves to biasing information.[47] As a result, it may be that simply demanding expert witnesses be "objective" (a somewhat nebulous notion itself) is not enough, raising the question of whether a potentially biased expert ought to be excluded altogether.[48]

In Canada, post-*Ikarian Reefer* cases disagreed about whether it was appropriate to exclude experts who appeared to violate their duty to the court (although, as we will see, many courts did opt to exclude experts for bias).[49] Some courts and commentators suggested that the influential Ontario appellate decision in *R v Abbey* opened the door to excluding biased testimony under the trial judge's residual discretion to exclude evidence when its costs exceed its benefits to the trial process (with bias diminishing the benefits of admitting the evidence through

[46] Dror, Biases in forensic experts, *supra* note 4.
[47] 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 Law Review 383; Edmond, After Objectivity, *supra* note 43; Jason M Chin & D'Arcy White, "Forensic Bitemark Identification Evidence in Canada" (2019) 52:1 UBC LR 57.
[48] Paciocco, Jukebox, *supra* note 11 at 589-591. Edmond, After Objectivity, *supra* note 43.
[49] For exclusions, see: *R v Kovats*, 2000 BCPC 176, 2000 CarswellBC 3154; *R v Docherty*, 2010 ONSC 3628, 89 WCB (2d) 408; *R v Morrissey*, 8 CR (6th) 27, 2002 CarswellOnt 3439. For a prominent decision holding that bias goes only to weight, see *R v Klassen*, 2003 MBQB 253, 179 Man R (2d) 115. For a review, see: *WBLI*, *supra* note 5 at paras 35-40; *Van Bree*, 2011 ONSC 4273 at paras 36-49, 96 WCB (2d) 22 [*Van Bree*]; *KL*, *supra* note 45 at paras 9-22, 86 CR (6th) 98. See also *Deemar*, *supra* note 45.

reduced reliability).[50] These cases, along with influential academic scrutiny of the Canadian judicial approach to bias, set the stage for *WBLI*.[51]

Part IV. *White Burgess Langille Inman v Abbott and Haliburton Co*

WBLI expanded – in form – the Canadian approach to potentially biased experts in two principal ways. First, it confirmed that concerns about an expert's bias go to both weight *and admissibility*.[52] Second, Cromwell J, writing for the court, held that (some level of) unbiasedness is both a factor in the trial judge's discretionary exclusion of expert evidence (based on weighing its probative value and prejudicial effect) *and a threshold requirement*.[53]

As to the threshold inquiry, the Court held that bias ought to be considered under *Mohan*'s "properly qualified expert" element.[54] Moreover, this threshold can generally be met with the expert's recognition (and oath) as to his or her duty to the court to be independent and

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[50] *R v Abbey*, 2009 ONCA 624 at para 87, 97 OR (3d) 330: "When one looks to potential probative value, one must consider the reliability of the evidence. Reliability concerns reach not only the subject matter of the evidence, but also the extent to which the expert is shown to be impartial and objective". See *Van Bree*, *supra* note 49 at paras 36-56, 97; Lisa Dufraimont, "New Challenges for the Gatekeeper: The Evolving Law on Expert Evidence in Criminal Cases" (2012) 58:3&4 Crim LQ 531 at 553-554.

[51] See Paciocco, Jukebox, *supra* note 11; Hon S Casey Hill et al., *McWillams' Canadian Criminal Evidence*, looseleaf, 4th ed (Toronto: Canada Law Book, 2008) at 12-58 [McWilliams]. The approach of the authors of McWilliams and Paciocco was, for the most part, ultimately adopted by the Supreme Court of Canada. Compare Paciocco, Jukebox, *supra* note 11 at 595-599 with *WBLI*, *supra* note 5 at paras 52-54. The Supreme Court in *WBLI* also relied heavily on Michell & Mandhane, *supra* note 5, which argued against an exclusionary rule in the context of civil trials.

[52] See the sources at *supra* note 49.

[53] *WBLI*, *supra* note 5 at paras 52-54.

[54] *Ibid* at para 53. The full expert evidence admissibility rule (which gradually evolved from *Mohan* to *Abbey*, and then to *White Burgess*) can be summarized as follows: "Under the first step of the test, the opinion must meet four preconditions: logical relevance, absence of an exclusionary rule, a properly qualified expert, and necessity (note *Abbey* had relegated necessity to the second stage). Further, novel or contested science must receive special reliability scrutiny […]. If the evidence passes the first step, only then does it receive the discretionary costs-benefits weighing, which also includes reliability and any bias or partiality the expert may possess."; Jason M Chin, "Abbey Road: The (ongoing) journey to reliable expert evidence" (2018) Canadian Bar Review 96:3 422 at 429 [citations omitted]. See *WBLI*, *ibid* at paras 14-25.

impartial.[55] A challenge establishing a "realistic concern" that the expert is "unable and/or unwilling to comply with that duty"[56] then shifts the burden to the party proffering the expert to prove otherwise.[57] The Court was also careful to state that the threshold was "not particularly onerous" and that it would be "quite rare that a proposed expert's evidence would be ruled inadmissible".[58]

As to what level of biasedness would warrant exclusion, the Court seemed to rely on the two general categories of bias outlined above: independence and impartiality.[59] The court noted that independence can be interfered with by the expert's interest in or relationship to the current proceeding. [60] On this point, Cromwell J said that a direct financial interest in the outcome of the case or a very close familiar relationship with one of the parties may be cause for concern, but mere employment with a party would likely be insufficient to exclude the expert.[61] The second category includes any sort of demonstrable partiality, such as assuming "the role of an advocate".[62] In either case, the Court clarified that a mere reasonable apprehension of bias, the standard used for disqualifying judges and administrative decision makers, was inapplicable.[63] Rather, as stated above, the test is whether the expert is unwilling or unable to comply with his or

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[55] The court largely adopted the framework proposed by Professor (as he then was) Paciocco and the authors of McWilliams, see *supra* note 51.
[56] *WBLI*, *supra* note 5 at para 48.
[57] *Ibid*. This must be established on a balance of probabilities.
[58] *Ibid* para 49.
[59] *Ibid* at paras 32, 49. The first prong seems to align with what the Court referred to earlier as impartiality and bias: "The expert's opinion must be impartial in the sense that it reflects an objective assessment of the questions at hand…. It must be unbiased in the sense that it does not unfairly favour one party's position over another." The second aligns with a lack of independence: "It must be independent in the sense that it is the product of the expert's independent judgment, uninfluenced by who has retained him or her or the outcome of the litigation." They also generally correspond with the categories provided by Peter Sankoff (Mewett & Sankoff, *supra* note 6 at 16.8(ii)-(iii)) in his analysis of case law: "interest in the proceeding" and "demonstrated absence of objectivity". See also Michell and Mandhane, *supra* note 5 at 642-644; Paciocco, Jukebox, *supra* note 11 at 573-574.
[60] *WBLI*, *supra* note 5 at para 49.
[61] *Ibid*.
[62] Examples of this prong cited in *WBLI*, *ibid* at para 37. See also Michell & Mandhane, *supra* note 5 at 648.
[63] *WBLI*, *ibid* at para 50.

her duty to the court.[64] The Court also held that concerns about independence and impartiality should factor into the trial judge's residual discretion to exclude evidence when its costs outweigh its benefits.[65]

WBLI is undoubtedly an important case.[66] It provides useful clarification on the place of bias in the *Mohan* test. Indeed, as Cromwell J stated, inserting bias into the test, "ensures that the courts will **focus expressly on the important risks associated with biased experts**".[67] The case also walks a fine line. While arguably adding to the trial judge's gatekeeping responsibilities, it set a high bar for establishing bias. In doing so, it recognized that the reality of an adversarial system is that an expert witness will feel some level of allegiance with the party calling him or her.[68] Therefore, there is a question as to whether such an approach would actually lead to more exclusions, or if its main contribution would be in simply making courts and advocates more aware of issues of expert bias.

