

5-1-2003

Science and International Trade—Third Generation Scholarship

David A. Wirth

Boston College Law School, wirthd@bc.edu

Jeffery Atik

Loyola Law School, jeffery.atik@lls.edu

Follow this and additional works at: <https://lawdigitalcommons.bc.edu/lspf>

 Part of the [International Law Commons](#), [International Trade Law Commons](#), and the [Science and Technology Law Commons](#)

Recommended Citation

David A. Wirth and Jeffery Atik. "Science and International Trade—Third Generation Scholarship." *Boston College International and Comparative Law Review* 26, no.2 (2003): 171-181.

This Article is brought to you for free and open access by Digital Commons @ Boston College Law School. It has been accepted for inclusion in Boston College Law School Faculty Papers by an authorized administrator of Digital Commons @ Boston College Law School. For more information, please contact nick.szydowski@bc.edu.

SCIENCE AND INTERNATIONAL TRADE— THIRD GENERATION SCHOLARSHIP

JEFFERY ATIK* & DAVID A. WIRTH**

INTRODUCTION

This essay introduces three outstanding pieces of Third Generation scholarship addressing the incorporation of science-based tests within international trade regimes. It also presents the extraordinary remarks of the late Bob Hudec,¹ delivered on the occasion of the Science and International Trade Conference sponsored by Boston College and Suffolk University law schools.²

The role of science the international trade regimes has been an object of scholarly attention for almost a decade.³ First Generation science and trade scholars questioned whether science was up to the task which had been put to it—resolving contentious trade disputes involving environmental protection and health and safety risks. These writers were acutely aware of science's limits.⁴ Following the landmark *EC-Hormones*⁵ decision by the World Trade Organization (WTO) Appellate Body, a Second Generation of scholars focused on questions

* Professor of Law and Sayre Macneil Fellow at Loyola Law School (Los Angeles).

** Professor of Law and Director of International Programs at Boston College Law School.

The authors express their gratitude to Deans John Garvey and Robert Smith, to the participants in the Boston College/Suffolk University Science and International Trade conference, and especially to Marianne Hudec for permission to print Professor Hudec's remarks.

¹ Professor Robert Hudec passed away on March 12, 2003. Daniel Altman, *Robert E. Hudec, 68, Expert on Global Trade Dies*, N.Y. TIMES, Mar. 31, 2003. At the time of his death, Hudec was Research Professor of International Law at the Fletcher School of Law & Diplomacy and Professor Emeritus of Law at the University of Minnesota Law School.

² The Boston College/Suffolk University Conference—*Science and International Trade*—was held in Boston on October 20, 2000. David Wirth and Jeffery Atik organized the Conference.

³ See David Wirth, *The Role of Science in the Uruguay Round and NAFTA Trade Disciplines*, 27 CORNELL INT'L L.J. 817 (1994).

⁴ Wirth, *supra* note 3; Vern Walker, *The Siren Songs of Science: Toward a Taxonomy of Scientific Uncertainty for Decisionmakers*, 23 CONN. L. REV. 567 (1991).

⁵ WTO Appellate Body Report on European Community Measures Concerning Meat and Meat Products, WT/DS26/AB/R; WT/DS48/AB/R (Jan. 16, 1998) (adopted Feb. 13, 1998).

presented by the decisional law—the textual and structural limits of the “science-based” disciplines found in the international trade regime.⁶

A Third Generation of work is now blossoming. New (and old) writers are returning to first principles, on the one hand, and are looking beyond the confines of specific regimes, on the other. Vern Walker, for example, carefully dissects risk assessment, the supposedly neutral and central requirement of the WTO’s sanitary and phytosanitary (SPS) regime, and finds it riddled with hidden political (i.e. non-scientific) decision points.⁷ Todd Weiler and Olivette Rivera-Torres reach out beyond the WTO to active and emerging sites for international contest where science will likely play a role: Weiler to North American Free Trade Agreement’s (NAFTA) investor/state dispute resolution mechanism⁸ and Rivera-Torres to the Cartagena Protocol on Biosafety.⁹

As international trade regimes grow stronger, their ability to check and challenge national legislation increases. National standards—which may be uncontroversial on their face when examined solely from the national perspective—become problematic when they fail to match up with standards applied by trading partners. The fact of inconsistent standards operates to create non-tariff barriers.

