

# Proving Causation and Future Risk in the Course of Environmental Decision-Making

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Proving causation and future risk in the course of environmental decision-making remains one of the more difficult issues facing both the courts and the specialized administrative tribunals established to deal with project approval under a variety of planning and environmental statutes.

A secondary issue which is often debated when considering the nature of environmental decision-making concerns the ability and effectiveness of the decision-makers to render environmental decisions, which of necessity require an understanding of both complex scientific data and an appreciation of an increasingly broad range of social values.

The purpose of this paper is to examine some of the reasons why administrative tribunals have adopted a less rigid approach to proving causation and future risk than the courts, and to explore the advantages and disadvantages of the different types of tribunals which might be better suited to meet the expectations of those affected by environmental decisions, while at the same time ensuring that those decisions are environmentally sound. It is not meant to be an exhaustive treatment of either issue, but rather to provide a basis for further thought and discussion.

## **I ADMINISTRATIVE TRIBUNALS AND THE COURTS: DIFFERING APPROACHES TO EVIDENCE**

While both courts and administrative tribunals have to deal with environmental issues, the different contexts in which decisions on those issues are made explains why the courts and tribunals take different approaches to the use of evidence within their respective jurisdictions. A court dealing with an environmental matter is faced with two distinct parties with clearly opposing interests. Generally, the event in question has occurred so the court has the ability to weigh the evidence presented by the parties against the effect of the activity. This requires a determination of whether the plaintiff to the action has been successful in showing that the defendant's actions caused the damage suffered by the plaintiff. In making that determination, the court does not as a rule consider interests other than those of the parties to the litigation. The court is not concerned

with encouraging the parties to the litigation to present certain evidence, as it is up to the parties to ensure that they present sufficient evidence to support their arguments.

In contrast, tribunals faced with environmental issues have a forward focus, as the role of the tribunal is to determine whether the event or activity should proceed. In addition, the tribunal is required to consider interests other than those of the proponent of the activity and those opposing the activity, as the broader effect on the environment and the community must be considered. The result is that the board making such decisions has to ensure that it has access to both scientific and technical evidence and non-scientific information, including societal and community values, in order to make a decision. In order to achieve this, the environmental administrative decision-making process is designed to be less intimidating and more accessible than the litigation system.<sup>1</sup> The structure of the hearing and the physical setting of the hearing room is less formal than in litigation context, and there is more flexibility with respect to the application of rules and procedures. This departure from the more formal court procedure provides a more appropriate type of forum in which scientific information and non-scientific information can be "communicated, tested, and assimilated by both the public and the decision-maker".

The strict rules of evidence which courts must follow in all circumstances generally do not apply to environmental tribunals, as long as the tribunals comply with the rules of natural justice and fairness. This is the case unless a statute specifically provides that certain rules of evidence do apply. For instance, Ontario environmental boards must comply with the *Canada Evidence Act*<sup>2</sup> and the *Ontario Evidence Act*,<sup>3</sup> and, as Ontario environmental boards are decision-makers, their activities are also subject to the *Statutory Powers Procedure Act* (the SPPA).<sup>4</sup> The section of the SPPA dealing with the admissibility of evidence allows the tribunal to admit any evidence as long as it is relevant and not repetitious.<sup>5</sup> However, evidence which would be inadmissible in a court by reason of any privilege under the law of evidence or statutes is not admissible.<sup>6</sup>

Although the boards are not strictly bound by the rules of evidence, they do not completely ignore those rules. The tribunal will consider the rules of evidence in terms of the signals that the rules send about a particular piece of evidence. For instance, if a piece of evidence would not be admissible according to the rules of evidence either because it is a hearsay statement and does not fall under an exception, or because it is not necessary or reliable,<sup>7</sup> the tribunal may see this as a sign that they should be cautious about admitting that evidence. The trustworthiness of the evidence, which can be tested by cross-examination, is an important consideration, as the Board has to consider whether the evidence should be admitted because it is helpful to the Board in reaching a decision or whether it would be harmful or unfair to the opposing party.<sup>8</sup>