Part V. Bias cases, pre- and post-*White Burgess*

In our study of pre- and post-*WBLI* decisions, we sought to examine what effect an exclusionary rule would have on expert bias jurisprudence. Did it inspire more challenges? Were experts more likely to be excluded or see the weight accorded to their evidence reduced? And if

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[64] In *WBLI* itself, the impugned expert was a partner at a the accounting firm that initially discovered the alleged accounting errors that formed the basis of the claim (albeit a different office than the one that found the errors). The defendants argued that the partner was not independent, *inter alia*, because she would have to opine on the work on her own firm. The Supreme Court found that this level of bias did not meet their new test. The expert appeared to understand her duty to the court and the connection between her work and possible losses to her firm (e.g., should she find their initial work was shoddy) were speculative. See *WBLI, ibid* at paras 56-62.
[65] *Ibid* at paras 54-55.
[66] See Sankoff & Mewett, *supra* note 6 at chapter 16.8.
[67] *WBLI*, *supra* note 5 at para 53, citing McWilliams, *supra* note 51 and Paciocco, Jukebox, *supra* note 11 [**emphasis added**].
[68] Edmond, After Objectivity, *supra* note 43.

there was a discernable effect, was it felt more in criminal or civil cases? Moreover, we hope that compiling these cases will be of use to practitioners and evidence scholars.

First, we created a database of decisions in which an expert was challenged for bias. To do this, we searched the WestlawNext Canada[69] online database under "All Cases and Decisions" for the following words in the body of the judgment: impartial, impartiality, partial, bias, biased, independent, independence, advocate, and advocacy.[70] For the pre-*WBLI* case law, we searched the five years before the *WBLI* decision was handed down (May 1, 2010 to April 30, 2015). For the post-*WBLI* case law, we searched from May 1, 2015 to May 28, 2018 (i.e., just over three years after the case was decided).[71] We pre-registered (predefined) our search parameters and time window before collecting and examining the data to help ensure that any expectations we had would not influence the results.[72] This practice is in line with current best practices in social scientific methods.[73]

The second author (Lutsky) then reviewed the cases and screened out those based on pre-registered specifications (e.g., "bias" was used in a different context or only to summarise the

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[69] Online: <https://www.westlawnextcanada.com/>.

[70] We limited our search to expert evidence cases by restricting it to cases in which "expert" was in the headnote and (1) "Mohan" was anywhere in the case (for pre-*WBLI* cases), or (2) "White Burgess" or "Mohan" was anywhere in the case (for post-*WBLI* cases). See supplementary material, online: <https://osf.io/awy5v/> for the precise search strings we used.

[71] We classified one case that was decided temporally **after** *WBLI* as a **pre**-*WBLI* decision because the case was heard before *WBLI* and decided not long after *WBLI*. As a result, we did not think that *WBLI* would have been available to the parties. That case is *R v J (N)*, 2015 ONSC 4347, 124 WCB (2d) 47. For a full description of how we classified cases during the pre- and post-*WBLI* interstitial period, see Supplementary Materials, online <https://osf.io/awy5v/>.

[72] Preregistration available online: <https://osf.io/ed8f5/>.

[73] Brian A Nosek et al, "The Preregistration Revolution" (2018) Proceedings of the National Academy of Sciences 201708274 at 4, under "Challenge 3: Data Are Preexisting"; Brian A Nosek & D Stephan Lindsay, Preregistration Becoming the Norm in Psychological Science, online: <https://www.psychologicalscience.org/observer/preregistration-becoming-the-norm-in-psychological-science>; Matthew Warren, First analysis of 'pre-registered' studies shows sharp rise in null findings, online: <https://www.nature.com/articles/d41586-018-07118-1>.

law, see Appendix A). The remainder were deemed "relevant". The first author (Chin) reviewed 10% of these choices, and Lutsky and Chin discussed any difficult-to-categorize cases.[74] We treated any distinct instance of an expert being challenged for bias as a "decision" for the purposes of our study (i.e., any given reported case could contain multiple "decisions" if multiple experts were challenged for bias for different reasons). This resulted in 229 "relevant decisions",[75] comprising 113 pre-*WBLI* and 116 post-*WBLI* decisions.[76] A full list of these cases is available at Appendix B.

Lutsky then reviewed these cases and coded them according to pre-registered criteria (see Appendix A). Importantly, cases were coded according to whether the court found potential indicators of either the expert's (1) independence (through a connection to the party or possible interest in the outcome), (2) demonstrated partiality (usually through the behaviour of the expert), or (3) both. Appendix A contains a further description of how these decisions were made with examples of such categorizations. For instance, potential non-independence was described by courts in situations when the expert was an employee of a party,[77] a friend of a party,[78] or a

[74] For example, we excluded from our database *Gaudet v Grewal*, 2014 ONSC 3542, 6 CPC (7th) 269 because the expert was challenged but died before he could give evidence, making it difficult to know how the court would have ultimately decided. We also excluded *McKerr v CML Healthcare Inc*, 2012 BCSC 1712, 97 CCLT (3d) 227 because although the term objectivity was used with respect a description of the expert, it was not in the context of an admissibility challenge.
[75] See the full database online: <https://osf.io/hqyv5/>. If two experts were challenged for the same reasons and the same reasons were given for admitting or excluding them, this was treated as one line of data.
[76] See *supra* note 71.
[77] *Ontario (Ministry of Labour) v Advanced Construction Techniques Ltd*., 121 WCB (2d) 256, 2015 CarswellOnt 6803 [*Ontario v Advanced Construction*].
[78] *MacWilliams v Connors*, 2014 PESC 12, 348 Nfld & PEIR 196.

police officer investigating the alleged crime.[79] Partiality included being argumentative,[80] discounting evidence consistent with the other side's case,[81] and straying into legal argument.[82]

Lutsky then coded these cases based on whether the evidence was: excluded (or assigned no weight, which we construed as an effective exclusion for the purposes of this study) for bias (i.e., non-independence or partiality); excluded for other reasons; admitted; or expressly assigned less weight by the trial judge for bias.[83] Once again Chin reviewed both 10% of these choices and difficult-to-categorize cases.[84]

Before reporting our findings, a key limitation of our study should be highlighted: our research contains only reported decisions (on one commercial database). Certainly, experts' alleged bias has been judicially considered in many decisions we do not have access to (e.g., mid-trial oral evidentiary holdings). In fact, one recent estimate found that only about 2% of criminal cases are ultimately reported.[85] Moreover, we have no information on the frequency at which potentially biased expert evidence produces settlements and plea deals. That said, we believe the cases we researched are important. It is the body of case law that litigators and courts

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[79] *R v Lee*, 2014 ONCJ 640, 117 WCB (2d) 598.
[80] *West Moberly First Nations v British Columbia*, 2018 BCSC 730, 292 ACWS (3d) 3.
[81] *R v Carter*, 2014 ABPC 291, 603 AR 366.
[82] *P.M. Snelgrove General Contractors & Engineers Ltd. v Jensen Building Ltd*., 2015 ONSC 585, 45 CLR (4th) 134 [*Snelgrove*].
[83] For a full accounting of this process, see the online supplementary material, online: <https://osf.io/awy5v/>. For practicality, cases in which the expert was excluded for bias *and* other reasons were coded as excluded for bias. Those cases are flagged in the main data file, see online <https://osf.io/hqyv5/>. The exception is *R v Ennis-Taylor* 2017 ONSC 5797, 142 WCB (2d) 517, in which the trial judge expressly said that bias alone would not have been enough to exclude the evidence.
[84] For example, it was sometimes difficult to determine if an expert was excluded, given reduced weight, or neither. For instance, in *Uponor AB v Heatlink Group Inc*., 2016 FC 320 at para 130, 139 CPR (4th) 393, the trial judge said that the expert would be assigned "little **if any** weight [emphasis added]". We classified this as a reduction in weight, but it seemed very close to an exclusion. Similarly, in *R v Hood*, 2016 NSPC 19, 371 NSR (2d) 324, the trial judge preferred one expert to another because of bias. We also categorized this as a reduction in weight, which seemed implicit from the judge's analysis.
[85] Jennifer Chandler "The use of neuroscientific evidence in Canadian Criminal proceedings" (2015) 2:3 Journal of Law and the Biosciences 550 at 556.

have the most access to, and so these cases form the most accessible precedent on the issue of biased experts.

First, we calculated the total number of relevant decisions per year (i.e., the number of times in which an expert's bias was at issue). As shown in Figure 2, there was a relatively steady number of such reported cases (about 20-30) in years before *WBLI* was decided. The year immediately after *WBLI* saw a considerable uptick in bias cases (e.g., 26 challenges in 2014 nearly doubled to 51 in 2016). This increase may be attributed to parties testing the boundaries of the new doctrine.

[**Figure 2 about here**]

As can also be seen from Figure 2, despite *WBLI* seeming to inspire more bias challenges, the actual number of exclusions for bias has remained relatively steady, with a slight increase after *WBLI* (9 in 2012, 5 in 2013, 7 in 2014, 16 in 2015, 13 in 2016, and 12 in 2016).