First in regional settings, such as the European Union (EU), and more recently in the global trading regime, powerful norms have been introduced to coerce nations to suspend the application of their respective national standards to imported goods. The imperatives of free trade are to sweep away inconsistent national standards. Harmonization and global standards are the international means of eliminating conflicts between standards; equivalency and mutual recognition are national tools (at times mandated by regional or international authorities) used to reduce regulatory conflict.

Reducing regulatory freedom-of-action strikes the heart of national political autonomy—sovereignty, if you will. This is particularly so in areas such as environmental and food safety regulation, where

⁶ See Vern Walker, *Keeping the WTO from Becoming the ‘World Trans-science Organization’: Scientific Uncertainty, Science Policy, and Factfinding in the Growth Hormones Dispute*, 31 CORNELL INT’L L.J. 251 (1998).

⁷ Vern Walker, *The Myth of Science as a “Neutral Arbiter” for Triggering Precautions*, 26 B.C. INT’L & COMP. L. REV. 197 (2003).

⁸ Todd Weiler, *The Treatment of SPS Measures Under NAFTA Chapter 11: Preliminary Answers to an Open-Ended Question*, 26 B.C. INT’L & COMP. L. REV. 229 (2003).

⁹ Olivette Rivera-Torres, *The Biosafety Protocol and the WTO*, 26 B.C. INT’L & COMP. L. REV. 263 (2003).

the people have long-standing and legitimate expectations of protection by their governments.¹⁰ Architects of the new trade regimes—NAFTA and the WTO—seized on science to clearly divide the legitimate from the protectionist. Measures protective of public health, or worker safety, or the environment, are to be considered legitimate (and insulated from a trade-based attack) if they have a scientific basis. The corollary is that measures lacking a scientific basis are unmasked as likely having a protectionist motive and effect. Science was to be the neutral and authoritative arbiter of this divide.

At the time of the Uruguay Round, the U.S./EU hormones dispute concentrated the minds of the negotiators. Indeed the postures of the two disputants were erected on scientific (or non-scientific) grounds—the presence (or absence) of risk of harm to humans consuming hormone-treated beef. The hormones dispute prompted the new SPS accords¹¹—and placed scientific determinations at the heart of the international trade dispute settlement.

I. SCIENCE AND INTERNATIONAL TRADE SCHOLARSHIP— THE EARLY GENERATIONS

The conclusion of the Uruguay Round marked a significant movement towards the use of “scientific” determinations to scrutinize national legislation, especially in the area of health laws (known as “sanitary and phytosanitary [SPS] measures” in WTO-speak). The WTO’s SPS Agreements introduced new principles, including the requirements of a scientific basis for SPS measures and of the conduct of a risk assessment.

A group of international trade scholars with knowledge of (or at least deep appreciation for) the scientific enterprise immediately recognized that resolving trade disputes by “science” raised a host of troubling issues. These writers comprised a First Generation working on the problematical use of science in international trade. We have

¹⁰ See generally Jeffery Atik, *Identifying Antidemocratic Outcomes: Authenticity, Self-Sacrifice and International Trade*, 19 U. PA. J. INT’L ECON. L. 229 (1998).

¹¹ The Uruguay Round agreements included a special agreement on SPS measures—the Agreement on the Application of Sanitary and Phytosanitary Measures, Apr. 15, 1994, Marrakesh Agreement Establishing the World Trade Organization, Annex 1A, LEGAL INSTRUMENTS—RESULTS OF THE URUGUAY ROUND vol. 31 (1994).

had the privilege of being both participants in, and contributors to, this debate for some time.¹²

The 1998 decision of the Appellate Body in *EC-Hormones* launched a Second Generation of science and international trade scholarship. With *EC-Hormones*, and the two succeeding WTO Appellate Body decisions on SPS matters—*Australia-Salmon*¹³ and *Japan-Varietals*¹⁴—scholars could focus on specific strengths and weaknesses of the new regime. Second Generation scholarship is decidedly less abstract, but perhaps more revealing, than the earlier, speculative work.¹⁵ A recent interdisciplinary conference at the University of Michigan¹⁶ exemplified the Second Generation approach.¹⁷

