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ARTICLES

RISK REGULATION, ENDOGENOUS PUBLIC CONCERNS, AND THE HORMONES DISPUTE: NOTHING TO FEAR BUT FEAR ITSELF?

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ABSTRACT

The dispute between the United States and the European Union ("EU") regarding the EU ban on meat imports treated with hormones raises the question: How should regulators respond to public fears that are disproportionate to the risks as evaluated by experts in risk assessment? If regulators cannot eliminate public fears through education, then there is some social benefit from regulations that reduce the feared risks and thereby reduce public anxiety and distortions in behavior flowing from that anxiety. These considerations imply that we cannot simply ignore public fears that technocrats would deem "irrational." On the other hand, there is the danger that special interests may seek to generate consumer anxiety and lobby for regulations that serve their interests. I explore an approach that takes public fears seriously as social costs but also treats them as endogenous variables. I use this framework to evaluate risk regulations in terms of economic efficiency and suggest that the danger of inefficient

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regulation is most acute when domestic industries promote or sustain fears regarding imported products. From this perspective, the World Trade Organization ruling against the EU in the hormones dispute, based on the risk assessment requirements in the Agreement on the Application of Sanitary and Phytosanitary Measures, may represent a reasonable approach to guarding against the danger of regulatory protectionism, understood broadly to describe inefficient regulations that the importing country would not have adopted but for the foreign nationality of the producers disadvantaged and the domestic nationality of the producers favored by those regulations.

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I. INTRODUCTION

Should governments respond to public fears with regulations designed to reduce the feared risks if a risk assessment fails to identify a significant risk at stake? Studies have confirmed that there is a vast disparity between the public perceptions of risk and the expert assessment of risk.[1] Cass Sunstein has suggested that this "persistent split between experts and ordinary people" regarding risks "raises some of the most interesting problems in all of social science."[2] He distinguishes between the "*technocrat*," who "would want to ignore public irrationality and to respond to risks if, and to the extent that, they are real," and the "*populist*,"

1. *See* STEPHEN BREYER, BREAKING THE VICIOUS CIRCLE: TOWARD EFFECTIVE RISK REGULATION 33–39 (1993).

2. Cass R. Sunstein, *The Laws of Fear*, 115 HARV. L. REV. 1119, 1120 (2002) [hereinafter Sunstein, *Laws of Fear*] (reviewing PAUL SLOVIC, THE PERCEPTION OF RISK (2000)).

who "would want to respond to public concerns simply because they are public concerns."[3] In formulating the appropriate response to a "quasi-rational public panic, based on an intense emotional reaction to a low-probability risk," Sunstein suggests, "both positions are far too simple."[4] This ambivalent suggestion raises the question of how we choose between the response of the technocrat and that of the populist in particular cases. When should risk regulation ignore public fears that seem irrational to the expert technocrat and when, if ever, should it respond to them?

The ongoing dispute between the United States and the European Union ("EU") over the use of growth hormones in cattle provides a prominent example of an international controversy raising this question. The European Community ("EC") banned the use of growth hormones in livestock farming and banned beef imports produced from cattle that had received these hormones. The effect was to ban virtually all beef from the United States, which produces most of its beef with the use of growth hormones. The EC claimed that meat from cattle treated with growth hormones was dangerous to human health, but the United States challenged this claim in a complaint before the World Trade Organization ("WTO"), which adopted a ruling by its Appellate Body against the EC.[5] The Appellate Body cited Article 5.1 of the Agreement on the Application of Sanitary and Phytosanitary Measures ("SPS Agreement"),[6] which requires WTO members to base their health and safety regulations on scientific risk assessments.[7]

While the United States claimed that the EC "ban lacked any scientific basis," the EC cited "consumer anxiety over the safety of beef treated with hormones."[8] The EC argued that the anxieties and preferences of its

3. Cass R. Sunstein, *Probability Neglect: Emotions, Worst Cases, and Law*, 112 YALE L.J. 61, 102 (2002) [hereinafter Sunstein, *Probability Neglect*]. *See also* Sunstein, *Laws of Fear*, *supra* note 2, at 1120–21.

4. Sunstein, *Probability Neglect*, *supra* note 3, at 101–02.

5. *See* Report of the Appellate Body, EC Measures Concerning Meat and Meat Products (Hormones), WT/DS26/AB/R & WT/DS/48/AB/R, para. 253 (Jan. 16, 1998) (adopted Feb. 13, 1998), 1998 WL 25520 (W.T.O.) [hereinafter Report of the Appellate Body].

6. *See id.* para. 108 (citing Agreement on the Application of Sanitary and Phytosanitary Measures art. 5.1, Apr. 15, 1994, Marrakesh Agreement Establishing the World Trade Organization, Annex 1A, LEGAL INSTRUMENTS—RESULTS OF THE URUGUAY ROUND vol. 27 (1994) [hereinafter SPS Agreement], http://www.wto.org/english/docs_e/legal_e/15-sps.doc).

7. *See* SPS Agreement, *supra* note 6, art. 5.1 ("Members shall ensure that their sanitary or phytosanitary measures are based on an assessment, as appropriate to the circumstances, of the risks to human, animal or plant life or health, taking into account risk assessment techniques developed by the relevant international organizations.").

8. Michele D. Carter, Note, *Selling Science Under the SPS Agreement: Accommodating Consumer Preference in the Growth Hormones Controversy*, 6 MINN. J. GLOBAL TRADE 625, 627

consumers were legitimate factors supporting its ban on growth hormones.[9] In contrast, the United States maintained that consumer anxieties in the absence of any actual risk to human health were insufficient to justify the EC ban.[10] Similarly, Canada also challenged the EC ban,[11] in part as a measure based on "factors not relevant to the protection of health," such as "meeting consumer anxieties,"[12] and the WTO panel charged with settling the dispute seemingly agreed that "consumer preferences" should be irrelevant in a risk assessment.[13] Thus, the dispute over the EC ban turned in part on the legitimacy of health regulations based on "bald consumer anxiety"[14] unsupported by "hard scientific evidence."[15]

The debate over regulatory reform in the United States features the same controversy. Some observers propose reforms based on "the recognition that disagreements over risk are reasonable" and on the premise that "public perceptions are entitled to as much deference as expert assessments."[16] Others propose reforms that stress "scientific integrity, especially as measured by quantitative risk assessment techniques."[17] Some of these proposals would use these techniques "as a screening device to rationalize priorities in risk regulation and, in particular, to ensure that

(1997). *See also* Michael Trebilcock & Julie Soloway, *International Trade Policy and Domestic Food Safety Regulation: The Case for Substantial Deference by the WTO Dispute Settlement Body Under the SPS Agreement*, *in* THE POLITICAL ECONOMY OF INTERNATIONAL TRADE LAW 537, 557 (Daniel L.M. Kennedy & James D. Southwick eds., 2002) (noting that the "EU viewed the ban as a legitimate response to public concerns about carcinogenic effects from the use of hormones as growth stimulants, even if there was little scientific support for these concerns").

9. *See* Carter, *supra* note 8, at 645, 652.

10. *See id.* at 638–39. *See also* Donna Roberts, *Preliminary Assessment of the Effects of the WTO Agreement on Sanitary and Phytosanitary Trade Regulations*, 1 J. INT'L ECON. L. 377, 391–92 (1998) (noting that in various reports pertaining to the hormone ban, the EC cited "restoration of consumer confidence in European beef as a goal," and the United States pointed to these documents as "evidence that EC officials chose to maintain the ban in response to perceived, rather than actual, risks").