The rate of exclusion for bias (non-independence or partiality) was remarkably similar pre-and post-*WBLI*, with a slightly lower rate (31.0%) after the case was decided, as compared to before (32.7%). The year in which *WBLI* was decided may be particularly illustrative: in 2015, decisions that had the benefit of *WBLI* excluded experts 34.8% of the time, compared to 57.1% in 2015 cases that came before it. Similarly, judges pre-*WBLI* expressly assigned less weight to expert evidence because of bias in 11.5% of relevant decisions and in 10.3% of such decisdions after *WBLI*. This suggests that either *WBLI* did not strongly expand the reasons for which an expert could be excluded for bias or that the post-*WBLI* challenges were less meritorious, or some combination of the two. In either case, it does not support the theory that *WBLI* changed the practical operation of the law in an extreme fashion (and perhaps not at all).

We also analyzed *WBLI*'s effect on the admission of experts in criminal and civil cases. Research in the U.S. has found that new (ostensibly more rigorous) standards for admitting experts has affected civil trials more than criminal trials, with more demanding requirements disproportionately imposed on experts in civil trials.[86] We found that before *WBLI*, experts in civil cases were successfully excluded for bias in 42.4% of cases, but only in 19.1% of criminal cases. This considerable difference may be due, in part, to the fact that experts in criminal trials are typically tendered by the Crown. The defence is often limited in resources, and thus may not have the capacity to mount a successful challenge (as compared to more equally matched parties in civil trials).[87] This effect is also somewhat surprising because civil trials are typically decided by a judge alone and thus are cases when the judge is likely to relax his or her gatekeeping of expert evidence (it may also indicate some bias in our sample whereby evidentiary decisions in criminal trials are less likely to be reported).[88] For reasons that are not immediately clear, *WBLI* did appear to impact civil cases the most, with that 42.4% exclusion rate dropping to 34.2%. In the criminal sphere, those challenging experts for bias fared somewhat better, with the exclusion rate increasing about 5% to 24.3%.[89]

As to the type of bias experts are excluded for, there was not a dramatic change after *WBLI*. Before *WBLI*, independence challenges were successful (i.e., the expert was ultimately excluded for lack of independence when it was raised) 22.6% of the time and impartiality

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[86] D Michael Risinger, "Navigating Expert Reliability: Are Criminal Standards of Certainty Being Left on the Dock?" (2000) 64:1 Albany Law Review 99; Peter J Neufeld, "The (Near) Irrelevance of Daubert to Criminal Justice and Some Suggestions for Reform" (20015) 95:1 American Journal of Public Health 107.
[87] Keith A Findley, "Innocents at risk: Adversary Imbalance, Forensic Science, and the Search for Truth" (2008) 38:3 Seton Hall Law Review 893.
[88] *Chan v Erin Mills Town Centre Corp*, 2005 CarswellOnt 6741 at para 31, 143 ACWS (3d) 1143. Further, *WBLI* was a civil case and thus may present a more clearly relevant precedent in that area.
[89] As to reductions in weight due to bias, that occurred in 7.6% of relevant civil decisions before *WBLI* and 8.9% of cases afterwards. This rate fell for criminal cases, from 17.0% to 13.5%.

challenges were successful 42.9% of the time. After *WBLI*, independence challenges found slightly more success than they had before (25.8%), whereas the success rate for impartiality challenges slightly dropped (40.9%).

Finally, we examined the part of the expert evidence test that experts are evaluated under. Post-WBLI, challenges under the "properly qualified expert" criterion found success in 32.7% of such instances.. This compares to a 60% exclusion rate of such experts considered under the trial judge's discretionary gatekeeping exercise. This may be due to the high bar (for bias) set in out *WBLI's* enunciation of threshold non-biasedness and generally increased exclusion (as suggested in other work) at the discretionary gatekeeping stage.[90]

Part VI. Discussion and Conclusions

Our findings suggest that, following *WBLI*, there was an increase in the frequency of challenges related to expert biases. This may be the result of parties testing the boundaries of the new precedent with relatively weak arguments for bias. Despite the increased activity in this area, it is surprising how little an impact *WBLI* had across the metrics we explored. Most notably, the number of experts excluded for bias remained relatively constant between pre- and post-*WBLI* cases. One explanation for this is that *WBLI* did not meaningfully change the law, but simply confirmed and formally articulated a rule that lower courts were already applying.[91] This is a theory that our empirical analysis is limited in its ability to address (we hope, however, that

[90] *WBLI*, *supra* note 5 at para 49; Emma Cunliffe, "A New Canadian Paradigm? Judicial Gatekeeping and the Reliability of Expert Evidence" in Paul Roberts & Michael Stockdale, eds, Forensic Science Evidence and Expert Witness Testimony: Reliability Through Reform? (Cheltenham: Edward Elgar, 2018). In generally balancing an expert's contribution to the case versus the prejudice he or she presents, and the defence's ability to address that prejudice, see Gary Edmond & Kent Roach, "A Contextual Approach to the Admissibility of the State's Forensic Science and Medical Evidence" (2011) 61:3 UTLJ 343.

[91] Indeed, one post *WBLI* appellate decision noted that Professor (as he then was) Paciocco's framework, that was adopted in *WBLI*, was wholly adopted by the case's trial court. *R v Natsis*, 2018 ONCA 425 at para 9, 2018 CarswellOnt 6977 [*Natsis* ONCA]; *R v Natsis*, 2014 ONCJ 532, 70 MVR (6th) 292 [*Natsis* ONCJ].

the database we have compiled will assist with such work). Still, in this section, we will offer some preliminary observations based on our review of the cases. In general, we will suggest that one way for the courts to develop the expert bias jurisprudence in a manner that is sensitive to the psychology of bias is to broaden their independence inquiry to include questions specifically about *contextual bias*.

Recall that both before and after *WBLI*, the success rate for impartiality challenges was higher than that for independence challenges (and both only changed by a few percentage points). This consistency suggests that courts are more sensitive to impartiality challenges, an observation buttressed by the fact that partiality is typically defined as being behavioural and attitudinal, making it relatively easy to observe.[92] Moreover, impartiality challenges may justify exclusion of an expert not simply because they indicate bias, but also because they cast doubt on the *reliability* of an expert's opinion (an exclusionary rule that predates *WBLI*).[93] To better illustrate what constitutes excludable partiality, the following list contains the expert behaviours that commonly led to exclusion in both pre- and post-*WBLI* cases:

- uncritically accepting the client's facts;[94]
- focusing on one set of research;[95]

[92] Michell & Mandhane, *supra* note 5 at 638.
[93] See Chin, *Abbey* Road, *supra* note 54 at fn 33.
[94] For pre-*WBLI* exclusions see *Malenfant v Lavergne* 2010 ONSC 2894 at para 38, 2010 Carswell Ont 4399; *KL*, *supra* note 45; *Piccolo v Piccolo* 2014 ONSC 5280 at para 13-15, 2014 CarswellOnt 13481. For post-*WBLI* exclusions see *Martin Marietta Materials Canada Ltd. v Beaver Marine Ltd*., 2016 NSSC 225 at para 83, 2016 CarswellNS 71 [*Martin Marietta*].
[95] For pre-*WBLI* exclusions see *G (CM) v S (DW)*, 2015 ONSC 2201 at para 65, 2015 CarswellOnt 5328. For post-*WBLI* exclusions see *J.P. v British Columbia (Children and Family Development)* 2017 BCAA 308 at para 200, 2017 CarswellBC 2370; *R v Colpitts* 2016 NSC 219 at para 32, 2016 CarswellNS 688.