Motivated primarily by our own attraction to and respect for the subject matter, we decided to put together a meeting in Boston on what we thought was a rather esoteric issue. The resulting conference, entitled *Science and International Trade*, was held on October 20, 2000. The response, particularly among potential presenters, was far more gratifying that we could have anticipated. Contributors ranged across a broad cross section of the governmental, academic, and non-profit sectors from North America and Europe. Speakers included:

Nicholas Ashford of MIT's Technology and Law Program
 Francesca Bignami of Duke Law School
 Laura Campbell of Environmental Law International

¹² Wirth, *supra* note 3; David Wirth, *International Decisions. European Communities—Measures Concerning Meat and Meat Products*, 92 AM. J. INT'L L. 755 (1988); Jeffery Atik, *Science and International Regulatory Convergence*, 17 N.W. J. INT'L L. & BUS. 736 (1996–97).

¹³ WTO Appellate Body Report on *Australia—Measures Affecting Importation of Salmon*, WT/DS18/AB/R (Oct. 20, 1998) (adopted Nov. 6, 1998).

¹⁴ WTO Appellate Body Report on *Japan—Measures Affecting Agricultural Products*, WT/DS76/AB/R (Feb 22, 1999) (adopted Mar. 19, 1999).

¹⁵ For excellent examples, see Steve Charnovitz, *The Supervision of Health and Biosafety Regulation by World Trade Rules*, 13 TUL. ENVTL. L.J. 271 (2000); Joost Pauwelyn, *The WTO Agreement on Sanitary and Phytosanitary (SPS) Measures as Applied in the First Three SPS Disputes*, 2 J. INT'L ECON. L. 641 (1999); and David Victor, *The Sanitary and Phytosanitary Agreement of the World Trade Organization: An Assessment After Five Years*, 32 N.Y.U. J. INT'L L. & POL. 865 (2000).

¹⁶ The University of Michigan Health, Trade & Ecology Workshop—*Risk Assessment in the Context of Trade Disputes: How Well Are Scientific Principles Incorporated into the Resolution of Science-Based Trade Disputes?*—was held in Ann Arbor on November 1 & 2, 2001. The Michigan workshop was organized by Prof. Sioban Harlow.

¹⁷ Lawyers and public health scholars were matched to examine issues raised by the three initial WTO SPS cases. Scholarship resulting from the Michigan workshop includes Joost Pauwelyn, *The Use of Experts in WTO Dispute Settlement*, 51 INT'L & COMP. L.Q. 325 (2002); and Jeffery Atik, *The Weakest Link—Demonstrating the Inconsistency of "Appropriate Levels of Protection" in Australia-Salmon*, RISK ANALYSIS (forthcoming 2003).

Paul Epstein of Harvard Medical School
 John Garvey of Boston College Law School
 John Graham, then affiliated with the Harvard School of
 Public Health
 Patricia Hansen of The University of Texas School of Law
 Linda Horton of the Food and Drug Administration
 Robert Hudec of the Fletcher School of Law & Diplomacy
 Janet Martinez of the Consensus Building Institute
 Kilaparti Ramakrishna of the Woods Hole Research Center
 Nicolas de Sadeleer of CEDE-Brussels
 Joel Tickner of the University of Massachusetts-Lowell
 Vern Walker of Hofstra University School of Law
 Todd Weiler, then affiliated with the Fletcher School of Law
 & Diplomacy.

In organizing this conference, we hoped to stimulate a third wave of scholarship in this field. We also took the liberty of sitting back—delighting in the creative and insightful work that was presented us. We do, of course, have more to say on these matters and look forward to participating further in this Third Generation we mark with this essay.