11. Report of the Panel, EC Measures Concerning Meat and Meat Products (Hormones)—Complaint by Canada, WT/DS48/R/CAN (Aug. 18, 1997), 1997 WL 561677 (W.T.O.) [hereinafter Report of the Panel].

12. *Id.* para. 8.242.

13. *See id.* para. 8.108. Vern Walker notes, however, that the "justifying role of consumer perceptions or anxieties remains remarkably unclear in the Panel Report." Vern R. 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, 307 n.260 (1998) (citing Report of the Panel, *supra* note 11, paras. 8.181, 8.192, 8.216, 8.232–.241).

14. Carter, *supra* note 8, at 656.

15. *Id.* at 654.

16. James S. Freeman & Rachel D. Godsil, *The Question of Risk: Incorporating Community Perceptions into Environmental Risk Assessments*, 21 FORDHAM URB. L.J. 547, 576 (1994).

17. David A. Wirth, *International Trade Agreements: Vehicles for Regulatory Reform?*, 1997 U. CHI. LEGAL F. 331, 335.

governmental resources and authority are directed toward substantial risks as opposed to small or trivial ones."[18]

What is striking about the SPS Agreement, according to David Wirth, is that its requirements regarding risk assessments provide "an opportunity or a temptation to accomplish substantive goals similar to those in the domestic regulatory reform debate through international processes in the face of domestic obstacles to achieving those same aims at the national level."[19] David Driesen concludes that although "the WTO has not embraced laissez-faire government as an explicit goal, the WTO has taken a substantial step in that direction" by "creating burdens governments must meet in order to impose regulations."[20] This remarkable intrusion into the regulatory decisions of WTO members raises the question: "if . . . consumer anxieties could not be respected, or domestic politics could not be taken into account, what would remain of the sovereignty inherent in risk management decisions?"[21] The SPS Agreement, if applied aggressively, poses some risk of making the WTO into "a global meta-regulator."[22] Michael Trebilcock and Julie Soloway warn that if the WTO becomes "a global science court and potential *de novo* global health and safety regulator," it "would severely strain both its expertise and its legitimacy."[23] In this vein, Wirth criticizes the WTO panels in the hormones disputes for engaging in "a highly intrusive review . . . that would be well nigh unthinkable at the domestic level" and thus having a "potential chilling effect on legitimate domestic regulation."[24] Thus, the EU asserted that its "economic sovereignty" was at stake in the hormones dispute.[25]

Given this perceived challenge to its sovereignty, perhaps it is not surprising that the EU has so far refused to comply with the WTO ruling in

18. *Id.* at 337.

19. *Id.* at 334.

20. David M. Driesen, *What Is Free Trade?: The Real Issue Lurking Behind the Trade and Environment Debate*, 41 VA. J. INT'L L. 279, 300 (2001).

21. Walker, *supra* note 13, at 306–07.

22. *Id.* at 255. *See* Driesen, *supra* note 20, at 296 (worrying that "the recent SPS Agreement invites WTO panels to second-guess [a] national government's claims that the problem a regulation addresses warrants a regulatory remedy").

23. Trebilcock & Soloway, *supra* note 8, at 553. *See also id.* at 541 (warning that the WTO could "invalidate . . . national legislation that . . . reflects a legitimate value choice on the part of domestic consumers").

24. Wirth, *supra* note 17, at 343.

25. Timothy Aeppel, *Europeans Not Cowed by US Threat*, CHRISTIAN SCI. MONITOR, Jan. 10, 1989, World Section, at 6 (reporting claims of EU officials that any country "should have the right to ban imports based on health concerns, even if those concerns seem excessive to outsiders").

this dispute. The United States has retaliated by imposing tariffs worth $116.8 million per year on imports from the EU.[26] The EU may soon call upon the WTO to rule on this dispute again to remove the trade sanctions imposed by the United States.[27]

Furthermore, new disputes are likely to require the WTO to apply the risk assessment requirements of the SPS Agreement to other regulations in the near future.[28] The EU, for example, has imposed a de facto moratorium on foods derived from or containing genetically modified organisms ("GMOs"), blocking approval of even those GMOs judged safe by EU scientists.[29] This moratorium has blocked exports from the United States to the EU, including corn exports worth $300 million per year.[30] Concerned that other countries may emulate the EU policy on GMOs,[31] U.S. Trade Representative Robert Zoellick has indicated that the United States "has no other choice than to begin bringing the issue to a head in the WTO."[32] The United States has complained that the moratorium "is based on political considerations and not on sound science."[33] In particular, President George W. Bush has blamed "'unfounded, unscientific fears'" for the moratorium.[34] Thus, U.S. trade officials have threatened to challenge the moratorium as lacking the basis in "scientific evidence" required by the

26. *See* Daniel Pruzin, *EU Calls for New WTO Proceedings to Determine Beef-Hormone Compliance*, 20 Int'l Trade Rep. (BNA), No. 48, at 1988 (Dec. 4, 2003).

27. *See id.*

28. For example, proposed EU legislation would ban certain chemicals from cosmetics sold in the EU. *See* Pat Phibbs & Bengt Ljung, *Significant Effect on Cosmetics Makers Possible if EU Bans Chemicals as Proposed*, 19 Int'l Trade Rep. (BNA), No. 48, at 2084 (Dec. 5, 2002). This proposal has prompted an industry scientist to complain that "[i]t is not valid scientifically to ban something whether or not it has any risk." *Id.* (quoting Gerald McEwen, Vice President for Science at the Cosmetic, Toiletry, and Fragrance Association).

29. *See* Joe Kirwin, *New EU GMO Regulation Takes Effect, but De Facto Moratorium Seen Persisting*, 19 Int'l Trade Rep. (BNA), No. 42, at 1831 (Oct. 24, 2002).

30. *See* Neil King Jr., *Zoellick Slams EU for 'Immoral' View on Biotech Crops*, WALL ST. J., Jan. 10, 2003, at A8.

31. *See* Edward Alden, *US Ready to Declare GM Food War*, FIN. TIMES, Jan. 10, 2003, World News Section, at 10; Christopher S. Rugaber & Gary G. Yerkey, *Zoellick Favors Bringing WTO Case Against EU over GMO Biotech Moratorium*, 20 Int'l Trade Rep. (BNA), No. 3, at 100 (Jan. 16, 2003). Third-world countries may restrict the use of GMOs in order to protect their access to markets in the EU. *See* Christopher S. Rugaber, *Grassley, Six Additional Senators Urge Bush Administration to Begin WTO Case on GMOs*, 20 Int'l Trade Rep. (BNA), No. 1, at 21–22 (Jan. 2, 2003).

32. *See* Gary G. Yerkey, *U.S. Looking to Ask EU for Talks in WTO over Ban on Imports of GMO Food Products*, 19 Int'l Trade Rep. (BNA), No. 42, at 1829 (Oct. 24, 2002).

33. *Id.*

34. Gary G. Yerkey, *President Bush's High-Profile Criticism of EU over GMOs Seen Exacerbating Trade Dispute*, 20 Int'l Trade Rep. (BNA), No. 22, at 916 (May 29, 2003).