- ignoring contradictory evidence;[96]
- focusing on weaker evidence;[97]
- drawing only the conclusions favourable to their client from the facts;[98]
- adopting an argumentative tone; [99] and
- straying into legal argument.[100]

As to independence, both before and after *WBLI*, a rather strong connection to the case, parties, or issues was required to justify exclusion. Before *WBLI*, these included a direct financial interest,[101] being asked to opine on the reliability or quality of their own work,[102] strong professional advocacy on a relevant issue,[103] and deep involvement in the investigation or

[96] For pre-*WBLI* exclusions see *D.M. Drugs Ltd. v Bywate*, 2013 ONCA 356 at para 45, 2013 CarswellOnt 7230 [*DM Drugs*]; *R v Phinney*, 2012 NSPC 68 at para 3, 2012 CarswellNS 569 [*Phinney*]. For post-*WBLI* exclusions see *R v Giles*, 2016 BCSC 294 at para 124, 2016 CarswellBC 876 [*Giles*].
[97] For pre-*WBLI* exclusions see *Phinney*, *ibid* at para 24. For post-*WBLI* exclusions see *Allard v Canada*, 2016 FC 236 at para 247, 2016 CarswellNat 458
[98] For pre-*WBLI* exclusions see *Gould v Western Coal Corp*, 2012 ONSC 5184 at para 94, 2012 CarswellOnt 11306. For post-*WBLI* exclusions see *Bruff-Murphy v Gunawardena*, 2016 ONSC 7 at para 123, CarswellOnt 14.
[99] For pre-*WBLI* exclusions see *Carmen Alfano Family Trust v Piersant*, 2012 ONCA 297 at para 115, 2012 CarswellOnt 5668 [*Carmen Alfano*]; D.M. Drugs, *supra* note 96 at para 29.; *Snelgrove*, *supra* note 82 at para 11; For post-*WBLI* exclusions see *R v Sriskanda*, 2016 ONCJ 667 at para 39, 2016 CarswellOnt 18574.
[100] For pre-*WBLI* exclusions see *Carmen Alfano*, *ibid* at para 115; *Snelgrove*, *ibid* at paras 12, 14.
[101] *Dean Construction Co v M.J. Dixon Construction Ltd*, 2011 ONSC 4629 at para 60, CarswellOnt 8977.
[102] *Decision No. 858/12I2*, 2014 ONWSIAT 1105 at paras 20-21, 2014 Carswell 7644; *Kobilke v Jeffries*, 2014 ONSC 1786 at para 41, CarswellOnt 5962.
[103] *R v McPherson*, 2011 ONSC 7717 at para 31, CarswellOnt 162211.

allegiance with investigators.[104] Very similar reasons resulted in exclusion after *WBLI*.[105] Moreover, a controversial case decided before *WBLI* was affirmed in light of the new doctrine.[106]

Despite its largely neutral effect, one positive outcome from *WBLI* is that it appeared to increase the discussion around confirmation bias. Within our search, none of the cases before *WBLI* mentioned confirmation bias, while eight cases expressly mentioned it after *WBLI*.[107] Some of this interest in confirmation bias may flow from Paciocco's influential pre-*WBLI* article, which contained a substantial treatment of confirmation bias.[108] Nevertheless, this recognition by the courts of a specific psychological bias marks a step forward in expert witness jurisprudence. To continue moving forward, and to further increase judicial control over biased experts in the future, we recommend courts broaden their bias analysis to include consideration of contextual bias.[109]

Recall that psychological research has found that contextual factors (e.g., emotionally evocative facts, the perceived exigency of the situation) substantially alter perception, memory,

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[104] *R v Lauzon*, CarswellOnt 10976 at para 11; *Ontario v Advanced Construction*, *supra* note 77 at para 52. But see: *Natsis* ONCA, *supra* note 91.
[105] For a direct financial interest, see *McKinlay v Zachow*, 2018 ABQB 365 at para 99, 2018 CarswellAlta 850. For giving an opinion on one's own work, see *M(M) v M(R)*, 2016 ONSC 7003 at para 16, CarswellOnt 17814. For previous advocacy work, see *McKitty v Hayani*, 2017 ONSC 6321 at para 35, 2017 CarswellOnt 16282. For involvement in the investigation, see *BC Hydro & Power Authority and IBEW, Local 258 (Petersen Termination), Re*, 2015 CarswellBC 3847 at paras 28, 29, [2016] BCWLD 781 [*BC Hydro*]. It should be noted that experts both before and after *WBLI* have been excluded for a combination of partiality and non-independence, see *R v Livingston*, 2017 ONCJ 645, 356 CCC (3d) 514.
[106] *Natsis* ONCA, *supra* note 91 at para 9. The Court of Appeal for Ontario noted that the trial judge had applied Professor (as he then was) Paciocco's framework, which was adopted in *WBLI*.
[107] *St. Clair Boating & Marina v Michigan Electric Supply Co*., 2017 ONSC 23 at para 82, 2017 CarswellOnt 25; *R v Piechotta*, 2016 BCPC 463 at para 185 and 186, 2016 CarswellBC 3946; *R v France*, 2017 ONSC 2040 at para 17, 2017 CarswellOnt 5547; *Giles*, *supra* note 96 at 123; *AE v TE*, 2017 ABQB 449 at para 178, 2017 CarswellAlta 1727; *R v Hood*, 2016 NSPC 19 at para 144, 2016 CarswellNS 265; *Young v Insurance Corp. of British Columbia*, 2017 BCSC 2306 at para 6, 2017 CarswellBC 2306; *Van Bree*, *supra* note 49 at 103.
[108] Paciocco, Jukebox, *supra* note 11 at 577-581.
[109] See Edmond et al, Contextual Bias, *supra* note 23.

and judgment.[110] Notwithstanding this research, none of the judgements in our search included any express discussion of contextual bias (similar inadvertence has also been noted in Australia and the UK),[111] nor have there been any discussions on the use of bias countermeasures, such as Linear Sequential Unmasking (i.e., progressively exposing experts to just the evidence they must know to perform their task).[112] Moreover, independence challenges related to an expert's exposure to irrelevant and extraneous (but biasing) information are treated inconsistently. These types of challenges are most often raised when a proposed expert participated in a related investigation before the proceeding. Within our analysis, we found seven instances where an expert was permitted to testify despite their involvement in a related investigation,[113] and five instances where an expert's involvement in a related investigation was used as reason to reject their testimony.[114] What is likely contributing to this inconsistency is the absence of any discussion of contextual bias by the courts.

To better control for contextual bias, and to resolve the inconsistency discussed above, courts should more critically consider an expert's exposure to contextual information when conducting their independence analysis. Several of the cases we reviewed may have benefited

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[110] See Part II. See also Jennifer L Mnookin, "The Uncertain Future of Forensic Science" 147:3 Daedalus 99 at 104.
[111] Edmond et al, Contextual Bias, *supra* note 23 at fn 2: "We identified no sustained discussion or responses to 'contextual bias' or 'cognitive bias' in reported appellate judgments in England, Australia and Canada, though there are several passing references…" But, see *R v Smith-Wilson*, 2016 SKQB 33 at paras 150-151, 128 WCB (2d) 255 in which the expert failed to mention in her report that she had been exposed to biasing information.
[112] Itiel Dror et al, "Context Management Toolbox: A Linear Sequential Unmasking (LSU) Approach for Minimizing Cognitive Bias in Forensic Decision Making" (2015) 60:4 Journal of Forensic Sciences 1111 [Dror, Context Management].
[113] *R v Ali*, 2011 BCSC 1850 at para 28, 103 WCB (2d) 68; *R v Parisien*, 2011 ONCJ 354 at para 13, 95 WCB (2d) 500 [*Parisien*]; *R v Pelich*, 2012 ONSC 3224 at paras 18-21, 103 WCB (2d) 195; *Market Surveillance Administrator, Re*, 2015 CarswellAlta 1400 paras 91, 111, [2015] AWLD 4488; *R v Tang*, 2015 ONCA 470 para 6-7, 122 WCB (2d) 411; *R v Dixon*, 2015 ONSC 8065 at para 47-50, 128 WCB (2d) 359; *R v Farnham*, 2016 SKCA 111 at paras 78, 85, 485 Sask R 44 [*Farnham*].
[114] *Van Bree*, *supra* note 49 at para 116-118, *R v Tremblett*, 2012 NSPC 121 at paras 9, 29, 33, 325 NSR (2d) 6; *Ontario v Advanced Construction*, *supra* note 77 at para 86; *BC Hydro supra* note 105 at paras 28-29; *R v Fabos*, 2015 ONSC 8013 at para 47, 128 WCB (2d) 358.

from such an exercise. For instance, in *R v Live Nation Canada*, the engineers who gave expert testimony were present at the accident and witnessed the deaths of numerous people.[115] In this case, and in several others like it,[116] the trial judge seemed to place significant weight on the expert's demeanor (e.g. whether the expert appeared an honest witness) and the expert's denials regarding their susceptibility to contextual factors. Given that experts may not be aware when they fall victim to contextual bias, relying on their demeanour or confidence in their own opinion is, in our view, misguided. This is similar to the case of the confident but mistaken eye witness; a phenomenon that has been widely discussed in both the psychological and legal literature.[117] We believe similar emphasis should be placed on the potential for contextual bias to sway the opinions of experts. In addition to screening out potentially inaccurate evidence, taking contextual bias more seriously at trial may encourage parties and investigators to keep such biasing information from the experts in the first place.