II. THREE PIECES OF THIRD GENERATION SCHOLARSHIP

There remain at this writing but three cases decided under the WTO SPS Agreement, and together with these there is an additional case—*EC-Asbestos*¹⁸—that displays the WTO's new-found respect for science-based argument in resolving a trade dispute.¹⁹ This relative decisional quiet—and the emergence of new scholars focusing on the SPS regime—has permitted a return to a deeper examination of the problematics of the use of science in international trade law.²⁰ Robert Howse's testing of science and democratic values is an outstanding example of Third Generation scholarship.²¹

¹⁸ WTO Appellate Body Report on European Communities—Measures Affecting Asbestos and Asbestos-containing Products, WT/DS135/AB/R (Mar. 12, 2001), 40 I.L.M. 1193 (2001) (adopted Apr. 5, 2001).

¹⁹ See David Wirth, *International Decisions, European Communities—Measures Affecting Asbestos and Asbestos-Containing Products*, 96 AM. J. INT'L L. 435 (2002).

²⁰ See Theofanis Christoforou, *Settlement of Science-Based Trade Disputes in the WTO: A Critical Review of Developing Case Law in the Face of Scientific Uncertainty*, 8 N.Y.U. ENVTL. L.J. 622 (2000); Jan Bohanes, *Risk Regulation in WTO Law: A Procedure-Based Approach to the Precautionary Principle*, 40 COLUM. J. TRANSNAT'L L. 323 (2002).

²¹ Robert Howse, *Democracy, Science, and Free Trade: Risk Regulation on Trial at the World Trade Organization*, 98 MICH. L. REV. 2329 (2000).

This symposium issue of the *Boston College International & Comparative Law Review* presents three fresh—and exciting—examples of Third Generation science and international trade scholarship. Preliminary versions of two of these papers, those by Walker and by Weiler, were originally presented at the October 2000 conference—although it must be remarked that their authors have carried their respective themes far forward in the passing two years.

Vern Walker presents here a devastating disassembly of the identification and finding of risk. The elemental notion of risk is extremely problematic and explicitly political—hardly the neutral or technocratic refuge imagined by trade negotiators. The drafters of the WTO SPS Agreement understood that science would not be a complete source for dictating regulatory standards; nations would inevitably make political judgments. The design of the SPS Agreement was to pull scientific and political decisions apart—permitting each to be scrutinized with respect to its own values. Thus, the SPS Agreement mandates risk assessment, which is seen as a neutral, technocratic enterprise where science can be useful. Only measures based on risk assessment pass SPS muster. The requirement of risk assessment is both procedural and substantive. Nations are expected to conduct risk assessments—measures imposed without an adequate risk assessment process are capable of challenge. Further, there must be a rational relationship between the risk assessed and the measure imposed—this is the requirement of a scientific foundation (means/ends) as a matter of substance.

The division between the technocratic and the political is often described as one between risk assessment and risk management. The WTO SPS Agreement makes clear that political decisions (how much risk to tolerate) are sovereign decisions—generally immune from WTO attack.

Vern Walker's piece demonstrates that political choices permeate the risk assessment process as well. He marshals a host of problems attendant to risk assessment that are ignored or underconsidered. A simple notion—such as "risk of harm"—is so filled with preconceptions about causality, responsibility and the normal course of things as to be hardly neutral. We introduce error when we define the problem to redress. We are insensitive to measurement error—and the problem of learned behavior. We unknowingly commit sampling errors—and thus reach erroneous conclusions. Our models are primitive and oversimplified and we often cannot distinguish association from cause. The cumulative effect of these uncertainties—and what as a matter of choice we decide to ignore—undermine any confidence

that we can flee from the political in deciding whether a measure should stand.

Walker develops the notion of a “risk trigger”—a complex finding about the presence of a risk of harm that indicates that a regulatory response is appropriate. Walker examines triggers drawn from U.S., EU and WTO law. The setting of a risk trigger is pointedly nonscientific—the Federal Food, Drug, and Cosmetic Act’s triggers—whether a substance is “poisonous or deleterious” or “injurious to health”—are not simple scientific determinations. The setting of thresholds of risk, where regulation is mandated, is a political judgment, not a scientific one.