The result of not having to rigidly adhere to the rules of evidence can be seen in the type of evidence that is admitted by an environmental board. A tribunal may admit most documents without any oral proof of authenticity, whereas in a court situation, subject to statutory exceptions, documents are not admissible as evidence without oral proof.<sup>9</sup> Hearsay statements may be admitted after the tribunal has considered the circumstances under which the statement was made and the opportunity for the cross-examination and balanced those conditions against the potential prejudice or unfairness to the other side if that evidence is admitted.<sup>10</sup>

The less stringent application of the evidence rules by environmental boards achieves two goals. The first is that more information is put before the board for consideration. As the board's mandate is to make the best decision possible based upon the evidence before it, it is in the tribunals's interest to have as much relevant evidence before it as possible. There will be many different views with respect to a proposed activity as environmental boards do not deal with defined parties of plaintiffs and defendants as courts do. In the environmental context, the participants are not clearly defined as they have different interests depending on how they might be impacted by the proposed activity, the degree of that impact and whether they have an overall interest in the subject matter of the hearing. Therefore, it is imperative that as many of these parties have an opportunity to present their varied evidence and opinions to the environmental boards.

Secondly, the application of the rules of evidence in a less stringent and formalistic fashion encourages rather than discourages public participation. Members of the public often appear at the public hearing unrepresented by counsel, and would be apprehensive about giving evidence in the absence of an understanding of the rules of evidence. All parties, irrespective of the financial resources they have available to gather evidence for the hearing, have a right to be at the environmental hearing and a right to be heard. In order to make public participation meaningful in the context of the environmental decision-making process, the public should be able to provide the board with whatever evidence it has, even if that evidence may not be admissible under the rules of evidence.

The consequence of this approach is that the environmental tribunal shifts its focus from the admissibility of evidence to the weight to be given to each piece of evidence once it is admitted.<sup>11</sup> Even if evidence which would normally be inadmissible in a court of law is before the tribunal, the evidence will not necessarily be given a great deal of weight. For instance, hearsay evidence will likely be admitted by an environmental board in keeping with its goal of encouraging public participation in the decision-making process, but it likely will not be given the same weight as evidence which does not offend the hearsay rule. This will be especially true if there is not opportunity for cross-examination of that hearsay evidence. Another example is the fact that both the public and experts can give opinion evidence before administrative tribunals, although the tribunal may give greater weight to the opinion of the expert than a member of the public.<sup>12</sup>

With this shift in focus comes a greater need for cross-examination, as administrative tribunals will generally give less weight to any evidence which is introduced without an opportunity for testing the evidence by cross-examination.<sup>13</sup> This is especially true of expert witnesses presenting opinion evidence and predictions. Expert opinion evidence consisting of predictions and projections is greatly relied on at environmental hearings, because it is not possible for the board members to compare that opinion evidence against the end result which will occur at some point in the future.<sup>14</sup> However, before the board members will place great reliance on those projections and opinions they must be tested. The ideal way to test the veracity of the

evidence is through cross-examination of the witnesses presenting this evidence because, as Wigmore said, cross-examination is "the greatest legal engine ever invented for the discovery of truth".<sup>15</sup>

Ontario environmental boards, as decision-makers, are bound by the SPPA, which allows a party to a proceeding to "conduct cross-examinations of witnesses at a hearing reasonably required for a full and fair disclosure of the facts in relation to which they have given evidence".<sup>16</sup> Even though boards in other jurisdictions which are not constituted as decision-makers may not be required to provide for cross-examination of witnesses, cross-examination should be encouraged as it gives the decision-makers an opportunity to get at the truth and thus have a better chance of making the best decision possible.

## **II. WHY PROVING CAUSATION IS LESS OF A BARRIER IN ENVIRONMENTAL HEARING**

Now that it is clear that evidence is dealt with differently by environmental boards than by the courts, the question is what effect does the different treatment have on one's ability to prove causation or future risk? This is an important question, as scientific difficulties proving causation continue to be significant obstacles to environmental litigation.