To conclude, while our analysis of the Canadian approach and the impact of *WBLI* has been generally pessimistic, it does seem to have had a salutary effect on the coherence of evidence law. As we discussed above, *WBLI* ended the debate about whether bias could be cause to exclude an expert and provided some clarity about how much bias was sufficient for exclusion (e.g., a reasonable apprehension is insufficient).[118] This clarity is useful in less obvious ways as well. Consider, for instance, *Matsalla v Rocky Mountain Dealerships Inc*, in which the court

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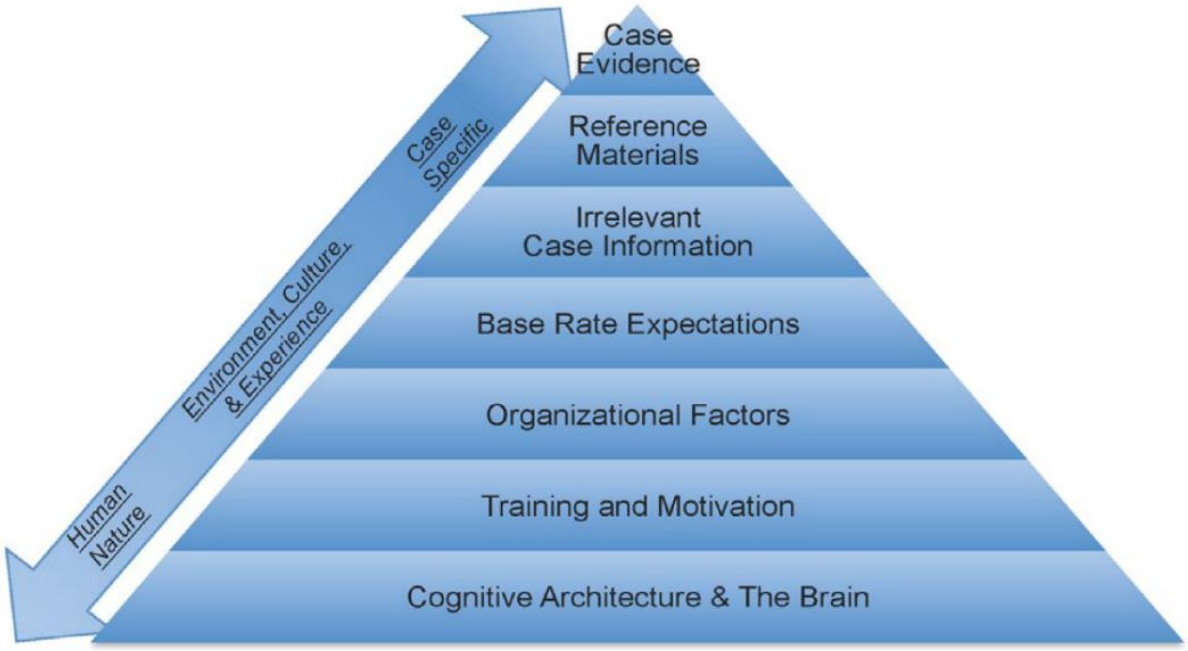
[115] *R v Live Nation Canada*, 2016 ONCJ 22 at para 5, 130 OR (3d) 365.
[116] *Farnham*, *supra* note 113 at para 78; *Parisien*, *supra* note 113 at para 1.
[117] See Chin & Crozier, *supra* note 8 at 636
[118] See the sources at *supra* note 49. Some pre-*WBLI* decisions did rely on a reasonable apprehension of bias, see *Van Bree*, *supra* note 49 at para 110: "The advantage of using a reasonable person standard is that the reasonable person assessing the appearance of bias must be informed of all the relevant circumstances, including the background factors that uphold the impartiality of the witness. As will be seen, I find this to be a factor tending to diminish appearances of bias of police officers.".

noted that while *some* Saskatchewan civil procedure rules established a duty of objectivity, such rules were not applicable in small claims court.[119] The lack of directly relevant legislation might have prompted a great deal of analysis as to why the *Small Claims Act Rules* and *Regulations* were not similarly drafted.[120] The court, however, quickly noted the precedent in *WBLI* and its explanation of the expert's duty. The matter was then easily decided. This economy and clarity are certainly beneficial, but perhaps it is now time to move on to the subtler and more thorny issues inherent in the biases of experts.

[119] 2017 SKQB 335 at para 25, 20 CPC (8th) 393.
[120] 1997, SS 1997, c S-50 11; 1997, SS 1997, S-50 11 Reg 1.

Figure 1

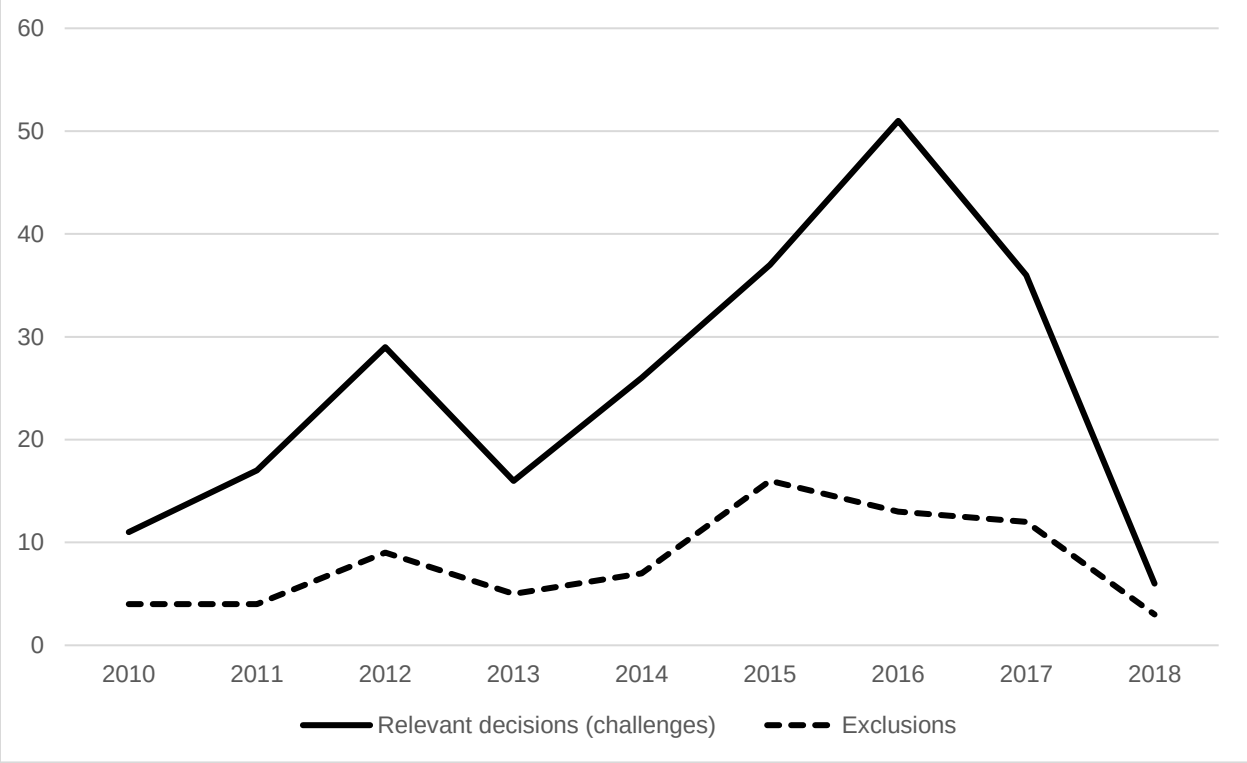
Figure 1. Taxonomy of seven sources of bias. These factors may relate to the specific case itself (top of the pyramid), may originate from factors arising from the specific expert making the decision and environmental factors (the middle of the pyramid), or from human nature itself (bottom of the pyramid).[121]



[121] Dror, Sources of Bias, *supra* note 36.

Figure 2

Figure 2. The number of relevant decisions (i.e., expert challenges) charted against the number exclusions per year (*WBLI* was decided on April 30, 2015).



Appendix A. Methodological Details

Appendix A. Selected details about our methodology. For a full accounting see the online supplementary materials: <https://osf.io/awy5v/> and preregistration: <https://osf.io/ed8f5/>.

