

Expert Demonstrative Evidence

by Richard M. Bogoroch and Melanie A. Larock

Bogoroch & Associates

Introduction

Expert evidence is critical to the outcome of a personal injury case. As the reliance of expert witnesses in litigation increases, new and enhanced techniques are required to communicate complex issues to the trier of fact. Because expert testimony is often difficult to convey to a jury, demonstrative evidence is helpful to explain, illustrate or summarize the evidence of an expert to make it understandable and effective. Since “seeing is believing” and demonstrative evidence appeals directly to the senses of the trier of fact, this kind of evidence is a persuasive tool to simplify the technical and legal issues and improve both juror comprehension and retention.

Before allowing demonstrative evidence of an expert into evidence, the court must be satisfied that the opinion evidence of the expert is admissible. One of the goals of the amendments to Rule 53.03 of the *Rules of Civil Procedure* is to promote expert evidence that is fair, objective, and non-partisan.¹ The new Rule 53.03 bears upon the admission of demonstrative evidence used by experts. Demonstrative evidence is inextricably linked to the testimony of the expert witness who authenticates the evidence and establishes its relevancy, accuracy, fairness and probative value.

¹ *Rules of Civil Procedure*, R.R.O. 1990, Reg. 194, r. 4.1.01, r. 53.03 as amended by O. Reg. 438/08, s. 8. [“Rules”].

Admissibility of Demonstrative Evidence used by Experts

Demonstrative evidence is often adduced to help explain expert evidence. It supplements an expert's opinion evidence to assist the trier of fact to understand evidence outside of his or her range of experience so that a correct conclusion on the evidence can be reached.

Since the types of demonstrative evidence and the purposes for which it is introduced are extremely varied, it is completely within the discretion of the trial judge in ruling upon the admissibility of demonstrative evidence.² A few general principles apply to the law of demonstrative evidence. The demonstrative evidence must be: i) relevant; ii) accurate and fair; iii) the probative value must outweigh any prejudicial effect of the evidence; iv) the demonstrative evidence must not offend any exclusionary rule; and v) it would be of assistance to the court.

The general rule regarding the admissibility of evidence is that evidence that is relevant to a material issue is admissible unless it is caught by an exclusionary rule or unless the prejudicial effect outweighs its probative value. A trial judge exercises a gatekeeper role and uses discretion to consider the value of the evidence, based on both its reliability and the strength of the inferences it leads to, against the costs presented by the evidence, including the practicalities of its presentation, the fairness to the parties and to witnesses, and the potentially distorting effect the evidence can have on the outcome of the case.³

In *Sopinka, Lederman & Bryant: The Law of Evidence in Canada*, 3rd ed. (Markham: Lexis Nexis, 2009), authors Bryant, Lederman, Letterman & Fuerst write at s.

² *Draper v. Jacklyn*, [1970] S.C.R. 92.

³ *Whilby v. Redhead*, [2010] O.J. No. 1820 at para. 2.

12.126:

The proponent of the expert evidence must satisfy the trial judge that the proffered expert witness acquired special or peculiar knowledge through study or experience in respect of the subject matter of the opinion. The witness' expertise must be in the particular field in which the witness' opinion is sought and the expert's evidence should be confined to her or his area of expertise to minimize its potential for misuse or confusion. The admissibility of expert evidence does not depend upon the means by which that skill was acquired. As long as the trial judge is satisfied that the witness is sufficiently experienced in the subject matter at issue, the judge will not be concerned with whether the expertise was derived from specific studies or by practical training, although that may affect the weight to be given to the evidence.⁴

For demonstrative evidence to be admissible, the expert evidence that it exists to explain and illustrate must also be admissible. The Supreme Court of Canada in *R. v. Mohan* (1994), 114 D.L.R. (4th) 419 identifies four pre-conditions for the admission of expert evidence: i) relevance; ii) necessity in assisting the trier of fact; iii) the absence of any exclusionary rule; and iv) a properly qualified expert.

Mr. Justice Doherty in *R. v. Abbey*, [2009] O.J. No. 3534 proposed a two-step process for determining the admissibility of an expert opinion:

1. The evidence must meet the four prerequisites of admissibility of expert evidence as identified in *R v. Mohan*, which is a rules based analysis.
2. The trial judge must decide whether the expert evidence that meets the pre-conditions is sufficiently beneficial to the trial process to warrant its admission despite the potential harm to the trial process that may flow from the admission of the expert evidence. This is the gatekeeper inquiry.

