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978-0-521-51326-5 - Science and the Precautionary Principle in International Courts and Tribunals: Expert Evidence, Burden of Proof and Finality

Caroline E. Foster

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## **Science and the Precautionary Principle in International Courts and Tribunals**

By canvassing a range of international scientific disputes, including the *EC - Biotech* and *EC - Hormones* disputes in the WTO, the *Case concerning Pulp Mills* and the *Gabčíkovo-Nagymaros* case in the International Court of Justice, and the *Mox Plant* and *Land Reclamation* cases dealt with under the United Nations Convention on the Law of the Sea, Caroline Foster examines how the precautionary principle can be accommodated within the rules about proof and evidence and advises on the boundary emerging between the roles of experts and tribunals. Breaking new ground, this book seeks to advance international adjudicatory practice by contextualising developments in the taking of expert evidence and analysing the justification of and potential techniques for a precautionary reversal of the burden of proof, as well as methods for dealing with important scientific discoveries subsequent to judgments and awards. A new form of reassessment proceedings for use in exceptional cases is proposed.

CAROLINE E. FOSTER is a senior lecturer in the Faculty of Law at the University of Auckland, New Zealand. She also advises governments and NGOs on matters relating to disputes before international courts and tribunals and issues arising in public international law more generally.

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# Science and the Precautionary Principle in International Courts and Tribunals

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Expert Evidence, Burden of Proof  
and Finality

Caroline E. Foster



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‘As science begins to change the social world, great transformations of factual inquiry lie ahead for all justice systems.’

Damaška, Mirjan *Evidence Law Adrift* (New Haven: Yale University Press, 1997), p. 151

‘science *n.* 1. the intellectual and practical activity encompassing the systematic study of the structure and behaviour of the physical and natural world through observation and experiment.’

*The Concise Oxford Dictionary*, 12th edn (Oxford Reference Online, 2010)

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## Preface

Cases involving scientific knowledge and the risk of future harm raise a host of new problems in connection with evidence, proof and the finality of adjudicatory decision-making. Indeed, international rules relating to evidence and proof in international courts and tribunals are evolving as a result of the increasingly high incidence of such disputes. Increased use is being made of different methods for the taking of expert evidence; the rules on the allocation of the burden of proof are coming under scrutiny; and the rules ensuring the finality of international adjudication require consideration. This book explores and evaluates the procedural developments that are taking place and assesses further steps to be taken, particularly with a view to recognising and accommodating the precautionary principle.

According to the precautionary principle, action to counter a serious threat to human health or the environment should not be delayed merely because of scientific uncertainty. The need to protect human life or health and the environment should be assumed, once certain thresholds are crossed. Proving that harm will occur is not required. This approach sits awkwardly with the usual precepts of adjudication, which revolve around the proof of fact. The challenge is for adjudicators to make reasoned decisions that pay due heed to the harm that is threatened in every dispute, despite the absence of perfect knowledge.

The topics of international scientific disputes are greatly varied. They have included subjects as diverse as fish stock conservation, radioactive pollution of the rivers and of the oceans and the air, global warming, coastal erosion, ecological damage, nuclear weapons trials, the release of carcinogens in pulp and paper processing, protection of sea turtles, the harmfulness of white asbestos, use of growth-promotion hormones in beef production, sanitary and phytosanitary risks to salmon and to horticultural production, and the safety of genetically modified organisms in the food chain and the biosphere. Science does not provide conclusive and comprehensive answers to all the questions that arise in such fields in a physically and economically interdependent world.

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Scientific disputes are characterised by diverging views on the science, and frequently revolve around identifiable scientific uncertainties.

Members of international courts and tribunals must endeavour to the fullest extent possible to reach a cogent understanding of relevant scientific points. In part, they will depend on counsel's skill in crossing the disciplinary divide. International lawyers dealing with the type of case discussed in this book must therefore be able to come to terms with the salient points of conflicting scientific advice. The advocate's primary aim in a dispute involving scientific uncertainty must be to present the content of applicable science in a clear and logical way. The science must be put forward in a form that is readily digestible by a court or tribunal composed of individuals whose qualifications and experience lie in the field of law rather than science. This may involve many hours' preparation by a litigating team, where counsel work closely with the team's scientific advisers in order to identify how the existing scientific research may strengthen a party's legal arguments, and how aspects of the science being advanced by the other party require to be tested. Yet neither counsel nor judges can expect to become expert biologists or physicists fully capable of addressing scientific issues in the context of those disciplines. Nor should an advocate's understanding of the way that the law may operate be expected from individuals whose expertise lies in the sciences.