Determination of a decision's relevance for the database

- No
  - the word bias, partial, independent, or advocate was used in a different context
  - the word bias, partial, independent, or advocate was used in the correct context but only to summarize the law
- Yes
  - the word bias, partial, independent, or advocate was used in the context of a challenge to the admissibility of an expert's evidence

Operational definitions of impendence and partiality

- Independence
  - Yes (1): Situations where the Court acknowledges that the expert has a relationship/connection with one of the parties or a demonstrated interest in the outcome of the case, that could potentially affect his or her ability to be impartial. Importantly, this includes situations where the Court ultimately concludes that the expert's relationship/connection with one of the parties would/did not affect their ability to be impartial. For example, in *R v Edison* (2015 NBBR 74), the defence argued that a police officer's expert opinion should not be admitted because police officers were biased in favour of the Crown. The Court acknowledged that there generally is a connection between police officers and the Crown counsel; however, the Court ruled that this connection does not affect the police officer's ability to be impartial.
  - Non-exhaustive list of examples:
    - The expert is employed by one of the parties or by a company closely connected to the case (*Ontario (Ministry of Labour) v Advanced Construction Techniques Ltd*, 2015 CarswellOnt 6803 at para 55)
    - The expert is related to or friends with one of the parties in the case (*MacWilliams v Connors*, 2014 PESC 12 at para 33 and 34)
    - The expert has a demonstrated interest in the outcome of the case (*R v Tremblett*, 2012 NSPC 121 at para 29)
    - The expert is a police officer who was on the investigation team involved in the case (*R v Lee*, 2014 ONCJ 640 at para 13)
    - The expert worked closely with the investigation team or other individuals involved in the case (*Ontario (Ministry of Labour) v Advanced Construction Techniques Ltd*, 2015 CarswellOnt 6803 at para 52)

    - No (0): Situations where the Court does not identify any relationship/connection between the expert and either party that could potentially affect the expert's ability to be impartial.

- Partiality
    - Yes (1): Situations where the Court acknowledges that the expert's report/testimony potentially demonstrates that he or she has a bias towards one of the parties. Importantly, this includes situations where the Court ultimately concludes that the expert did not engage in partial behaviour in his or her testimony/report. For example, *in Conseil Scolaire Francophone de la Colmbie-Britaanique* (2014 BCSC 851 at paras 37, 51), the impartiality of an expert was questioned due to her evasiveness during cross-examination. Specifically, the expert often disputed with counsel the form of question she was asked. The court agreed that the expert was evasive, however attributed her evasiveness due to her carefulness with language. The court explained that the expert wanted to be precise with her words, which should not be seen as a demonstration of biased behaviour. The behaviour of the expert in that case is an example of potentially partial/biased behaviour which the court ultimately concluded was not a demonstration of bias/partiality.
    - Non-exhaustive list of examples:
        - Being argumentative/difficult with opposing counsel during cross-examination (*Redman v Kirder*, 2015 BCSC 178 at para 122)
        - Adopting the position of an advocate for one of the parties (*R v Carter*,, 2014 ABPC 291 at para 37) — the expert in the case emphasized that she took a favourable position to one of the parties and completely discounted evidence that opposed her position
        - Exclusively relying on evidence that supports the expert's viewpoint (*G (CM) v S (DW)*, 2015 ONSC 2201 at para 72)
        - Giving a testimony that resembles a legal argument to support one of the parties rather than on opinion to answer a factual question. (*P.M. Snelgrove General Contractors & Engineers Ltd. V Jensen Building Ltd.*, 2015 ONSC 585 at para 12)
    - No (0): Situations where the Court does not identify any potential instances of biased/partial behaviour in the expert's testimony/report.

Appendix B. Bias cases, pre- and post-*White Burgess Langille Inman v Abbott and Haliburton Co.*

Appendix B. A database of pre- and post-*WBLI* decisions including the case name, citation (neutral when possible), a description of the expert's area of expertise and whether the expert was admitted (0) or excluded (1). See the full database online: <https://osf.io/hqyv5/>. Post-*WBLI* cases are in greyscale.

Case Name	**Citation**	**Expertise**	**Exclude?**
Andersen v St. Jude Medical Inc.	2010 ONSC 5768	Expert on cardiovascular pathology	0
Bedford v Canada Expert 2 (Janice Raymond)	2010 ONSC 4264	Expert in medical ethics	0
Bedford v Canada Expert 3 (Richard Poulin)	2010 ONSC 4264	Sociology professor with an expertise in prostitution	0
Bedford v Canada: Expert 1 (Melissa Farley)	2010 ONSC 4264	Counselling Psychologist	0
Duff v Alberta	2010 ABPC 250	Forensic Toxicologist	0
Gutbir v University Health Network	2010 ONSC 6394	Neonatologist	1
Malenfant v Lavergne	2010 ONSC 2894	Expert in substance addictions	1
R v Lauzon	2010 CarswellOnt 10976	Police Constable	1
R v Sappleton	2010 ONSC 5704	Police Detective	0
R v Zoraik: Constable Yeager	2010 BCPC 472	Police Constable	0
Warkentin v Riggs: Dr. D.G. Hunt	2010 BCSC 1706	Expert Medical Legal Consultant	1
Brandiferri v Wawanesa Mutual Insurance Co.	2011 ONSC 3200	Licensed engineer and chemist	0

Commercial Electronics Ltd. V Savics	2011 BCSC 162	Expert in design and installation of residential integration systems	0
Dean Construction Co v M.J. Dixon Construction Ltd: Chester Hodgins	2011 ONSC 4629	Expert in delay analysis and costing of claims	1
Dean Construction Co v M.J. Dixon Construction Ltd: Sean Keegan	2011 ONSC 4629	Engineer	1
Edmondson v Payer	2011 BCSC 118	Family Physician	0
Grigoroff v Wawanesa Mutual Insurance Co.	2011 ONSC 2279	Psychiatrist	0
N.I.W.A v Pacific Inland Resources	2011 BCHRT 294	Specialist in Internal Medicine	0
R v Ali	2011 BCSC 1850	Police Detective	0
R v K (L)	2011 ONSC 2562	Psychologist	1
R v McPherson	2011 ONSC 7717	Law Professor	0
R v Myles	2011 CarswellOnt 10352	Police Sergeant	0
R v Parisien	2011 ONCJ 354	Police Constable	0
R v Van Bree	2011 ONSC 4273	Police Detective	1
R v Wilkinson	2011 SKQB 371	Police Officer	0
Ross River Dena Council v Canada	2011 YKSC 87	Lawyer	0
Steen Estate v Iran	2011 ONSC 6464	Expert on Iranian Affairs	0
Wakeley v Wakeley	2011 ONSC 5566	Accountant	0
Carmen Alfano Family Trust v Piersanti	2012 ONCA 297	Accountant	1
Continental Roofing Ltd. V J.J.'s Hospitality Ltd	2012 ONSC 1751	Architect and Engineer	0

Edmondson v Payer	2012 BCCA 114	Family Physician	0
First Nations Child and Family Caring Society of Canada v Attorney General of Canada	2012 CHRT 28	Unspecified	0
Gallant v Brake-Patten	2012 NLCA 23	Neurologist	0
Gould v Western Coal Corp	2012 ONSC 5184	Accountant	1
Henderson v Risi	2012 ONSC 3459	President of a company which undertakes business valuations and litigation accounting	0
Kappell v Brown	2012 BCSC 113	Lawyer	1
Lees v Casorso	2012 NSSC 301	Doctor	0
Lockridge v Ontario	2012 ONSC 2316	Doctor	1
Lush v Connell	2012 BCCA 203	Radiologist	0
McDonald v Murray's Horticultural Services Ltd.: Mr. Ken Tobin	2012 NLTD(G) 127	Structural Engineer	0
Ottawa (City) v TKS Holdings Inc.	2012 ONSC 7633	Engineer	1
R v Aitken	2012 BCCA 134	Podiatrist and Forensic Gait Analysist	0
R v Alcantara	2012 ABQB 225	Police Sergeant	0
R v C(M): Expert 1 (Dr. Moore)	2012 ONSC 868	Cognitive Psychologist	0
R v C(M): Expert 1 (Dr. Wolfe)	2012 ONSC 868	Expert on child abuse	0
R v Gager	2012 ONSC 1472	Street Gang Expert	0
R v Gager	2012 ONSC 388	Police Officer	0
R v Pearce: Dr. Moore	2012 MBQB 22	Psychologist	1