SPS Agreement.[35] Accordingly, the United States, joined by Canada and Argentina, has begun legal proceedings against the EU over its moratorium.[36]

This Article examines the hormones dispute as a vehicle for addressing not only Sunstein's debate between the technocrat and the populist but also the question of why the WTO should scrutinize the domestic risk regulations produced as the outcome of this debate within the political systems of sovereign WTO members.[37] First, the hormones dispute sheds new light on this old debate by underscoring concerns that interest groups may promote and exploit public fears for private gain. An appreciation of the role of interest groups suggests a new framework for evaluating policy responses to public fears unsupported by expert risk assessments. Second, the hormones dispute places this policy debate in the context of international trade and thereby allows me to use this framework to shed new light on the rules applied and developed by the WTO in its effort to resolve the dispute.

In Part II of this Article, I examine the countervailing considerations weighed by Sunstein in light of the example of the hormones dispute. Even fears based on erroneous assumptions impose a real welfare loss on those who experience those fears. Given these considerations, I question whether we may choose to ignore or to discount fears on the ground that they are "irrational" because they fail to reflect risk assessments, especially in the presence of uncertainty regarding the magnitude of the risks. In Part III of this Article, I suggest an alternative framework that takes the social costs of these fears seriously but also considers the fact that these fears may be generated endogenously. This approach suggests policy considerations that not only militate against responding to these fears with regulations but also militate in favor of particularly close scrutiny of regulatory responses that burden international trade. This analysis offers a rationale for the provisions of the SPS Agreement and for the Appellate Body's approach to the hormones dispute. In Part IV of this Article, I offer some concluding remarks.

35. Gary G. Yerkey & Bengt Ljung, *U.S. Sees 'Some Hope' of Settling Dispute with EU over GMOs Without Going to WTO*, 19 Int'l Trade Rep. (BNA), No. 46, at 2039 (Nov. 28, 2002).

36. Daniel Pruzin, *WTO Chief Appoints Panelists to Rule on EU GMO Restrictions*, 21 Int'l Trade Rep. (BNA), No. 11, at 428 (Mar. 11, 2004).

37. Steve Charnovitz criticizes the intervention of the WTO in cases like the hormones dispute. *See* Steve Charnovitz, *The World Trade Organization, Meat Hormones, and Food Safety*, 14 Int'l Trade Rep. (BNA), No. 41, at 1785 (Oct. 15, 1997) ("One would think the WTO would have enough irrational *trade* policies to attend to without having to meddle in irrational health policies.").

II. THE RATIONAL RESPONSE TO "IRRATIONAL" FEARS?

Sunstein asks whether it may be appropriate, at least in some circumstances, to respond to public fears through risk regulation even when those fears are not justified by a risk assessment.[38] After all, consumers may respond to their fears by avoiding activities, such as flying on airplanes or eating certain foods.[39] These distortions in consumption patterns would entail a real loss in social welfare. European consumers fearful of growth hormones, for example, might avoid eating beef, thereby forgoing the utility they would otherwise derive from beef consumption. A ban on beef produced by using these hormones may entail costs for these consumers—for example, in the form of higher prices flowing from higher production costs[40]—but these costs may be smaller than the costs that would result from consumer anxieties regarding the safety of beef and the distortions in consumption patterns flowing from those anxieties.

Indeed, when the European Parliament defended the EU ban on hormones, the debate stressed how beef sales in the EU had "suffered from consumer reaction to the issues of growth promoters."[41] According to the Appellate Body, the EU imposed its ban in the face of "intense concern of consumers . . . over the quality and drug-free character of the meat available in its internal market," seeking "an increase in the consumption of beef" that would benefit all "non-hormone using farmers."[42] Thus, the EU maintained its ban in part to protect "public confidence about beef."[43] According to EU officials, lifting the ban "would cause uncertainty among European consumers, who would likely lower their beef consumption."[44]

Even if that justification for a regulatory response seems legitimate, it would justify regulation only insofar as fear produces such distortions in behavior. What if there are no such distortions? In that case, we have nothing to fear but fear itself. Similarly, suppose instead there are such distortions, but we must decide whether to regulate only insofar as justified

38. *See* Sunstein, *Probability Neglect*, *supra* note 3, at 101–05.

39. *Id.* at 103.

40. *See* Janice Castro, *Why the Beef over Hormones?*, TIME, Jan. 16, 1989, at 44 (reporting that hormone treatments save ranchers "approximately $20 per head").

41. *EU Looks to Conference to Justify Continued Ban on Growth Hormones*, 12 Int'l Trade Rep. (BNA), No. 38, at 1627 (Sept. 27, 1995) (noting a report that "beef consumption in Germany alone has dropped by 15 per cent in the space of a year").

42. Report of the Appellate Body, *supra* note 5, para. 245.

43. RAJ BHALA, INTERNATIONAL TRADE LAW: THEORY AND PRACTICE 1677 (2d ed. 2001).

44. *EU Official Signals Continuation of Ban on Hormone-Treated Meat*, INSIDE U.S. TRADE, Dec. 8, 1995, at 8 (quoting EU Agricultural Commissioner Franz Fischler as stating that "[a]ll surveys show that European consumers don't want to buy hormone-treated meat").

by the benefit of avoiding these distortions. What if the distortions alone are too small to justify the regulation, but if we count the reduction in fear itself as a social benefit, then the total benefit would justify the regulation in question?

Sunstein suggests that the "reduction of even baseless fear is a social good."[45] After all, fear itself is a real social cost, generating a genuine willingness to pay to eliminate or reduce the risk that is feared.[46] Similarly, Robert Howse observes that "if citizens believe they need a certain regulation, however 'deluded' such a belief is, their utility will be reduced if they do not get it, in the sense that they will believe themselves exposed to a risk they believe to be significant."[47] He suggests that it may "make sense to 'attend'" to citizens' preferences, even if they "are *not* rational," because "the utility from a regulation comes not only from the reduced likelihood of an event that one disvalues, but also from the psychological security that results from one's belief about the protection one is receiving."[48] If so, then why not always respond to these fears with risk regulations, regardless of the findings of scientific risk assessments?

A. MISTAKES OF FACT

Sunstein emphasizes that ordinary people commonly "err on the factual question: how large is the risk as a statistical matter?"[49] There may be a good case for ignoring public fears that are based on false information regarding the risk.[50] Perhaps we should not credit preferences that are based on mistakes of fact, such that if those holding those preferences knew the truth, they would prefer that we not respond to their misinformed preferences, or if they were to discover the truth after we respond, they

45. Sunstein, *Probability Neglect*, *supra* note 3, at 104 (noting that "fear is a real social cost").

46. *See* Eric A. Posner, *Fear and the Regulatory Model of Counterterrorism*, 25 HARV. J.L. & PUB. POL'Y 681, 687 (2002) (noting that "the experience of fear is a hedonic loss, and people are willing to pay money in order to reduce their feelings of fear and anxiety"). This fear "raises the question of whether the government should devote resources to eliminating or reducing fear on the ground that it constitutes a welfare loss." *Id.* at 685.

47. Robert Howse, *Democracy, Science, and Free Trade: Risk Regulation on Trial at the World Trade Organization*, 98 MICH. L. REV. 2329, 2337 (2000).

48. *Id.* at 2350.

49. Sunstein, *Laws of Fear*, *supra* note 2, at 1150. *See id.* at 1152 (arguing that "in the domains in which they specialize, experts are far more likely to be right than are ordinary people"); *id.* at 1155 (suggesting "that many of the disagreements between experts and ordinary people stem from the fact that experts have more information").