In addition to the above requirements for admissibility, an expert witness must have prepared a Rule 53.03 compliant report and acknowledged that they owe a duty to

⁴ Bryant, Lederman, Letterman & Fuerst, "*Sopinka, Lederman & Bryant: The Law of Evidence in Canada, 3rd Edition.*" (2009). Markham: Lexis Nexis.

assist the court with opinion evidence that is fair, objective and non-partisan. Therefore, the first step proposed by Mr. Justice Doherty would also include statutory compliance with Rule 53.03, which provides for the following requirements for an expert report:

- (a) The expert's name, address and area of expertise;
- (b) The expert's qualifications and employment and educational experiences in his or her area of expertise;
- (c) The instructions provided to the expert in relation to the proceeding;
- (d) The nature of the opinion being sought and each issue in the proceeding to which the opinion relates;
- (e) The expert's opinion respecting each issue and, where there is a range of opinions given, a summary of the range and the reasons for the expert's own opinion within that range;
- (f) The expert's reasons for his or her opinion, including, a description of the factual assumptions on which the opinion is based, a description of any research conducted by the expert that led him or her to form the opinion, and a list of every document, if any, relied on by the expert in forming the opinion; and,
- (g) An acknowledgement of expert's duty under Rule 4.1 signed by the expert.⁵

Rule 53.03 goes on to provide that an expert witness may not testify with respect to an issue, except with leave of the trial judge, unless the substance of his or her testimony with respect to that issue is set out in a Rule 53.03 compliant report. If an expert report contains a reference to a demonstrative aid or it is intended that the expert witness shall refer to a demonstrative aid that can be considered to be a "document", opposing counsel should be given an opportunity to review the demonstrative evidence.

The gatekeeper inquiry consists of a cost-benefit analysis, which is case-specific. The "benefit" side of the evaluation requires a consideration of the probative potential of the evidence and the significance of the issue to which the evidence is directed. When one looks to potential probative value, one must consider the reliability of the evidence.

⁵ *Rules, supra* note 1, r. 53.03 as amended by O.Reg. 438/08, s. 48.

Reliability concerns reach not only the subject matter of the evidence, but also the methodology used by the proposed expert in arriving at his or her opinion, the expert's expertise, the language used in explaining the opinion and the extent to which the expert is shown to be impartial and objective.

The "cost" side of the ledger addresses the various risks inherent in the admissibility of expert opinion evidence, described succinctly by Binnie J. in *J.-L.J.* at para. 47 as "consumption of time, prejudice and confusion". There is a risk that a jury may abdicate its fact-finding role. Expert opinion evidence can also compromise the trial process by unduly protracting and complicating proceedings. Circumstances in which a judge in a civil case would exclude demonstrative evidence because of its inflammatory nature should be rare because of our regular exposure to popular media.

In *McCormick on Evidence*, (5th ed., Volume 2, the authors make the following observations:

Again, even if no essentially emotional response is likely to result, demonstrative evidence may convey an impression of objective reality to the trier. Thus, the courts are frequently sensitive to the objection that the evidence is misleading,' and zealous to insure that there is no material differential between objective things offered at trial and the same or different objective things as they existed at the time of the events or occurrences in litigation.

...

A still different set of problems is presented by photographs or videotapes which do not portray original facts in controversy, but rather represent one party's staged reproduction of those facts. Here the extreme vividness and verisimilitude of pictorial evidence is truly a two-edged sword. For not only is the danger that the jury may confuse art with reality particularly great, but the impressions generated by the evidence may prove particularly difficult to limit or, if the film is subsequently deemed inadmissible, to expunge by judicial instruction. The latter difficulty may be largely eliminated by a preliminary viewing by the court in chambers, and the decided cases suggest that this expedient is widely employed.⁶

⁶ Strong, Brown, Dix, Imwinkelried, Kaye, Mostellen and Roberts, "*McCormick on Evidence*, 5th Ed., Volume 2." (1999) West Publishing Co. at pp. 17-19.

The cost-benefit analysis demands a consideration of the extent to which the opinion evidence is necessary to a proper adjudication of the facts to which that evidence is directed. Expert opinion evidence that brings no added benefit to the process will be excluded. Opinion evidence that is essential to a jury's ability to understand and evaluate material evidence will register high on the "benefit" side of the scale. Arguably, demonstrative evidence ought to register as a benefit to the judicial process by facilitating the trier of fact's understanding of complicated expert evidence.