What then are the best methods for facilitating a process that enables conflicts and inconsistencies in the scientific evidence to be worked through intelligibly to all those involved? The existing adversarial approach may provide a good starting point. Parties' confrontations of one another through the adversarial process will help to flush out the technical issues, and to increase the overall intensity with which the evidence is scrutinised. There is also a trend towards investigative procedures. Scientific disputes appear to be prompting a gradual evolution in international judicial practice in relation to evidence and proof, even as developments in civil procedure have been taking place in many jurisdictions at the national level. International courts and tribunals are increasingly likely to take steps to investigate scientific disputes themselves, including site visits, consultation with international organisations, and the appointment of independent experts. International law offers an invaluable laboratory in which the trammels of domestic debate over the respective merits of adversarial and inquisitorial procedures are readily escaped and a fresh interplay in the field of evidence and proof may be experienced. Eclecticism is

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permissible, and provides scope for practical experimentation with different options, including new procedures for the taking of expert evidence, as seen in the World Trade Organization (WTO) dispute resolution process.

Certain problems do arise in the course of such developments, particularly in relation to international courts' and tribunals' reliance on expert evidence. The role of an expert appointed by a court or tribunal is formally limited to assisting a tribunal in the establishment or elucidation of matters of fact, but in practice how easy is it to identify a dividing line between questions and issues on which expert comment may appropriately be made and those in respect of which this may be less appropriate? Law and fact often run closely together in the type of case that is under consideration in the book. Experts will sometimes have genuinely helpful insights to offer not only into solely scientific questions, but also into interpretative aspects of the legal questions before a court. Is this advice a positive feature of the adjudication of international disputes involving scientific uncertainty? Associated with the central matter of how to accommodate the precautionary principle in international adjudication is the question of the best way to deal with independent experts' beliefs about the degree of precaution that would be appropriate in a case. For example, a marine biologist may be able to advise a court on the importance of precautionary approaches and of urgent action in stock management. Does international tribunals' receipt of such advice raise cause for concern? Or is it a welcome element of the adjudication of international disputes involving scientific uncertainty, in that the receiving of expert testimony may enable a tribunal to gain a fuller appreciation of the need for precaution in the circumstances of the case? The view taken in this book is to accept that experts' advice will impact closely on judicial appreciation of questions arising in scientific disputes, while continuing to require international tribunals to take full responsibility for their decisions. Transparency in relation to the reliance placed on expert evidence is important at all stages of the proceedings, and will help ensure that parties have the opportunity to contradict evidence with which they disagree.

A related question is the extent to which expert testimony may be used to discharge the burden of proof that is usually shouldered by a litigant. A tribunal's reliance on experts' input will naturally alleviate the load carried by disputants. Is this objectionable in principle, or is it simply part of the reality of the international litigation of scientific

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disputes? Do the same principles apply in relation to scientific and technical information provided by international organisations? Surely it is artificial to maintain the view that the evidence that goes to discharge the burden of proof is strictly limited to that submitted by the parties?

Despite the trend towards greater use of investigative mechanisms, the allocation of the burden of proof may remain a potentially decisive factor in a dispute's adjudication. One of the central issues addressed in this book is that, where there is an established situation of scientific uncertainty, it may be unfair to make findings against a party for failure to discharge the burden of proof. The usual rules on burden of proof may require modification. Can the precautionary principle reverse the burden of proof in international adjudication? Arguably there is indeed scope for international courts and tribunals to reverse the burden in the exercise of their inherent powers. From a technical point of view, the best method for reversing the adjudicative burden of proof in order to give effect to the need for precaution would be by introducing a partial reversal through the application of a precautionary *prima facie* case approach. Where it was proven as a matter of fact that a particular risk was sufficiently serious, scientific certainty about the dimensions of the risk should not be necessary. For example, this would help a complainant more easily make out a case that a respondent was engaging illegally in hazardous polluting activities or unsustainable resource extraction. Similarly a precautionary *prima facie* case approach would help a respondent to protect itself against health and environmental risks under exceptions within the free-trade regime and similar regional rules. In all cases the justification for applying a *prima facie* case approach would need to be assessed carefully. The blend of law and fact in the applicable legal rules will vary, and the appropriate outcome will vary.