50. *See* Howse, *supra* note 47, at 2330 ("There is more to democracy than visceral response to popular prejudice and alarm; democracy's promise is more likely to be fulfilled when citizens, or at least their representatives and agents, have comprehensive and accurate information about risks . . . .").

would regret that we had used scarce social resources on reducing this risk.[51] After all, the technocrat would point out that we could have saved more lives if we had used these resources on more significant risks. Perhaps "people are simply not focusing on the magnitude of the risk," and "if this factor were brought to their attention, their judgments would shift accordingly."[52]

Even if the government takes the social costs of these fears seriously, it may seek to inform and educate the public as a way to eliminate the fear. If we can reduce fear at a lower cost through education than through risk regulation, then an education campaign is our most efficient policy. In such cases, information should be our first choice as a response to fears based on erroneous assumptions. Thus, if a government agency determines that "public alarm . . . is based on a misperception of the risk, then the government agency should perform an educational function."[53]

Sunstein warns, however, that "government is unlikely to be successful if it simply emphasizes the low probability that the risk will occur."[54] He notes, for example, that efforts to assure people of the low probability of harm from the abandoned hazardous waste in Love Canal "seemed to aggravate fear."[55] Similarly, "public demand for action" against the pesticide Alar did not seem "much affected by the EPA's

51. John Harsanyi, for example, distinguishes between a person's "manifest preferences," which are "actual preferences as manifested by his observed behaviour, including preferences possibly based on erroneous factual beliefs, or on careless logical analysis, or on strong emotions that at the moment greatly hinder rational choice," and "true preferences," which are "the preferences he *would* have if he had all the relevant factual information, always reasoned with the greatest possible care, and were in a state of mind most conducive to rational choice." John C. Harsanyi, *Morality and the Theory of Rational Behaviour*, *in* UTILITARIANISM AND BEYOND 39, 55 (Amartya Sen & Bernard Williams eds., 1982). He argues that "social utility must be defined in terms of people's true preferences rather than in terms of their manifest preferences." *Id.* *See also* Howard F. Chang, *A Liberal Theory of Social Welfare: Fairness, Utility, and the Pareto Principle*, 110 YALE L.J. 173, 193, 206 n.153 (2000) (discussing Harsanyi's distinction between true and manifest preferences).

52. Sunstein, *Laws of Fear*, *supra* note 2, at 1155.

53. W. Kip Viscusi, *The Dangers of Unbounded Commitments to Regulate Risk*, *in* RISKS, COSTS, AND LIVES SAVED: GETTING BETTER RESULTS FROM REGULATION 135, 139 (Robert W. Hahn ed., 1996).

54. Sunstein, *Probability Neglect*, *supra* note 3, at 95.

55. *Id.* at 98–99. *See also* Andrew Caplin & John Leahy, *Psychological Expected Utility Theory and Anticipatory Feelings*, 116 Q.J. ECON. 55, 59 (2001) (noting that "not all individuals want or benefit from information" and that "information actually serves to raise anxiety in some cases"); Sunstein, *Laws of Fear*, *supra* note 2, at 1141 ("When people discuss a low-probability risk, their concern rises even if the discussion consists mostly of apparently trustworthy assurances that the likelihood of harm is infinitesimal.").

cautionary notes about the low probability of getting cancer" from it.[56] Stephen Breyer is similarly skeptical about the effectiveness of "better 'risk communications,' such as efforts to explain risks to the public at open meetings," which he suggests "may not suffice to alleviate risk regulation problems."[57] Thus, there may be little reason to believe that efforts to explain risks would be as effective in reducing fear as a regulatory response would be.

Thus, it may often be the case that we must resort to risk regulation as the only policy that will succeed in alleviating public anxieties. Sunstein suggests that "[i]f government cannot dissipate fear through information, it might be well advised to regulate, at least if regulation will eliminate fear in a relatively inexpensive manner."[58] This suggestion raises several questions: How expensive is too expensive to make the regulation worthwhile? How do we decide whether we must turn to risk regulation as our second-best response? In weighing the costs and benefits of a regulatory response, do we fully credit the willingness of people to pay to reduce fears that are based on mistakes of fact, or do we discount these fears because they are "irrational" in the eyes of experts?

B. UNCERTAINTY

One reason that risk communications may fail to alleviate public fears derives from the uncertainty regarding the magnitude of the risk that invariably remains in the wake of any risk assessment. The problems inherent in risk assessment in the face of scientific uncertainty make it difficult to characterize public fears as "irrational" or as based on mistakes of fact. Suppose the risks are uncertain rather than known with certainty to be small.[59] Should we then ignore public fears that seem "irrational" to the technocrat?

56. Sunstein, *Probability Neglect*, *supra* note 3, at 99. *See also* Posner, *supra* note 46, at 686 (noting that "fear and misinformation are not the same thing" and that "[f]earful people with the correct information still act as though the probability of the dreaded risk is higher than it is").

57. BREYER, *supra* note 1, at 38.

58. Sunstein, *Laws of Fear*, *supra* note 2, at 1168.

59. *See* Trebilcock & Soloway, *supra* note 8, at 565 ("For many actual or potential health and safety risks, scientific disagreement or uncertainty will be such that it is simply impossible to assign a point estimate to the probability . . . of the risk materializing . . . ."). Here I allude to Frank Knight's distinction between quantifiable "risk" and "uncertainty," which we cannot measure. FRANK H. KNIGHT, RISK, UNCERTAINTY, AND PROFIT 233 (photo. reprint 1985) (1921). More precisely, I mean to distinguish cases in which the data provide the technocrat with an objective basis for a "frequentist" measure of probability, *see* Matthew D. Adler, *Risk, Death, and Harm: The Normative Foundations of Risk Regulation*, 87 MINN. L. REV. 1293, 1313 (2003), from cases in which we have only a "Bayesian" subjective probability or "degree of belief," *see id.* at 1312.

Consider the risks at issue in the hormones dispute. Although the EU could point to studies showing the carcinogenic potential of growth hormones[60] and to the opinion expressed by one scientist,[61] the Appellate Body ruled against the EU because the studies cited by it did not assess the risks posed by consuming meat "when [hormones were] used specifically *for growth promotion purposes*."[62] The only available assessments of these specific risks showed that the hormones studied were "'safe'" when used properly.[63] In refusing to lift the hormone ban, EU officials stressed the risk that beef producers would not apply hormones under the conditions prescribed for safe use.[64] Nevertheless, the Appellate Body ruled against the EU despite the absence of any risk assessment regarding the safety of one of the hormones in dispute[65] and despite the absence of any assessment of the "risks arising from failure to observe the requirements of good veterinary practice . . . in the administration of hormones to cattle for growth promotion."[66]

If there have been no assessments regarding these risks, then how do EU consumers know whether beef treated with these hormones is safe? How does one know the magnitude of the health risk under those circumstances? As Jagdish Bhagwati observes, risk regulations do not "always reflect compelling scientific evidence," and instead it is often the case that "confirming evidence trails the concern."[67]

Suppose consumers are aware of the available risk assessments, which show that hormones are safe when used properly, but consumers experience anxiety despite knowing of these risk assessments.[68] Efforts to

60. Report of the Appellate Body, *supra* note 5, para. 199.

61. *Id.* para. 198 & n.181 (discussing one scientist's estimate that one in a million women alive today would get breast cancer from eating meat treated with growth hormones, a "single divergent" scientific opinion that was insufficient to overturn "the contrary conclusions reached in the scientific studies . . . that related specifically to residues of the hormones in meat from cattle to which hormones had been administered for growth promotion").

62. *Id.* para. 199.