In toxic tort cases, the plaintiff must overcome three distinct problems with respect to causation. The first is that the plaintiff must establish that she or he was exposed to the substance in question.<sup>17</sup> In the case of personal injury toxic tort cases, the following factors are valid considerations: the magnitude of the exposure to the substance, the length of the time over which the exposure occurred, the route of the exposure, and how much of the substance actually entered the body.<sup>18</sup>

The second problem is that the plaintiff must adduce evidence to establish a link between the release of the substance and the exposure to the substance and the damage suffered by the

plaintiff even if that damage does not become apparent for several years. In the case of a personal injury action, evidence may be required to establish a statistical relationship between the toxin and the disease to demonstrate that there is a higher disease rate in the population exposed to the substance than occurs in its absence.<sup>19</sup> In the case of a personal injury action, evidence may be required to establish a statistical relationship between the toxin and the disease to demonstrate that there is a higher disease rate in the population exposed to the substance than occurs in its absence.<sup>20</sup> If the harm is not simultaneous with the exposure to the toxic substance, it must be demonstrated that there is a latency period and, that despite the passage of time, there is a link between the injury or damage suffered and the plaintiff's exposure to the toxic substance.<sup>21</sup>

It is an extremely difficult scientific task to link exposure to a specific damage or injury.<sup>22</sup> The difficulty exists because little is known about the toxicity of many chemicals in their common use, their dispersion through the air and the water, their persistence or stability or their affinity for living organisms.<sup>23</sup> It is especially difficult to establish that low level exposure to contaminants, even over a long period of time, produces effects above those created by naturally occurring background levels of the substance felt to be the cause of the damage.<sup>24</sup> Matters are made worse by the fact that scientists are very careful about the conclusiveness of the statements or predictions they make. Scientists will point out the factors that may influence the validity of their conclusions such as the uncertainty of the natural background levels of the substance and the problems of multiple causality, which makes it difficult to establish a strong proof of causality.<sup>25</sup> At most, the experts are willing to state a reasonable probability that their results are correct.<sup>26</sup>

The third problem is proving that the damage or injury suffered was caused by the toxic substance rather than from any unknown cause.<sup>27</sup> Often experts can do little more than give a range of probabilities, as there are usually many available explanations for the harm done, including natural causes or other pollutants.<sup>28</sup> This type of statistical evidence is not generally sufficient to prove causation in the litigation system, since causation in toxic tort cases, just as in any other civil litigation matter, must be proved on a balance of probabilities. Even though the

balance of probabilities may be "too blunt a tool for [a situation] of increased risk",<sup>29</sup> at present it is the standard of proof that courts require plaintiffs to meet.

Courts are reluctant to impose liability on individuals or corporations where it is not clear, at least on a balance of probabilities, that the alleged harm was caused by the activity of the individual or corporation. This position was adopted by a Nova Scotia court in *Palmer v. Stora Kopparbergs*.<sup>30</sup> In that case, a group of landowners and inhabitants of a nearby reserve brought actions on their own behalf and on behalf of other residents and landowners in the area to try and stop Nova Scotia Forest Products from spraying a herbicide, on the grounds of potential health effects. After hearing a great deal of scientific evidence on the toxicity of dioxin, the judge held that the plaintiffs had not proved, on the balance of probabilities, that a health risk existed from the spraying of the herbicide. When discussing the issue of whether dioxins pose health risks, the Court stated that:

*[...] a Court of law is no forum for the determination of matters of science. Those are for science to determine, as facts, following the traditionally accepted methods of scientific inquiry. A substance neither does nor does not create a risk to health by Court decree and it would be foolhardy for a Court to enter such an enquiry. If science itself is not certain, a Court cannot resolve the conflict and make the thing certain.*<sup>31</sup>

Invariably, it is extremely difficult to achieve the required degree of certainty in the environmental context, and the ramifications of the lack of certainty are of significantly greater importance in the win/lose arena of litigation. There is more flexibility in the environmental administrative board context, as administrative tribunals do not require the same degree of certainty associated with the evidence, with the result that scientific difficulties in proving causation before administrative tribunals are often less of a barrier to overcome.