Coming to the question of the finality of international adjudication, it is clear that there will sometimes be discontent with decisions that have been handed down in scientific cases, especially where these disputes centre around issues that are particularly contentious at the domestic level. This discontent may be articulated with reference to developments in the scientific knowledge in the period after the decision is handed down, and indeed in some instances there may be subsequent scientific developments that do affect the basis of a previous judgment or award. To put themselves in a position where their pronouncements could be undermined by subsequent scientific developments will be unappealing to international courts and tribunals. What can be done?

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The law on revision of international judicial decisions is, appropriately, limited in its scope. Would the doctrine of nullity assist in a case where scientific developments reveal that an adjudicatory decision has been based on a significant misapprehension of the facts? What will happen if a party previously found to be out of compliance with its international obligations declares that scientific research has revealed new information and as a result this party is now in compliance with its international legal obligations? If there are new proceedings, which party will bear the burden of proof? Should expert advice be sought from the same sources as in the previous proceedings, and will relevant scientific issues require to be canvassed *de novo*? How will the principle of *res judicata* operate in this context?

This book advances three recommendations in relation to how the precautionary principle is to be accommodated within international adjudicatory process. The first recommendation is that we should welcome the precautionary influence wielded through expert scientific evidence – whether this be scientific evidence from the parties and their appointed experts, or evidence from experts appointed and consulted directly by international courts and tribunals. The second recommendation is that international courts and tribunals give consideration to modifying the way they apply the rules on burden of proof in order to accommodate the precautionary principle in exceptional cases. As mentioned above, this could be achieved through the exercise of courts' and tribunals' inherent powers, and would best take the form of a precautionary *prima facie* case approach. The third recommendation is that provision be made by individual courts and tribunals within their decisions, or institutionally in the case of *ad hoc* tribunals, for the reassessment of cases where it is asserted that subsequent scientific developments affect the basis of a decision.

The book addresses a wide range of disputes. International courts and tribunals are being called upon to deal with disputes involving alleged risks to human health and the environment under bilateral and multi-lateral treaties, as well as under general international law. A central characteristic of such disputes is that they look to the future. Disputants come to an impasse not over a past injury, with illegality, causation and harm requiring to be proved and compensation duly granted. Rather, disputes are arising over the risk of future harm to human health or the environment that could be produced by a particular activity. These disputes concern 'live' policy decisions. Usually, a claimant's desired outcome is a change of conduct by the respondent.

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The subject matter of these disputes, already alluded to above, has been diverse. There have been disputes relating to the use and development of watercourses, as in the *Case concerning the Gabčíkovo-Nagymaros Project (Hungary/Slovakia)* and the *Case concerning Pulp Mills (Argentina v. Uruguay)*, both heard before the International Court of Justice. There have been disputes concerning the protection of marine resources and the marine environment, as in the *Southern Bluefin Tuna case (Australia and New Zealand v. Japan)*, the *MOX Plant case (Ireland v. United Kingdom)*, and the *Case concerning Land Reclamation (Malaysia v. Singapore)*. All three of these cases were dealt with under the dispute settlement provisions of the United Nations Convention on the Law of the Sea. Disputes have arisen relating to nuclear testing, as in the *Nuclear Tests cases (Australia v. France) (New Zealand v. France)* and the related proceedings in *Request for an Examination of the Situation*, both heard by the International Court of Justice, or the construction of hazardous waste facilities, as in the investment dispute *Metalclad Corporation v. United Mexican States*, which arose under the North American Free Trade Agreement and was decided under the Additional Facility Rules of the International Centre for Settlement of Investment Disputes (ICSID). There has also been a significant series of cases involving scientific uncertainty under the multilateral agreements of the WTO. The cases *United States – Import Prohibition of Certain Shrimp and Shrimp Products* and *European Communities – Measures Affecting Asbestos and Asbestos-Containing Products* concerned trade-restrictive measures adopted under environmental and health exceptions to the General Agreement on Tariffs and Trade (GATT), while the cases *European Communities – Measures Concerning Meat and Meat Products*, *Australia – Measures Affecting Importation of Salmon* and *European Communities – Approval and Marketing of Biotech Products* are examples of cases assessing similar measures for the protection of human, animal and plant life and health adopted under the WTO Agreement on Sanitary and Phytosanitary Measures (SPS Agreement).