63. *Id.* para. 196 (quoting Report of the Panel, EC Measures Concerning Meat and Meat Products (Hormones)—Complaint by the United States, WT/DS26/R/USA, para. 8.124 (Aug. 18, 1997), 1997 WL 569984 (W.T.O.)).

64. *EU Official Signals Continuation of Ban on Hormone-Treated Meat*, *supra* note 44, at 8 (reporting the concern of one EU official who stressed that "there is no way to ensure that those specific conditions will always be met").

65. Report of the Appellate Body, *supra* note 5, para. 201.

66. *Id.* para. 202. *See also id.* para. 208 (noting the absence of such a risk assessment).

67. Jagdish N. Bhagwati, *Hormones and Trade Wars*, N.Y. TIMES, Jan. 9, 1989, at A17 (arguing that "[t]he Europeans are fully within their rights . . . to ban consumption of hormone-fed beef").

68. *See* Roberts, *supra* note 10, at 403 (suggesting that "in view of intermittent media reports about 'hormone scandals' over the past twenty years, many European consumers may prefer to consume hormone-free beef no matter what scientific evaluations conclude"). Consumers might

educate the public may eliminate fear insofar as it is based on misinformation but may also leave a residue of fear that is not.[69] Under these circumstances, the public may demand regulations that respond to these residual fears.[70] To the extent that the fears to which we respond with risk regulation are well informed, this regulation avoids one possible objection to responding to such fears.[71]

What if EU consumers who experience these fears actually *understand* the available scientific evidence but are worried about the risks that have *not* been studied, such as the risk of the *abuse* of hormones? In fact, it was "*this* kind of risk that played an important role in the public outcry that had led to the EC ban in the first place."[72] The EU defended its ban by stressing "the need for strict adherence with veterinary practices in order to ensure safe usage of growth hormones."[73] Indeed, the Appellate Body conceded that the EU adopted its ban on the use of hormones because of "anxieties" concerning not only "the results of the general scientific studies (showing the carcinogenicity of hormones)" but also "the dangers of abuse (highlighted by scandals relating to black-marketing and smuggling of prohibited veterinary drugs . . .) of hormones and other substances used for growth promotion."[74]

The EU also stressed scientific uncertainty and "its longstanding policy of precaution," citing examples of substances that were once deemed safe but later found to pose grave health risks.[75] Under the "'precautionary

declare, as one EU official put it, "'we simply don't want to consume these products,'" insisting that "'there should only be hormone-free meat on the market.'" *EU Looks to Conference to Justify Continued Ban on Growth Hormones*, *supra* note 41, at 1627 (quoting EU Agriculture Commissioner Franz Fischler).

69. *See* Posner, *supra* note 46, at 693 ("If the facts do not offer grounds for reassurance, or the public understands the threat as well as officials do, official reassurance might not be possible.").

70. *See* Howse, *supra* note 47, at 2337 ("[E]ven if a deliberative process occurs where the requisite elements of democratic rationality are present, citizens may not change their views; once it is known that a risk is negligible . . . citizens may still want a regulation to be enacted or maintained.").

71. *See id.* at 2330. Howse contends that

> democracy . . . requires respect for popular choices, even if different from those that would be made in an ideal deliberative environment by scientists and technocrats, *if* the choices have been made in awareness of the facts, and the manner that they will impact on those legitimately concerned has been explicitly considered.

Id. *See also* Sunstein, *Laws of Fear*, *supra* note 2, at 1156 (calling for "more empirical work to determine the extent to which ordinary risk perceptions are based on errors or instead on values" and for "incorporation of people's values [in risk regulation] to the extent that they can survive a process of reflection"); *id.* at 1168 (suggesting that "government and law should respond to people's values, not to their errors").

72. Howse, *supra* note 47, at 2344.

73. Carter, *supra* note 8, at 642.

74. Report of the Appellate Body, *supra* note 5, para. 245.

75. Carter, *supra* note 8, at 641.

principle,'" the EU is inclined "to err on the side of environmental and health protection . . . whenever the context is characterized by uncertain scientific conditions."[76] Should the precautionary principle allow the EU to justify its hormone ban in the absence of risk assessments to support this regulatory response?[77] Although the Appellate Body agreed that "responsible, representative governments commonly act from perspectives of prudence and precaution where risks of irreversible, e.g. life-terminating, damage to human health are concerned,"[78] it held that the "precautionary principle" did not "override" the requirement of specific risk assessments found in Article 5 of the SPS Agreement.[79] The hormones dispute raises the question: Why should we deem regulations under such conditions of uncertainty to be irrational?

C. IRRATIONALITY OR A RIVAL RATIONALITY?

Perhaps we should regard these risks flowing from the use of hormones as small, given the available evidence. There may be some possibility that existing risk assessments are in error, that the technocrats are wrong in the conclusions they draw from them, or that we have failed to study some important risk. Suppose past experience suggests that these errors or lapses are unlikely to be significant. Are we justified in ignoring public fears that seem excessive from this perspective?

Sunstein notes that even if "people are greatly concerned about a risk that has a small or even minuscule probability of occurring," it may be rational to respond to that concern.[80] "If I am afraid to fly," he observes, "I might decline to do so, on the ground that my fear will make the experience quite dreadful (not only while flying but also in anticipating it)."[81] Like the traveler who knows the statistics regarding the safety of air travel, yet experiences fear while flying in spite of this knowledge and therefore

76. *Id.* at 643.

77. *See* Charnovitz, *supra* note 37, at 1783 (inferring from the WTO panel report in the hormones dispute that the EU "asserted that the precautionary principle could provide a justification within the WTO for regulation in the absence of a risk assessment").

78. Report of the Appellate Body, *supra* note 5, para. 124.

79. *Id.* para. 125. The SPS Agreement expresses a version of the precautionary principle by providing that "[i]n cases where relevant scientific evidence is insufficient, a Member may provisionally adopt sanitary or phytosanitary measures on the basis of available pertinent information," but it also requires that "[i]n such circumstances, Members shall seek to obtain the additional information necessary for a more objective assessment of risk and review the . . . measure accordingly within a reasonable period of time." SPS Agreement, *supra* note 6, art. 5.7.

80. Sunstein, *Probability Neglect*, *supra* note 3, at 103.

81. *Id. See also* Eric A. Posner, *Law and the Emotions*, 89 GEO. L.J. 1977, 2004 (2001) (suggesting that "people's subjective discomfort with airline travel should be counted as a social cost").

chooses not to fly, the public may demand a ban on the use of growth hormones to reduce fear itself, knowing that the beef that is banned may pose little if any risk. Resources may yield more lives saved when used to reduce other risks, but they may yield a greater reduction in *fear* if used to reduce this risk. If fear is a social cost, like death or illness or injury, then fear reduction is also a social benefit worth pursuing.

On the other hand, to the extent that technocrats are confident that they know "the facts" and that "people are far more concerned than the facts warrant," we might deem these public fears "irrational."[82] Sunstein considers the failure "to think much about the question of probability" to be a form of "irrationality, not a rival rationality."[83] He seems ambivalent regarding the appropriate response to this "probability neglect," which causes people to "overreact from the normative standpoint."[84] In order to prevent regulation based on such irrational probability neglect, he suggests a requirement of cost-benefit balancing as an institutional safeguard that may usefully focus risk regulation on the most significant risks and "provide a check on regulations that cannot be grounded in objective fact."[85]

In what sense, however, is a reaction reflecting probability neglect an overreaction? Experiments indicate that under some circumstances people experience anxiety in the presence of any risk, large or small, some anxiety that is fixed in amount, rather than directly proportional to the risk, or some anxiety that is a function of variables other than probability of harm. Psychologists, for example, have studied physiological measures of stress, such as heart rate in people subjected to various risks of electric shock, and found no correlation between the probability of shock and these indicators of anxiety.[86] Another study found that the amount that people were willing to pay to avoid an electric shock rose by only a moderate amount when the probability of that shock rose dramatically from one percent to ninety-nine percent.[87] These results suggest a model in which "anxiety is an

82. Sunstein, *Probability Neglect*, *supra* note 3, at 103.

83. *Id.* at 84.