Parties appearing before administrative tribunals are faced with the same scientific difficulties as parties to an environmental litigation. In addition, there are other complications which exist because the environmental board's focus is on the future, and a determination must be



made whether there is sufficient evidence to allow a board to conclude that the proposed activity will or will not pose some future harm to the environment.

Causation problems exist because of the difficulty in forecasting the environmental impact that a particular activity may have on the environment and the importance of that environmental impact.<sup>32</sup> This inability to predict the impact of the proposed activity is compounded by the fact that long term harm is particularly difficult to predict and assess. Additional problems include the fact that baseline data may not exist or, if that information does exist, it does not include details of annual or seasonal fluctuations, the fact that interactions between substances or projects cannot always be foreseen and the fact that the impact may involve a chain of effects that cannot be foreseen.<sup>33</sup>

While administrative tribunals require proof on the balance of probabilities that the proposed activity will not be harmful (the same standard required by the courts), administrative tribunals may be more willing to allow a project to proceed even if not all the evidence meets this standard. This willingness may be motivated in part by the practical requirement of the board having to reach a decision with respect to approval on the "best available evidence" before it at a particular point in time prior to the proposed activity actually proceeding.<sup>34</sup> However, certain conditions must be present before the board will allow an activity to proceed on the basis of evidence that may not meet the balance of probabilities standard. Those conditions could include the existence of safeguards such as containment systems to be incorporated into the site to contain the materials and prevent any leakage beyond the site boundaries and the creation and implementation of strict monitoring procedures. For example, while the board may be willing to allow the establishment of a landfill even if the evidence with respect to leachate containment does not meet the balance of probabilities test, it will only do that if it is satisfied that the engineering safeguards to be incorporated into the site design will prevent any leachate migration beyond the site boundaries. The board will require that these conditions be in place in order to deal with the possibility that their decision to approve the project may be wrong. If there is any doubt about both the proposed activity and the proposed safeguards, the proposal will not be accepted.

The gravity of the consequences that could occur if the decision to proceed is the wrong decision will also influence the decision of the board whether they will allow an activity to proceed on the basis of evidence which does not meet the balance of probabilities test. The higher the degree of risk and the severity of the damages, the more likely it is that the tribunal will require a higher standard of proof about the safety of the proposed activity to be met.<sup>35</sup>

### **III. WHAT TYPE OF TRIBUNAL IS BEST SUITED TO HEAR ENVIRONMENTAL MATTERS?**

Should a board dealing with complex environmental issues be made up of generalists such as occurs in the judicial system and Ontario environmental boards, or should the board be modelled after a "Science Court" where the members of the board have special expertise in the area of inquiry and are appointed on an *ad hoc* basis to hear a particular application, such as the panels appointed under the federal *Environmental Assessment Review Board*?

Several reasons have been advanced to support the position that the "Science Court" model would be advantageous. They include the fact that having experts on a board would lessen the need for cross-examination, and thus significantly reduce increasingly lengthy and costly hearings. As board members would have an expertise in the particular areas of dispute, they would be in a position to evaluate the evidence and arguments themselves. In addition, because the board would be in a better position to analyze and consider the evidence before it due to its members' particular expertise, better decisions may be reached.