The decisions of the various different international courts and tribunals will be considered in the book, including the decisions of the International Court of Justice, its predecessor the Permanent Court of International Justice, the International Tribunal for the Law of the Sea and arbitral tribunals operating under the United Nations Convention for the Law of the Sea, the United Nations Human Rights Committee, dispute settlement panels established under the WTO, the WTO Appellate Body, the Permanent Court of Arbitration and other arbitral tribunals, including tribunals operating under the auspices of the ICSID.



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Occasional reference is made to the practice of international administrative tribunals and claims commissions, the European Court of Human Rights, the Inter-American Court of Human Rights, the Court of Justice of the European Communities, the Court of First Instance of the European Communities and the Court of the European Free Trade Area. Although reference is made to the practice of the European courts, the book concerns disputes under public international law. The specific focus in the book is on international disputes where there is an alleged breach of international law and questions of state responsibility are raised. Boundary disputes and forensic disputes in international criminal law are not addressed, as they do not raise the same problems of prospective harm. Nor does the book examine determination of the quantum of damages due to an injured party.

For ease of reference, the term 'adjudication' is used to refer to the decision-making both of international courts and international arbitral tribunals. The terms 'adversarial' and 'investigative' are used to refer to trends in civil procedure, rather than the alternative terms 'accusatorial' and 'inquisitorial' that are often used respectively by civil lawyers and common lawyers in discussions about the distinctions between the civil and common law systems. The aim is to move away from a perspective that incorrectly views the civil and common law traditions as mutually exclusive, and to use the descriptors 'adversarial' and 'investigative' in their own right as ways to describe developments in international law. In making reference to national legal systems, indulgence is sought for a predominance of reference to English, French and occasionally Spanish civil procedure from among the civil law systems; and equally for the restriction of comparative work largely to the common law and the civil law. This is largely due to the author's background, as well as the availability of resources.

A word might also be said about the inclusion of WTO dispute settlement bodies in the category of international courts and tribunals. The highly developed dispute-settlement mechanisms of the WTO, established in 1995 under the WTO Understanding on Rules and Procedures governing the Settlement of Disputes, have provided a framework for the thorough judicial investigation by WTO panels of a considerable number of disputes where scientific uncertainties lie close to the heart of the issues dividing the parties. Many of these disputes have fallen under the SPS Agreement. Sanitary and phytosanitary measures are measures applied to protect human, animal and plant life and health against risks from pests and diseases, as well as additives or

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contaminants in food. A number of the disputes have also been decided under the environmental and health exceptions found in Article XX(b) and (g) of the GATT. In most of these cases there has been an appeal to the WTO Appellate Body, usually in relation to a broad range of issues, both substantive and procedural. The result is a sophisticated set of panel and Appellate Body reports that give close consideration to many of the issues addressed in this book.

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This book has its genesis in issues I dealt with in the legal division of the New Zealand Ministry of Foreign Affairs and Trade, particularly the relationship between the Cartagena Protocol on Biosafety (which we negotiated during that time) and the law of the World Trade Organization. Following my time at the Ministry, I was fortunate to carry out my doctoral work at the University of Cambridge on scientific uncertainty in international adjudication, under the supervision of Daniel Bethlehem, QC, now Legal Adviser to the Foreign and Commonwealth Office. During the last seven years since the completion of that thesis, much has taken place in the fields of science and precaution in international courts and tribunals. The jurisprudence is growing thickly around us, and arbitral and adjudicatory practice continues to advance in an effort to deal with the new challenges posed. In the interim, my perspectives on the procedural aspects of the adjudication of international scientific disputes have developed further and I have been able to consult widely with individuals working in the field. As a result, I have many people to thank for their help in producing this book.

The Lauterpacht Research Centre for International Law has always opened its doors to me when I have had the opportunity to carry out focused work on this project in the quiet and beautiful environs of Cambridge. During the book's gestation I have been fortunate to meet with many people with more direct, first-hand insights than me into the problems dealt with in this book. At an early stage, a number of individuals helped in the evolution of my thinking on the problems of scientific evidence, including Professor Thomas Cottier, Theofanis Christoforou, Professor Peter Van Den Bossche, Valerie Hughes, Professor Don McCrae, Torsten Ström, Olivier Lalande, Professor

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