84. *Id. See also* Sunstein, *Laws of Fear*, *supra* note 2, at 1123 (arguing that "ordinary people often deal poorly with the topic of risk" because "people often neglect probabilities").

85. Sunstein, *Probability Neglect*, *supra* note 3, at 96.

86. *See* C. Peter Bankart & Rogers Elliott, *Heart Rate and Skin Conductance in Anticipation of Shocks with Varying Probability of Occurrence*, 11 PSYCHOPHYSIOLOGY 160, 172 (1974); Alan Monat, James R. Averill & Richard S. Lazarus, *Anticipatory Stress and Coping Reactions Under Various Conditions of Uncertainty*, 24 J. PERSONALITY & SOC. PSYCHOL. 237, 252 (1972).

87. *See* Yuval Rottenstreich & Christopher K. Hsee, *Money, Kisses, and Electric Shocks: On the Affective Psychology of Risk*, 12 PSYCHOL. SCI. 185, 188 (2001) (finding a willingness to pay a median price of $7 to avoid a 1% chance of shock and a median price of $10 to avoid a 99% chance of a shock).

anticipatory emotion experienced prior to the resolution of uncertainty," imposing some "psychic costs" that are independent of the probability of harm as long as this probability is positive.[88] In such a model, people may "appear to overreact to small probability events," because even an increase in risk "from zero to some small positive number . . . may have a large effect" on anxiety.[89] This response, however, is an overreaction only if we overlook the fact that people wish to avoid anxiety, which imposes "an extra cost" on them while they anticipate a possible harm.[90]

In what sense is this anxiety irrational at all, especially given some inevitable uncertainty regarding the magnitude of the risks in dispute?[91] Why is the preference for avoiding beef treated with hormones not entitled to the same respect as any other preference, like a consumer's preference for beef over pork? Neither preference serves a useful function; they are simply desires. Economists normally take people's preferences as revealed by their choices and take the satisfaction of these preferences to be the objective.[92] In what sense are fears that are not justified by risk assessments any less entitled to respect? Who says that fears must be based on risk assessments in order to be rational? Why do we think these fears should be distinguished from other tastes or preferences to which a regulator should respond?[93]

Sunstein cites this experiment as a case in which a salient "worst case" is "driving judgment" and "undermining the mental operation of assessing probability." Sunstein, *Laws of Fear*, *supra* note 2, at 1139. Yet there seems to be no confusion regarding the factual question of the statistical probability of electric shock, as the subjects in this experiment are informed of this probability. *See* Rottenstreich & Hsee, *supra*, at 188.

88. Caplin & Leahy, *supra* note 55, at 69.

89. *Id.* at 70.

90. *Id.* at 56.

91. *See* Howse, *supra* note 47, at 2342 (arguing that "science cannot tell us just how conservative or protective it is reasonable to be in the presence of a given level of error or uncertainty in a scientific assessment of risk" and that "[w]hether it is rational for a government to take precautions in the presence of a given degree or kind of uncertainty in the scientific evidence will ultimately depend upon democratic judgments about the 'appropriate level' of protection").

92. *See, e.g.*, W. Michael Hanemann, *Valuing the Environment Through Contingent Valuation*, J. ECON. PERSP., Fall 1994, at 19, 33 (noting the usual assumption in economics that "decisions about what people value should be left up to them").

93. *See* Howse, *supra* note 47, at 2335 (suggesting a "version of deliberative democracy" that "would respect citizens' *real* choices, even where these seem irrational as measured against what citizens might be expected to decide in a perfectly rational deliberative process, while . . . seeking to make the process as perfectly deliberative as possible").

III. ENDOGENOUS FEARS

Perhaps we are troubled by the fact that these fears are generated artificially by publicity rather than derived from some objective source. Sunstein warns that "a highly publicized incident might exacerbate unwarranted or irrational fears."[94] He stresses that "news sources can do a great deal to trigger fear," simply by reporting salient examples of bad outcomes.[95] Yet these fears are no less real and no less rational than other tastes and preferences shaped by the media through advertising, for example.

Nevertheless, an approach that attends to the dynamics that generate and sustain public fears may be more useful than one that dismisses some of these fears as "irrational." The fact that fears are not simply exogenous but created endogenously may have some important normative implications for risk regulation. Even if we consider the reduction of these fears to be a social benefit, whether or not a technocrat would consider them rational, the endogenous nature of these fears may suggest sound reasons to avoid risk regulations based on these fears.

A. IMPLICATIONS FOR PUBLIC POLICY

First, perhaps fears fed by the media yet deemed by technocrats to be baseless are likely to prove fleeting or transient.[96] Such fear may be likely to subside with time and more experience with the feared product.[97] This

94. Sunstein, *Laws of Fear*, *supra* note 2, at 1131 (noting that "[t]he flow of information, especially via the media, can be extremely important not only in spreading facts but also in shaping perceptions"). *See also* Trebilcock & Soloway, *supra* note 8, at 546 (noting that distortions in public perceptions of risk "are often exacerbated by sensationalist media reporting of actual or potential risks").

95. Sunstein, *Probability Neglect*, *supra* note 3, at 85. *See also* Cass R. Sunstein, *Endogenous Preferences, Environmental Law*, 22 J. LEGAL STUD. 217, 242 (1993) [hereinafter Sunstein, *Endogenous Preferences*] (noting that the "public demand for regulation" seems to be "itself endogenous to the nature and levels of public and private publicity"); Sunstein, *Laws of Fear*, *supra* note 2, at 1127 (noting that "highly publicized events make people fearful of statistically small risks").

96. *See* Carter, *supra* note 8, at 652 n.192 (warning of the "fluctuating moods" of "very fickle consumers" concerned about beef). One British butcher described the "volatile public mood" in the wake of the panic regarding bovine spongiform encephalopathy ("BSE"), or "mad cow disease": "'Two weeks ago, all you ever heard was . . . how American beef was bad because it is loaded with growth hormones . . . . Then the papers are full of BSE . . . . Do you think anybody gives a damn about growth hormones now?'" Bruce Wallace, *Panic on the Hoof: Fears of 'Mad Cow Disease' Lead to a Worldwide Ban on British Beef*, MACLEAN'S, Apr. 8, 1996, World Section, at 26, 28.

97. *See* Posner, *supra* note 46, at 688 ("Fear of a risk appears often to diminish with time and continued exposure to the risk."); *id.* at 693 ("When people spend a lot of time exposed to a risk, they put it out of their mind.").

feature of these fears suggests that the lowest-cost response may be to "[c]hange the subject," or to "discuss something else and to let time do the rest," or perhaps to do nothing and simply wait for the fear to pass.[98] To the extent that these fears are temporary, the social cost of failing to respond to them is correspondingly limited.