R v Pelich	2012 ONSC 3224	Police Officer	0
R v Phinney	2012 NSPC 68	Police Constable	1
R v Sarsfield	2012 ONSC 6154	RCMP Corporal	0
R v Shafia	2012 ONSC 1538	Professor of Women and Gender Studies	0
R v Shehaib	2012 ONCJ 144	Police Officer	1
R v Tremblett	2012 NSPC 121	Police Constable	1
R v Vu	2012 BCPC 46	Police Constable	0
R(J) v University of Calgary: Expert 1 (Malmo)	2012 ABQB 342	Psychologist	0
R(J) v University of Calgary: Expert 2 (Mayhew)	2012 ABQB 342	Psychologist	0
Blackmore v R	2013 TCC 263	Expert on sociology of religion	0
Brock Estate v Crowell: Jessie Gmeiner	2013 NSSC 259	Actuary	1
Brock Estate v Crowell: Mr. Nicholas Metivier	2013 NSSC 259	Owner of an art gallery	1
Brock Estate v Crowell: Ms. Elizabeth Nobles	2013 NSSC 259	Fine art appraiser	0
Citizens Coalition of Greater Fort Erie, Re: Expert 1 (Dr. Gayler)	2013 CarswellOnt 7871	Expert in land use and planning	1
Citizens Coalition of Greater Fort Erie, Re: Expert 2 (Group of Experts called by Defendant)	2013 CarswellOnt 7871	Professional Planners	0
D.M. Drugs Ltd. V Bywater: Mr. Jim Roberts	2013 ONCA 356	Expert in boiler design	1
D.M. Drugs Ltd. V Bywater: Mr. Michael Learmonth	2013 ONCA 356	Expert on fires	1
Fielding v Fielding	2013 ONSC 1458	Developmental Psychologist	0

McEwing v Canada (Attorney General)	2013 FC 525	Expert in research methodology and design and applied statistical analysis	0
R v Chegini	2013 ONSC 1082	Expert Translator	0
R v Clark	2013 MBQB 130	Police Officer	0
R v Georgiev	2013 BCCA 431	RCMP Officer	0
R v Maple Lodge Farms	2013 ONCJ 535	Veterinarian	0
R v Williams	2013 ONSC 1076	Police Officer	0
Walsh v BDO Dunwoody LLP	2013 BCSC 1463	Legal expert in tax law	0
Abbott v Abbott	2014 NLTD(F) 2	Accountant	0
Bourque-Coyle and Dieppe (City), Re	2014 CarswellNB 84	Expert in urban street design, traffic accidents and road safety	1
Bradley v Eastern Platinum Ltd.	2014 ONSC 4284	Mining Expert	0
Conseil Scolaire Francophone de la Colombie-Britannique v British Columbia	2014 BCSC 851	Professor of Sociolinguists and Languages	0
Decision No. 1748/131	2014 ONWSIAT 2593	Doctor	0
Decision No. 858/12I2	2014 ONWSIAT 1105	Doctor	1
Kobilke v Jeffries	2014 ONSC 1786	Psychiatrist	1
Kroeplin v Director, Ministry of the Environment: Mr. Richard James	2014 CarswellOnt 5220	Acoustical Engineer	0
Kroeplin v Director, Ministry of the Environment: Mr. William Palmer	2014 CarswellOnt 5220	Engineer with expertise in acoustics.	0

MacWilliams v Connors	2014 PESC 12	Doctor	0
Maras v Seemore Entertainment	2014 BCSC 1109	Psychiatrist	1
Moore v Getahun: Dr. Ronald Taylor	2014 ONSC 237	Orthopedic Surgeon	0
Moore v Getahun: Dr. Russel Tanzer	2014 ONSC 237	Emergency Room Physician	0
Ontario Professional Foresters Assn. v Robertson	2014 ONSC 4724	Professional Forester	1
Piccolo v Piccolo	2014 ONSC 5280	Financial Advisor/Accountant	1
R v Carter	2014 ABPC 291	Forensic Alcohol Specialist	0
R v Hersi	2014 ONSC 1258	Investigator and advisor on peace and security issues in Africa	0
R v Lee	2014 ONCJ 640	Police Officer	0
R v M(D)	2014 ONSC 1747	Doctor with experience with child abuse victims	0
R v Montgomery	2014 ONSC 2775	Expert with regard to biology of lakes, fish habitat and how it is impacted	0
R v Murray	2014 ABPC 112	Expertise in wildlife law in the state of Alaska	0
R v Natsis: Constable John Hewitt	2014 ONCJ 532	Traffic Accident Reconstruction Expert	0
R v Natsis: Constable Robert Kern	2014 ONCJ 532	Traffic Accident Reconstruction Expert	0
R v Natsis: Constable Shawn Kelly	2014 ONCJ 532	Traffic Accident Reconstruction Expert	0
R v Nguyen	2014 BCPC 95	RCMP Sergeant	0
R v Pearce: Dr. Jordan Peterson	2014 MBCA 70	Psychologist	1

Blatherwick v Blatherwick	2015 ONSC 2606	Business Valuator	0
Bustos v Tardif	2015 ABQB 202	Automobile Appraiser	0
Dakota Ridge Builders Ltd v Niemela	2015 BCSC 581	Lawyer	1
Dustbane Products Ltd V Gifford Associates Insurance Brokers Inc.	2015 ONSC 1036	Insurance Expert	0
G. (C.M.) v S (D.W.): Dr. Jacinta Willems	2015 ONSC 2201	Doctor of Naturpathic Medicine	1
G. (C.M.) v S (D.W.): Dr. Nicole Lederman	2015 ONSC 2201	Doctor of Chiropractic Medicine	1
HLP Solution Inc. c. R.	2015 TCC 41	Computer Science Research and Technology Advisor	1
Moore v Getahun	2015 ONCA 55	Orthopedic Surgeon	0
Ontario (Ministry of Labour) v Advanced Construction Techniques Ltd	2015 CarswellOnt 6803	Engineer	1
P.M. Snelgrove General Contractors & Engineers Ltd. V Jensen Building Ltd.	2015 ONSC 585	Expertise not specified in the motion	1
Paur (Committee of) v Providence Health Care	2015 BCSC 1008	Psychiatrist	0
R v Edison	2015 NBQB 74	RCMP Sergeant	0
R v J(N)	2015 ONSC 4347	Forensic Kinesiologist	1
Redmon v Krider	2015 BCSC 178	Medical Doctor	1
10565 Nfld. Inc. v Canada	2015 NLTD(G) 168	Accountant	0
1483489 Ontario Inc. v Air Liquide Canada Inc.	2015 ONSC 7343	Chemical Engineer	1

Anderson v Canada	2015 NLTD(G) 138	The expert has worked for many years conducting historical research on Newfoundland and Labrador	0
Anderson v Canada	2015 NLTD(G) 181	Psychologist with experience in social work and family therapy	0
Babstock v Atlantic Lottery Corp.	2015 NLTD(G) 116	Research Associate on problem gambling	0
BC Hydro & Power Authority and IBEW, Local 258 (Petersen Termination), Re	2015 CarswellBC 3847	Police Constable	1
Canadian Imperial Bank of Commerce v Deloitte & Touche	2015 ONSC 7695	Accountant	1
Eli Lilly Canada Inc. v Apotex Inc.	2015 FC 875	Urologist	0
Keresturi v Keresturi	2015 ONSC 3565	Unspecified	1
Market Surveillance Administrator, Re: Dr. Jeffrey Church	2015 CarswellAlta 1400	Expert in Economics	0
Market Surveillance Administrator, Re: Dr. Matt Ayres	2015 CarswellAlta 1400	Expert in Economics	0
R v A. (T.)	2015 ONCJ 624	Detective Constable	0
R v Dixon	2015 ONSC 8065	Police Constable	0
R v Duffy	2015 ONCJ 693	Forensic Accountant	0
R v Elmadani	2015 NSPC 65	Psychologist	0
R v Esseghaier	2015 ONSC 5855	Psychologist	1
R v Fabos	2015 ONSC 8013	Police Sergeant	1