Todd Weiler asks how the newly developed science-based tests might be used in a NAFTA investment dispute. He notes that none of the rendered NAFTA Chapter 11 tribunal decisions has depended on a scientific determination. Yet Chapter 11, in different and at times oblique ways, investigates similar questions to those posed within the trade-in-goods regimes: is a particular regulatory action effected for a valid purpose or for a prohibited one? In trade law, the prohibited motive is protectionism. The corresponding notions in NAFTA investment law would be discrimination,²² less than minimum standard of treatment,²³ or compensable expropriation.²⁴ Can science tell us whether a regulatory program constitutes a “measure tantamount to an expropriation”? Or whether it is arbitrary, and thus fails to accord a minimum standard of treatment? Weiler argues the science-based tests are available to Chapter 11 tribunals and are appropriate.

Weiler sees great potential utility in the science-based discipline for resolving Chapter 11 disputes. A Chapter 11 tribunal could usefully borrow the SPS tests to check a challenged investment measure for certainty, transparency, and a rational means-end relationship. The science-based tests will not by themselves establish that a measure passes the “minimum standard of treatment” demanded by NAFTA Article 1105(1). The absence of a scientific basis, or even of risk analysis, would be suggestive, however, of deficient treatment. Weiler, in some sense, treats compliance by the NAFTA Party with the SPS disci-

²² North American Free Trade Agreement, Dec. 17, 1992, U.S.-Can.-Mex., arts. 1102, 1103, 1104, 107 Stat. 2057 (1994), 32 I.L.M. 605 (1993).

²³ *Id.* art. 1105(1).

²⁴ *Id.* art. 1110(1).

plines as an actionable expectancy of NAFTA investors under Chapter 11.²⁵

Weiler also pays attention to expropriation scenarios—both the *Ethyl* and *Methanex* cases arguably depended on the quality of the science behind the particular regulatory action that was asserted to effect a taking of the NAFTA investor's business. Weiler suggests that regulation should not be deemed confiscatory if there is a scientific basis for it. His assertion is quite bold—it is one thing to argue that a scientific basis can provide support for the “public purpose” prong of NAFTA Article 1110(1)(a) (a necessary predicate for a NAFTA-consistent taking); it is quite another to argue that regulation that meets a scientific test should not be considered a taking at all!

Since the first General Agreement on Tariffs and Trade (GATT) *Tuna-Dolphin* report in 1991,²⁶ there has been great interest in the global trade regime's approach to multilateral environmental agreements (MEAs) employing trade measures. This issue has been sufficiently persistent and has now earned its own acronym, the “MEA Problem.” Part of the concern has been practical, in that a number of important, near-universal agreements on protection of the stratospheric ozone layer, shipment of toxic wastes, and endangered species, employ trade restrictions in the service of environmental protection. A large part of the fascination continues to derive, as well, from the absence of any concrete disputes in which trade measures authorized by an MEA in fact have been challenged, leading to much speculation as to the outcome of such a hypothetical case.

When the Cartagena Protocol on Biosafety was adopted in 2000,²⁷ that agreement immediately took its place alongside the other MEAs that might be targeted by the WTO's trade disciplines. From an analytical point of view, however, this new agreement was different from the others. Unlike multilateral environmental agreements concluded earlier, the Biosafety Protocol was emblematic of a new generation of instruments negotiated against a backdrop of heightened attention to the potential for tension or outright conflict with international obli-

²⁵ Were Weiler's vision to come to pass, it would be an example of “post-discriminatory” international trade law decried by Hudec in his keynote remarks presented herein. Robert Hudec, *Science and “Post-Discriminatory” WTO Law*, 26 B.C. INT'L & COMP. L. REV. 185 (2003).

²⁶ WTO Dispute Settlement Body Report on United States—Restrictions on Imports of Tuna, DS21/R—39S/155 (1991) (circulated but never adopted).

²⁷ Cartagena Protocol on Biosafety to the Convention on Biological Diversity, Jan. 29, 2000, 39 I.L.M. 1027.

gations governing trade. While that situation might have been expected to produce greater clarity, the result was the reverse. The final text of the Biosafety Protocol, mirroring the underlying competing policy considerations, contains potentially contradictory language alternately suggesting that trade disciplines, or the environmental obligations in the instrument, ought to prevail over the other.