Second, given that to create fear is to create a social cost and induce regulation in response, both the media and the government should refrain from encouraging fears where the risks are small and thus risk regulation would do the least good. The government "has an obligation to foster responsible behavior with respect to exaggerated risks"; therefore, "in the presence of alarmist responses to risk, the government should not institutionalize those behavioral errors."[99] In particular, governments should "not rush to regulate inconsequential risks that the public incorrectly believes are important."[100] We should avoid these risk regulations in part because they lend credibility to groundless fears.[101] It would be myopic for the government to respond to public fears and the welfare losses that they entail without taking into account the legitimacy that a regulatory response would confer upon those fears. This effect would make it all the more difficult to dispel these fears and thus eliminate the welfare losses that induced the government to adopt costly regulations in the first place. Risk regulations that sustain fears unjustified by risk assessments will needlessly foster demands that the regulations remain in place, especially if these regulations prevent consumers from gaining any experience with the supposedly risky product.[102]

98. Sunstein, *Probability Neglect*, *supra* note 3, at 95. *See also* Posner, *supra* note 46, at 688 (arguing that "regulation might be justified in the short term by fear, but not in the long term in light of people's capacity to adjust"); *id.* at 693–94 (suggesting that "the best policy will sometimes be to do nothing, and wait for people to adjust" and that "we would prefer officials to resist political pressure and do nothing until the fear diminishes on its own").

99. Viscusi, *supra* note 53, at 139.

100. *Id.*

101. *See* BREYER, *supra* note 1, at 51 (noting that "public pressure . . . may encourage Congress to enact standards," but "Congressional reaction provokes further public concern," creating a vicious circle). *See also* Posner, *supra* note 46, at 689 (suggesting that "governments aggravate the risks of panic by taking visible or unusual steps to combat the underlying risks of harm"). Sunstein notes that "[w]hen preferences are a function of legal rules, the rules cannot be justified by reference to the preferences." Sunstein, *Endogenous Preferences*, *supra* note 95, at 235. In such cases, "it may therefore be important to make some choice about the sorts of preferences that ought to be encouraged, rather than to act as if preferences can be kept constant." *Id.*

102. The discriminatory taxation discussed in the Report of the Panel, Japan—Customs Duties, Taxes and Labelling Practices on Imported Wines and Alcoholic Beverages, Nov. 10, 1987, GATT B.I.S.D. (34th Supp.) at 83 (1988), raised an analogous problem. In that case, Japan imposed lower taxes on shochu, a traditional Japanese liquor, than it imposed on similar imported liquors, and the EU brought a complaint alleging discrimination among "like" products. *See id.* paras. 2.1–3.1, at 85–88.

Had the government never imposed the regulations in the first place, consumer anxiety may have already dissipated and would no longer provide any demand for regulation. In weighing the costs that risk regulations would impose over the long term against the costs imposed by the public fears that such regulations would address, both the transient nature of those fears and the tendency for regulations to reinforce public fears militate against a regulatory response. These two considerations together suggest that the most efficient response to these fears, in some cases, may be to refrain from risk regulation despite the costs imposed by public fears.

Third, there is the danger that fearmongers will manipulate public policy by generating or maintaining public fear. Special interests might create fear in order to generate risk regulation that serves their own private interests, rather than the public interest in reducing the most important risks. Those who experience some fear may seek to instill the same fear in others, because if more people share their fear, then they can bring about risk regulation that responds to this fear. Business interests might promote fear in order to generate regulations that ban the products of competitors or otherwise put the competition at a disadvantage. Any lobbying effort entails social costs insofar as special interests invest scarce resources in such risk-seeking behavior. Investments in public fear, however, entail an additional cost imposed on the public in the form of fear, an external cost not internalized by those special interests.

Insofar as fear imposes welfare losses, the creation of fear is socially costly. Perhaps there is some value to legal rules (such as risk assessment requirements) or institutions that commit governments not to respond to fears that the technocrat would deem "irrational," if this commitment discourages those who would generate these fears to obtain the risk regulation that they favor. Even if governments thereby fail to respond to genuine public fear, we may derive an offsetting benefit by discouraging the promotion of those fears least supported by the scientific evidence. That is, even in cases in which it might be efficient ex post to regulate, because the social costs of these fears exceed the social costs of regulation,

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The panel addressing the complaint ruled in favor of the EC, explaining that "'like' products do not become 'unlike' merely because of differences in local consumer traditions . . . , which were often influenced by external government measures (e.g. customs duties)." *Id.* para. 5.9(b). Otherwise, "discriminatory or protective internal taxation of imported products would distort price competition . . . by creating different price and consumer categories and hardening consumer preferences for traditional home products." *Id.* To permit a government to justify its discriminatory treatment of products based on consumer preferences that are themselves in part the result of that discriminatory treatment would allow policies that crystallize consumer preferences in favor of domestic producers.

the ex ante benefit of reducing incentives to promote these fears may tip the balance in favor of ignoring these fears instead.

Deciding whether regulation would minimize social costs would entail a complex calculation of all these costs and benefits. If a regulator could gather and process all the necessary information at no cost, then it would be ideal for the regulator to perform the appropriate calculation on a case-by-case basis, tailoring its response to all the relevant circumstances in each specific context. If we could measure the magnitudes of all the effects of regulation, not only ex post but also ex ante, without cost or error, then we could make each decision based on the net benefit of regulation in each case.

Regulation would produce some benefit ex post by reducing the level of public fear and possibly by reducing some genuine risks to public health. Regulation, however, would also impose costs ex post on the entities regulated, costs that firms may pass on to consumers in the form of higher prices. Furthermore, insofar as regulation would lend legitimacy to public fears, it would extend the lives of these fears and thereby increase the costs that they impose on the public ex post, not only directly but also indirectly through the distortions in behavior and costly regulations that these fears induce. Finally, a decision to regulate based on those ex post effects would also create an incentive for those special interests that benefit from regulation to promote public fears ex ante so as to generate enough fear to trigger regulation. Increased public fears would in turn increase social costs not only directly but also indirectly by increasing distortions in behavior and both the frequency and stringency of regulations ex post. Thus, although increased public fears would appear to increase the benefits of regulation ex post, we would ideally take into account the incentives created by the prospect of regulation itself and ignore the public fears created by special interests with this prospect in mind. Insofar as these fears are generated endogenously, then the benefits of regulation would be smaller than they appear ex post, once we understand that a commitment not to regulate in these cases would imply less fear generated ex ante in such cases.

Conversely, a decision not to regulate would avoid all of these ex post and ex ante costs but also forgo the ex post benefits of regulation. The decision whether to regulate in each case would depend on the size of all of these various effects. We should regulate if the benefits of regulation ex post in terms of reductions in both risk and fear would outweigh the costs of regulation. Some of these regulatory costs would be present ex post even if public fears were purely exogenous. Regulations also impose costs,

however, because a refusal to regulate would ultimately reduce public fears in the future. This reduction would occur ex post because public fears would be less durable in the absence of regulation, bringing an earlier end to the social costs imposed ex post by those fears. Further reductions in fear would also occur because special interests would generate less fear ex ante in similar cases in the future.

In the real world, however, not all relevant information will be available at low cost. The task for the government becomes even more complex once we recognize that this information may be costly or impossible to gather. In reality, we can perform our welfare analysis only imperfectly and must bear some risk of error in calculating the net benefits of regulation in any given case. Given the uncertainty regarding the magnitudes of the various effects of regulation, we may use simpler rules of thumb to guide the regulator. We may rely on imperfect proxies for the variables that we would ideally observe perfectly. These proxies would be signals of the values of those variables but would be less costly to observe than those ideal variables. Use of simple proxies may also make it easier to predict the outcome of the analysis, which, on the other hand, would be only imperfectly correlated with the outcome that would flow from the ideal cost-benefit analysis. Given these considerations, which circumstances should raise a presumption against regulation?