R v Tang	2015 ONCA 470	Accountant	0
R v Tesfai	2015 ONSC 7792	Detective Sergeant	0
Telus Communications Co. and TWU (Mendez), Re	2015 CarswellNat 7298	Family Practitioner of the Grievor	1
Wakeley v Wakeley	2015 ONSC 3561	Financial Accountant	0
Wolney v Selkirk Vinyl Ltd.	2015 BCSC 1009	Significant amount of construction background and experience	0
X v Y	2015 ONSC 7681	Senior Social Worker with a Masters in Social Work	1
Allard v Canada: Corporal Shane Holmquist	2016 FC 236	Police Corporal	1
Allard v Canada: Len Garis	2016 FC 236	Fire Chief	0
Anderson v Pieters	2016 BCSC 889	Family Physician	1
Arctic Cat Inc. v Bombardier Recreational Productions Inc.	2016 FC 1047	Mechanical Engineer	0
Arslan v Sekerbank T.A.S.	2016 SKCA 77	Turkish lawyer	0
Baker Estate v Poucette	2016 ABQB 557	Economist	0
Bier v Continental Motors, Inc.	2016 BCSC 1393	Lawyer	0
Bordin v Iacobucci	2016 ONSC 1333	Unspecified (but likely some sort of economist/financial advisor)	0
British Columbia (Workers' Compensation Board) v Flanagan Enterprises (Nevada) Inc.	2016 BCSC 650	Former Superintendent of Transport Canada's Aircraft Evaluation Group	0
Bruff-Murphy v Gunawardena	2016 ONSC 7	Psychiatrist	0

Bye v Newman	2016 BCSC 2671	Accident Reconstruction Expert	1
Christoforou and John Grant Haulage Ltd., Re	2016 CHRT 14	Doctor	0
Davies v Clarington (Municipality)	2016 ONSC 3900	PhD in Engineering/oil and gas	0
Davies v Clarington (Municipality)	2016 ONSC 6636	Chartered Accountant	1
Decision No. 1173/16	2016 ONWSIAT 1783	Audiologist	0
Dimitrijevic v Pavlovich	2016 BCSC 1529	Doctor	1
E (P.G) v C (H.R)	2016 BCSC 1316	Psychologist	0
Gordon v Canada	2016 ONCA 625	Economist	0
Jossy v Johnson	2016 BCSC 1023	Psychiatrist	0
Kitching v Devlin	2016 ABQB 212	Lawyer	0
L. (C.G.) v L. (D.K.)	2016 ABQB 71	Accountant	0
LBP Holdings Ltd. V Allied Nevada Gold Corp	2016 ONSC 6037	Bankruptcy Specialist	0
M(M.) v M(R.)	2016 ONSC 7003	Certified Professional Accountant	1
Martin Marietta Materials Canada Ltd. V Beaver Marine Ltd.	2016 NSSC 225	Engineer	1
Providence Health Care v Dunkley	2016 BCSC 1383	Professor with a focus on sign language	0
R v Apetrea	2016 ABCA 395	Forensic Video Analyst	0
R v Colpitts	2016 NSSC 219	Chartered Accountant	0
R v D(D)	2016 ONSC 7249	Psychologist	1

R v Farnham	2016 SKCA 111	Journeyman Electrician	0
R v Fracassi	2016 ONSC 6120	Neurologist	0
R v Giles	2016 BCSC 294	RCMP Constable	1
R v Hood: Dr. Risk Kronfli	2016 NSPC 19	Psychologist	0
R v Hood: Dr. Stephen Hucker, and Dr. Lisa Ramshaw (discussed by the judge together)	2016 NSPC 19	Psychologists	0
R v Live Nation Canada Inc.	2016 ONCJ 223	Civil Engineer	0
R v Morrill	2016 ABQB 638	Psychiatrist	0
R v Piechotta	2016 BCPC 463	Police Constable	0
R v Shafia	2016 ONCA 812	Professor of Women and Gender Studies	0
R v Smith-Wilson	2016 SKQB 33	Forensic Video Analyst	1
R v Snowdon	2016 NSSC 321	Police Constable	0
R v Soni	2016 ABCA 231	Accident Reconstruction Expert (also a police officer)	0
R v Sriskanda	2016 ONCJ 667	Police Sergeant	1
R v Vader	2016 CarswellAlta 1704	Expert in Human Molecular Genetics	1
Rioux and Nova Scotia (Department of Justice), RE	2016 CarswellNS 981	Police Officer	0
Rosati v Reggimenti	2016 ONSC 7013	Certified Professional Accountant	0
U. (L.A.) v U. (I.B.)	2016 ABQB 74	Psychologist	0
Untinen v Dykstra	2016 ONSC 4721	Unspecified	0

Uponor AB v Heatlink Group Inc.	2016 FC 320	Engineer	0
Virc v Blair	2016 ONSC 49	Business Valuator	1
Wise v Abbott Laboratories, Ltd.	2016 ONSC 7275	Doctor	0
Wright v Detour Gold Corp.	2016 ONSC 6807	Investment banker and director of a number of publicly-listed mining companies.	0
XPG, A Partnership v Royal Bank of Canada	2016 ONSC 3508	Former Employee of the plaintiff company	0
AE v TE	2017 ABQB 449	Psychologist	0
Brookfield Residential (Alberta) LP v Imperial Oil Ltd.	2017 ABQB 218	Geoenvironmental Engineer	0
Bruff-Murphy v Gunawardena	2017 ONCA 502	Psychiatrist	1
Ciba Specialty Chemicals Water Treatments Limited v SNF Inc.	2017 FCA 225	Unspecified	0
Cole v Lau	2017 BCSC 2610	Psychiatrist/Radiologist	0
Hilton v Brink	2017 BCSC 1492	Orthopedic Doctor	0
Hodgson v Musqueam Indian Band	2017 FC 509	Real Estate Appraisal Expert	0
J.P. v British Columbia (Children and Family Development): Claire Reeves	2017 BCCA 308	Doctor	1
J.P. v British Columbia (Children and Family Development): Glen Woods	2017 BCCA 308	Retired RCMP Officer	0
Kaul v The Queen	2017 TCC 55	Licensed Art Appraiser	0
Keresturi v Keresturi	2017 ONCA 162	Expert Valuator	1
Level One Construction Ltd. V Burnham	2017 CarswellBC 3727	Journalism Professor	0
Lewis v Lewis	2017 PECA 11	Accountant	0

Lichtman v R	2017 TCC 252	Rabbi	0
Luckett v Chahal	2017 BCSC 1031	Medical Illustrations	1
Matsalla v Rocky Mountain Dealerships inc.	2017 SKQB 335	Journeyman Mechanic	1
McKitty v Hayani	2017 ONSC 6321	Medical Doctor	1
Nerbas v Manitoba	2017 MBQB 206	Infrastructure, Development, and Planning	0
Noseworthy v Noseworthy	2017 ONSC 2752	Chartered Professional Accountant	0
R v Abbey	2017 ONCA 640	Expert on gang culture	0
R v Bookout	2017 SKQB 41	Forensic Alcohol Specialist	0
R v Dim	2017 NSCA 80	Nurse/Sexual Assault Examiner	0
R v Ennis-Taylor	2017 ONSC 5797	Psychologist	0
R v Ford	2017 ABQB 542	Psychologist	0
R v France	2017 ONSC 2040	Forensic Pathologist	0
R v Garnier	2017 NSSC 259	Psychologist	0
R v Livingston	2017 ONCJ 645	Retired Police Officer	1
R v McManus	2017 ONCA 188	Police Officer	1
R v Reid	2017 ONSC 4082	Police Detective	0
Sivell v Sherghin	2017 ONSC 1368	Urologist	1
St. Clair Boating & Marina, a Division of 1537768 Ontario Ltd…	2017 ONSC 23	Fire Investigator	0

Stout v Bayer Inc.	2017 SKQB 329	Attorney	1
Turner v Dionne	2017 BCSC 1924	Psychiatrist	1
Virc v Blair	2017 ONCA 394	Business Valuator	1
Walter Energy Canada Holdings, Inc., Re	2017 BCSC 53	Attorney	0
Young v Insurance Corp. of British Columbia	2017 BCSC 2306	Forensic Engineer	0
Fortress Real Developments Inc. v Franklin	2018 ONSC 296	Unspecified	1
Fraser, Re	2018 NSUARB 74	Engineer	0
McKinlay v Zachow: Dr. Ashwani Singh	2018 ABQB 365	Medical Doctor	1
Oberholtzer v Tocher	2018 BCSC 821	Orthopedic Surgeon	0
R v Natsis	2018 ONCA 425	Traffic Reconstruction Expert	0
West Moberly First Nations v British Columbia	2018 BCSC 730	Expert on environmental matters	1