Olivette Rivera-Torres's article is probably the most thoughtful, detailed, and logical analysis yet of this situation. She commences with the proposition that a conflict between the Protocol and GATT/WTO rules ought not to be presumed, surely the most rational starting place for considering two agreements that are both potentially global in scope. She then proceeds objectively to dissect the possible scenarios under both the Protocol and the trade disciplines. Her conclusion that the likelihood of a conflict is low intuitively seems right, but an exhaustive, and, in our view, ultimately convincing, analysis like this has so far been lacking in the literature.

III. REMARKS AT THE BOSTON COLLEGE/SUFFOLK CONFERENCE: GARVEY AND HUDEC

Boston College Law School's John Garvey was one of the two "host deans" at the October 2000 conference.²⁸ In his welcoming talk, Dean Garvey identified analogous debates present in U.S. constitutional law. Garvey's remarks—which are presented in this volume²⁹—were echoed many times during the ensuing discussion and were explicitly invoked in Bob Hudec's keynote address.

The participants and audience at the Boston College/Suffolk conference had the pleasure of hearing a keynote presentation by Professor Robert Hudec, surely one of the preeminent thinkers of the day on trade law and policy. As this volume was reaching the final stages of preparation, Professor Hudec sadly passed away. While the reach of his intellect was truly global, we, in the Boston area, feel his loss particularly keenly. Bob, in the brief years following his retirement from the University of Minnesota Law School, was a fixture on international trade debates, making his professional home at yet a third Boston institution of higher learning, the Fletcher School of Law & Diplomacy. Indeed, were it not for his untimely death, we

²⁸ Suffolk University law dean Robert Smith was the other "host dean."

²⁹ John Garvey, *Science and International Trade*, 26 B.C. INT'L & COMP. L. REV. 183 (2003).

would have invited Bob to contribute introductory remarks for this volume.

Bob had a way of cutting to the heart of a problem while simultaneously viewing it afresh. He was a man of ideas, with an insatiable thirst for new learning. One of us was once abruptly summoned to Fletcher to respond to Bob's discovery of the precautionary principle, an emerging international good practice standard addressed by all three of the articles which follow. After an introductory presentation followed by a rigorous cross examination, Bob proceeded in a single syllable to label the precautionary principle mere "fog."

We are indeed fortunate to have a tape and transcript, which preserve Bob's remarks at the October 2000 event. Somewhat to our surprise, Bob displayed a healthy skepticism concerning the WTO Agreement on the Application of SPS Measures. Bob was never one to accept received wisdom at face value, and this occasion was no exception. He expressed a particular concern for overreaching on the part of trade-based disciplines. In explaining why, he coined a new term, "post-discrimination."

Bob drew a strong contrast between the SPS Agreement's science-based disciplines and more traditional tests of non-discrimination in the GATT and WTO agreements, which he considered to have been entirely successful in distinguishing between acceptable and abusive measures. Along the way, he left us with enduring insights into the real-world aspects of dispute settlement in trade agreements, capped by a memorable olfactory metaphor.

Bob's opening address established a tone of serious, purposeful inquiry for the rest of the day, for which he remained until its conclusion at a late hour. While we will miss his undoubtedly trenchant observations on problems of science in trade agreements yet to come, we are indeed fortunate to have had the benefit of his perceptive insights both on that day at Suffolk and on numerous other occasions.

CONCLUSION

Scholarship on the role of science in trade agreements, as indicated by the pieces in the present volume, may now have matured to the point that three distinct generations of thinking can be identified. The issues are sufficiently complex, and the difficulties of communication among the disciplines involved so profound, that it seems difficult to imagine that there could ever be a final word on this absorbing subject. The present volume, like the Boston College/Suffolk conference it follows, is motivated by the more modest, but nonethe-

less hopeful, aspiration of incrementally expanding our collective horizons. It is dedicated to catalyzing yet another generation of thinking on this most fascinating of topics.

Our work in this area continues.³⁰ We celebrate the expansion of the community of scholars, including non-lawyers, who are exploring these themes. We find ourselves renewed and inspired by this new work—and look forward to continuing our participation in this discourse.

³⁰ The road to an academic's hell is paved with good intentions of future projects. That said, David Wirth and Jeffery Atik are at work on a jointly-authored book on Science and International Trade.