It is my view, however, that the arguments in favour of a board comprised of permanent members of varying backgrounds far outweighs the benefits of the so-called "Science Court". First, there would always be a danger that the board or panel members might not decide on the evidence put before the board. The members' personal biases may affect their decisions on technical matters, particularly as scientists "do not have the tradition of judges or quasi-judicial board members in learning how to put them [personal biases] aside."<sup>36</sup> This is troublesome,

because fairness requires that any matters to be taken into account in the absence of proof should be brought to the attention of the parties, in order to provide them with an opportunity to object to that evidence and to provide the court with contrary evidence if they feel that is necessary.<sup>37</sup> In addition, there is case law supporting the proposition that while a board may "take notice of generally recognized scientific and technical facts, information or opinions within its specialized knowledge,"<sup>38</sup> it cannot use its private opinions to find facts not established by the evidence presented to the board and it may not substitute its private opinions for that evidence.<sup>39</sup>

Second, procedural consistency and policy continuity may be lost or adversely affected if the makeup of the boards changes constantly in order to ensure that the hearing panels are comprised of decision-makers with the specific expertise relative to the issues to be raised in a particular application.<sup>40</sup> In addition, "the integrity of an environmental legal system designed to reflect public interest concerns will suffer if social policy issues are not dealt with in a consistent manner on a case-by-case basis".

Third, examination of the facts in issue in the absence of policy considerations must often be avoided in the environmental context, as the resulting decision may not reflect the societal value judgments which must be made when dealing with social, economic and cultural issues relevant to environmental assessment legislation.

Fourth, I concur with Ian Blue that the support for a "Science Court" is founded on the erroneous assumption that the only problem with dealing with environmental issues is the decision-makers' lack of understanding of the evidence presented.<sup>41</sup> Supporters of this model pay little heed to the fact that scientific uncertainty may be the major obstacle and that difficulty can be adequately dealt with by allowing cross-examination to be conducted before the environmental board.

Lastly and most troubling is the fact that the adoption of a "Science Court" would threaten the fundamental philosophy of providing public participation as a principal component of the

environmental approval process. The evidence presented to a "Science Court" would likely be presented in such a way that it would be incomprehensible to laypersons. Even though the most complex technological issues can be broken down into fairly simple, straightforward components, the parties appearing before the "Science Court" may not feel the necessity of explaining their evidence in simpler terms because they would know that they were dealing with persons with expertise in that area. As a result, the public would be prevented from being able to participate in the environmental hearing process in any meaningful way.

## **CONCLUSION**

Proving causation is still an obstacle to overcome when dealing with environmental issues either before the courts or boards. However, boards take a different approach to the standard of proof that must be met before the board may approve the activity. The result of this approach is that while causation problems exist in all environmental situations, they do not present as much of an obstacle in the environmental board context. Boards are more willing to allow a proposal to proceed even if it is not possible to show that no harm will occur, as long as the evidence about the effectiveness of the safeguards meets the balance of probabilities test. However, if there is any doubt about both the effectiveness of the safeguards and the impact of the proposed activity, the proposal will not be accepted.

Even though there is a great deal of attention paid to the evidence on which a board's decision is based and the need to evaluate this evidence in order to reach a decision of whether the proposed activity should proceed or not, the adoption of a "Science Court" model to make these determinations would not in my view improve the process for the reasons cited.