In *Jenkyns v. Kassam*, [2006] O.J. No. 5494, the Court held that in order to rely on demonstrative evidence by an expert, a proper foundation must be established:

1. The expert's testimony is relevant and admissible and the demonstrative aid relates to the evidence;
2. The expert whose testimony the demonstrative aid depicts is familiar with it;
3. The demonstrative aid fairly and accurately reflects the expert's evidence to which it relates; and
4. The demonstrative aid will aid the trier of fact in understanding or evaluating the expert's evidence.⁷

The introduction of demonstrative evidence must be done in a manner that will ensure the integrity of the evidence so tendered.⁸ Demonstrative evidence must be accurate, fair and not misleading. The foundational information upon which the demonstrative evidence is based ought to be presented to the court to aid in the understanding of the evidence. For example, for a medical illustration to be admitted into evidence, there must be oral evidence to confirm that it is an accurate and fair depiction of what it purports to show. For a computer reconstruction animation to be admitted, "overall it must be proven that the procedures used to feed the data into the computer

⁷ *Jenkyns v. Kassam*, [2006] O.J. No. 5494 at para. 5.

⁸ *Greer (Litigation Guardian of) v. Kurtz*, [2008] O.J. No. 2925 at para. 10.

were reliable and that someone checked the accuracy of the data and the computer operations.”⁹

Owens (Litigation Guardian of) v. Grandell [1994] O.J. No. 496, 46 A.C.W.S. (3d) 796 (Gen. Div.) is the leading case regarding the admissibility of computer animations in Ontario. A computer-generated animation depicted the engineer’s reconstruction of the accident. During the testimony of the accident reconstruction expert, the process of obtaining the measurements, distances and other foundational information were explained, as well as the process of data entry. Kozak J. outlined the requirements for what would need to be proven for the admissibility of a computer-generated reconstruction animation to support and compliment the evidence of an engineer:

- (1) From the testimony from the accident reconstruction expert that the data points measured at the accident site were accurately recorded.
- (2) From the testimony of the person who entered those data points into the program that they were entered correctly.
- (3) That the algorithms used in the form and motion software validly apply the law of physics and validly render accurate images of the scenes depicted in the exhibit.
- (4) Competent opinion testimony from the accident reconstruction expert that any additional modifications to the exhibit, made after the computer's first renderings, are valid.
- (5) Testimony that the experts are familiar with the demonstrative exhibit.
- (6) A showing that the exhibit will aid the trier of fact in understanding the expert's testimony.

In *Lancaster (Litigation Guardian of) v. Santos*, [2011] O.J. No. 3706, the engineer’s calculations for the animation were not provided to the court. It was not

⁹ *Owens (Litigation Guardian of) v. Grandell* [1994] O.J. No. 496, 46 A.C.W.S. (3d) 796 (Gen. Div.).

proven that the data was reliable or accurate. The animation was inadmissible and the expert's opinion was rejected.

By contrast, in *Greer (Litigation Guardian of) v. Kurtz*,¹⁰ both the accident reconstruction engineer and the forensic animator testified to the accuracy of the animations depicting the accident reconstruction. Justice B.H. Matheson was satisfied that “all the safeguards had been met.” The animation was based on photos, measurements, final resting positions and other physical data that was explained to the court. Other safeguards include cross-examination and the right of the other party to adduce its own evidence to criticize the demonstrative evidence. In *Greer*, the animation was of assistance to the court and therefore admitted.

Guidelines for the effective use of demonstrative evidence

In Geoffrey D.E. Adair's article, *The Uses and Abuses of Demonstrative Evidence*, he outlines useful guidelines:¹¹

1. Place a reasonable limit on the number of demonstrative aids employed. The cumulative effect of too many of demonstrative aids may create the impression that your case is superficial.
2. Avoid undue use of those aids you do employ. Over-exposure of the demonstrative aid tends to lessen its impact.
3. Use carefully prepared “professional looking” aids.
4. Employ sing-message demonstrative aids.
5. Demonstrative aids ought to be tendered in keeping with the natural and regular flow of the case.
6. Make sure that copies of the visual material are available for the trier of fact, or at least the material is readily visible.

¹⁰ *Supra*, note 5.