## FOOTNOTES

1. M.J. Jeffery, "Science and the Tribunal" (1988) 15 *Alternatives* 24 at 26; see also E. Ratushny, "Rules of Evidence and Procedural Problems before Administrative Tribunals" (1989) 2 *C.J.A.L.P.* 157 at 159.
2. *Canada Evidence Act*, R.S.C. 1985, c. C-5, s. 2.
3. *Evidence Act*, R.S.O. 1990, c. E-23, s. 2.
4. *Statutory Powers Procedure Act*, R.S.O. 1990, c. S-22, s. 3(1).
5. According to section 15(1) of the *Statutory Powers Procedure Act*, the tribunal may admit as evidence any oral testimony and any document or other thing relevant to the subject-matter of the proceeding whether or not that evidence is given or proven under oath or affirmation or admissible as evidence in a court, but a tribunal may exclude anything that is unduly repetitious. Note that section 15(2) of the SPPA may narrow the effect of section 2 of the *Ontario Evidence Act*.
6. *Supra* note 4 at s. 15(2).
7. *R. v. Khan* (1990), 59 C.C.C. (3d) 92, [1990] 2 S.C.R. 531 at 540, 79 C.R. (3d) 1; *R. v. Smith* (1992), 139 N.R. 323 at 338.
8. I. Blue, "Common Evidentiary Issues before Administrative Tribunals and Suggested Approaches" (1993) 14 *Advocates' Q.* 385 at 400.
9. *Ibid.* at 399-400. Section 15(4) of the SPPA: "Where a tribunal is satisfied as to its authenticity, a copy of a document or other thing may be admitted as evidence at a hearing".
10. E. Ratushny, *supra* note 1 at 168.
11. I. Blue, *supra* note 8 at 393.
12. *Ibid.* at 389.
13. B.E. Smith, "Practice and Procedure before the Environmental Assessment Board (Ontario)" (1981-1982) 3 *Advocates' Q.* 195 at 206.
14. R. Eisen, "Expert Opinion Evidence at Environmental Board Hearings" (1989) 3 *C.E.L.R. (N.S.)* 63 at 64.
15. Wigmore as quoted in S.L. Smith, "Science in the Courtroom: The Value of an Adversarial System" (1988) 15 *Alternatives* 18.

16. *Supra* note 4 at s. 10(c).
17. E.A. Cronk, "Canadian Developments on Toxic Tort Issues: Common Law Liability for Personal Injury" (Canada-U.S. Environmental Conference, 24 March, 1993, Toronto) at 46-47.
18. *Ibid.*
19. *Ibid.* at 47.
20. B. Pardy, "Risk, Cause and Toxic Torts: A Theory for a Standard of Proof" (1989) 10 *Advocates' Q.* at 277-278.
21. *Supra* note 17 at 48.
22. H. Turkstra & M. Valiante, "Preparing For and Evaluating the Plaintiff's Environmental Law Suit" (1992) 10 *Can. J. Ins. L.* 85 at 89. See also J. Swaigen, "The Role of the Civil Courts in Resolving Risk and Uncertainty in Environmental Law" (1991) 1 *J.E.L.P.* 199 at 212.
23. J. Swaigen, *ibid.* at 212.
24. H. Turkstra & M. Valiante, *supra* note 22 at 89.
25. E.L. Hughes, "Government Response to Environmental Issues: Institutional Inadequacies and Capacity for Change" (1991) 1 *J.E.L.P.* 51 at 57.
26. *Ibid.*
27. *Supra* note 17 at 48.
28. J. Swaigen, *supra* note 22 at 212.
29. *Supra* note 20 at 283.
30. *Palmer v. Stora Kopparbergs* (1983-84), 26 *C.C.L.T.* 22 (N.S.T.D.).
31. *Ibid.* at 130.
32. P.S. Elder, "Environmental and Sustainability Assessment" (1992) 2 *J.E.L.P.* 125 at 130.
33. *Ibid.* at 130.
34. *Supra* note 15 at 20 as quoted in J. Swaigen, *supra* note 22 at 215.

35. M. Jeffery, *supra* note 1 at 27.
36. *Supra* note 15 at 22.
37. E. Ratushny, *supra* note 1 at 182.
38. *Supra* note 4 at s. 16(2).
39. *Pfizer Co. Ltd. v. Canada (Deputy Minister of National Revenue)* (1976), 68 D.L.R. (3d) 9 at 15, (1976) 24 C.P.R. (2d) 195, [1977] 1 S.C.R. 456; *Best Rank Investments Inc. v. Tenants of 3161 Eglinton Avenue East, Scarborough* (1990), 42 O.A.C. 15 at 18 (Gen. Div.); *Re. Golomb v. College of Physicians & Surgeons of Ontario* (1976), 12 O.R. (2d) 73 at 93 (Gen. Div.).
40. M. Jeffery, *supra* note 1 at 29.
41. I. Blue, *supra* note 8 at 392.