¹¹ Geoffrey D.E. Adair “The Uses and Abuses of Demonstrative Evidence” at pp. 365-377. *The Law Society of Upper Canada Special Lectures 2003: The Law of Evidence*.

7. Finally, make sure that demonstrative aids are only used in circumstances where they will truly be effective in imparting a strong message or leaving an impact upon the trier of fact. It is counterproductive to use a demonstrative aid for the sake of attempting to be a modern advocate, when the aid itself adds nothing.

Conclusion

Much has been written about the efficacy of demonstrative evidence at trial. Demonstrative evidence is an important tool of persuasion. It can simplify a complex subject through the use of visual aids and is more memorable than the spoken word. Demonstrative evidence can prevent boredom and renew interest.

The admissibility of an expert's demonstrative evidence is inextricably connected with the admissibility of the opinion evidence of the expert. The principles of fair, objective and non-partisan expert evidence will also be applied to the admissibility of demonstrative evidence used to assist experts in the presentation of their evidence. Demonstrative evidence can enhance the efficiency of the litigation process by explaining complicated or lengthy evidence, enhancing the retention of information by the jury and focusing testimony; thereby, enhancing the ability of the trier of fact to come to a conclusion.

Appendix

Forms of Demonstrative Evidence

Photographs	<p><i>Draper v. Jacklyn</i> (1970), 9 D.L.R. (3d) 264 (S.C.C.):</p> <p>Photographs may be admitted if:</p> <ol style="list-style-type: none">1) they are relevant;2) they assist the jury's understanding of the treatment and condition of the plaintiff;3) the photographs are accurate; and4) the prejudicial effect of the photographs is not so great that it would exceed the probative value.
Video Tapes	<p><i>Teno v. Arnold</i> (1974), 7 O.R. (2d) 276: "day in the life" video</p> <p>The test to be applied in considering the admission of videotape and photographs is the same: <i>Rodger v. Strop</i> (1992), 14 C.P.C. (3d) 289.</p> <p><i>R. v. Nikolovski</i> (1994), 19 O.R. (3d) 676 (Ont. C.A.) approved following test for admissibility of video tapes:</p> <ol style="list-style-type: none">1) the accuracy of the tapes in truly representing the facts;2) their fairness and absence of intention to mislead; and3) their verification on oath by a person capable of doing so.
Treatment chronologies	<p><i>Calic v. Aitchison et al</i>, [1996] O.J. No. 154 (Gen. Div.). Justice Hockin stated at para. 19, "Mr. Calic's medical history since the accident is lengthy and complicated. Counsel for Mr. Calic usefully summarized the history by tracing Mr. Calic's five year journey from one specialist to another in documentary form (Exhibit 5)."</p>
Computer Generated Animations	<p><i>Owens v. Grandell</i>, [1994] O.J. No. 496 (see above)</p>

	<p><i>McCutcheon v. Chrysler Canada Ltd.</i>, [1998] O.J. No. 5818 stated criteria for admissibility:</p> <ol style="list-style-type: none"> 1) the computer animation is relevant to the issues in the proceeding; 2) the hardware and software methods employed by the animator are verified by the animator; 3) the computer animation does not contain editorial comments other than the usual headings; 4) the computer animation accurately represents the plaintiff's condition; 5) the computer animation is necessary considering that it would be difficult for a witness to describe the effects of the injury and the jury's understanding of the issues would be greatly assisted by the animation; 6) the prejudicial value does not outweigh the probative value considering that the animation is presented in a way very simple straightforward manner, without sound or editorializing and with few headings; and 7) the presentation was not misleading or unfair to the defendant. <p><i>Cejvan v. Blue Mountain Resorts Limited</i>, [2008] O.J. No. 5443: three-dimensional computer model of the ski run used by the plaintiff. The animation was accepted only for the limited purpose of showing the general topography of the area. L.C. Templeton J. was critical of the animation because it lacked accuracy, relied upon too many unknown factors and was prejudicial.</p>
<p>Anatomical illustrations or models</p>	<p><i>Majencic v. Natale</i>, [1968] 1 O.R. 189 (H.C.J.)</p> <p><i>Jenkyns v. Kassam</i>, [2006] O.J. No. 5494</p>

Power Point Presentations	<i>R. v. Sandham</i> (2009), Carswell Ont 6592 (S.C.J.): admissible <i>R. v. Paul</i> (2004), Carswell Ont 1256: inadmissible
---------------------------	--