The decision to regulate would depend, for example, on whether the prospect of risk regulation is significant as an incentive for the promotion of public fears. The greater the incentive created ex ante by this prospect, the more reluctant the regulator should be to regulate on the basis of net benefits ex post. Insofar as special interests can disguise endogenously generated fears as exogenous, however, they can confuse regulators into regulating in response to endogenous fears; thus, special interests would still have an incentive to generate public fears ex ante. Under these circumstances, a regulator should consider the incremental effect that its decision would have on this incentive by reducing the probability that endogenous fears will trigger regulation. A regulator should also recognize that a commitment not to regulate is more likely to be worthwhile ex ante when the expected cost of this commitment is small, that is, when regulation is least likely to be efficient ex post.

In light of these considerations, the requirement of a risk assessment can provide a reasonable proxy for circumstances justifying regulation. If a risk assessment provides evidence of a threat to public health, then it suggests that the ex post benefits of regulation are significant, both because regulation protects public health and because public fears are based on

exogenous scientific evidence. This evidence suggests that these fears will persist rather than erode with time and experience, which also militates in favor of regulation. Thus, regulations supported by risk assessments are likely to be efficient ex post, even in the absence of endogenously generated fears. Insofar as special interests promote public fears in the hopes of inducing risk regulation, a requirement of scientific evidence directs their efforts toward those regulations that would be most likely to be efficient anyway based on exogenous factors.

Although scientific evidence may imply a strong case in favor of regulation, it does not follow that the absence of such evidence would imply a strong case against regulation. A decision against regulation might require further indications. If a risk assessment indicates the absence of a threat to public health, for example, then the case against regulation is stronger than a case in which there simply has been no risk assessment. These observations bring us to the next question: Under what circumstances should the absence of scientific evidence raise a presumption against regulation?

B. PUBLIC CHOICE AND PROTECTIONISM

While a regulator seeking to maximize national welfare would compare the costs and benefits of risk regulation, the SPS Agreement gives the WTO the role of reviewing national regulations allegedly unjustified by health or safety concerns. That is, the SPS Agreement reflects an assumption that we cannot always trust national regulators to adopt regulations that produce benefits sufficient to justify the costs that the regulations impose. In particular, the danger of inefficient risk regulations may be especially acute when domestic producers or other special interests promote fear of imported products and lobby for regulations that respond to those fears.

We can generally count on firms that are burdened by risk regulation to exert political pressure opposed to that regulation. Normally, this pressure may be effective in preventing the most costly or the least justified regulations. Indeed, standard "public choice" considerations may lead us to expect industry lobbyists generally to be *too* successful in blocking regulations that protect the interests of a large and diffuse group, like those who benefit from environmental protection.[103] The costs of these regulations may be concentrated on particular industries, so that individual

103. *See* Howard F. Chang, *An Economic Analysis of Trade Measures to Protect the Global Environment*, 83 GEO. L.J. 2131, 2205–06 (1995).

firms in these sectors may have much to gain by blocking the regulations. Even if the benefits of regulation exceed the costs, these benefits may be spread among so many individuals that few find their interests at stake sufficient to justify much lobbying effort. As a result, we often expect government officials to be more responsive to producer interests than environmental interests. We may not normally expect environmentalists to lobby successfully for regulation unless the benefits of regulation are considerable. Therefore, as a general matter, we may not consider a lack of supporting scientific evidence to be sufficient by itself to render regulations particularly suspect.

When the competitors that are disadvantaged by risk regulation are foreign, however, their political influence with the government of the importing country may be limited. Therefore, there may be good reasons to be especially concerned with the use of risk regulations that burden international trade. Defects in the political process may make inefficient risk regulation especially likely when the producers who would usually be the most vocal opponents of regulation are foreign.[104]

Jonathan Wiener and John Graham note that "[o]ne prominent source of narrow decision-making is what one might call 'omitted voice': the absence of affected parties from the decision process and the concomitant disproportionate influence of organized interests."[105] Therefore, Howse suggests, "the wider the range of voices that have a say in the regulatory process, the more likely certain kinds of errors and misunderstandings concerning risk will be avoided."[106] The danger of these errors is acute when risk regulations place foreign producers at a disadvantage.[107] Thus,

104. Thus, "local producer interests wielding excessive power in the political process" allow local producers "to exploit disorganized consumer interests" through protectionist legislation. Donald H. Regan, *Judicial Review of Member-State Regulation of Trade Within a Federal or Quasi-Federal System: Protectionism and Balancing*, Da Capo, 99 MICH. L. REV. 1853, 1861 (2001). We might hope that foreign producers can act as proxies for those consumer interests that are jeopardized by protectionist regulations, but it is precisely the fact that those proxies are "foreign and unrepresented that invites exploitation of consumers by local producers." *Id.* at 1878 n.37.

105. Jonathan Baert Wiener & John D. Graham, *Resolving Risk Tradeoffs*, *in* RISK VERSUS RISK: TRADEOFFS IN PROTECTING HEALTH AND THE ENVIRONMENT 226, 230 (John D. Graham & Jonathan Baert Wiener eds., 1995) (noting that a "decisionmaker is unlikely to take account of countervailing losses imposed on constituencies who are not participating in the dialogue").

106. Howse, *supra* note 47, at 2356.

107. Howse points to Article 5.4 of the SPS Agreement, which states that WTO members "'should, when determining the appropriate level of sanitary or phytosanitary protection, take into account the object of minimizing negative trade effects.'" *Id.* (quoting SPS Agreement, *supra* note 6, art. 5.4). He interprets this obligation to mean that "regulators must attend to the voices of those affected by the negative trade impacts of regulation, not simply shut them out of the process of determining the level of protection." *Id.*

"especially with respect to trade regulations, 'democratic' outcomes typically reflect capture of the regulatory process by concentrated interests," so that "hand-tying of the political process by international rules, or by an apolitical authority such as 'science,' actually may enhance domestic welfare."[108] Thus, commentators often describe the risk assessment requirement of Article 5.1 of the SPS Agreement as a device to prevent domestic industries from generating risk regulation that serves as a disguised form of protectionism.[109]

In fact, the United States argued in the hormones dispute that the EU ban reflected "a desire to protect the . . . domestic cattle industry" rather than "legitimate health concerns."[110] The United States claimed that the EU ban was "a disguised restriction on international trade" in violation of Article 2.3 of the SPS Agreement.[111] The complainants in the hormones dispute also claimed that inconsistencies in the EC's regulation of hormones in different contexts violated Article 5.5 of the SPS Agreement, which prohibits "arbitrary or unjustifiable distinctions" in the levels of protection against risk "in different situations, if such distinctions result in discrimination or a disguised restriction on international trade."[112]

108. *Id.* at 2333. *See also* Ryan David Thomas, Note, *Where's the Beef? Mad Cows and the Blight of the SPS Agreement*, 32 VAND. J. TRANSNAT'L L. 487, 491 (1999) (arguing that "a country should be limited in the range of discretion it has" in health regulations "to protect the interests of those foreign . . . peoples to whom the state owes no political accountability").

109. *See, e.g.*, Wirth, *supra* note 17, at 333–34 (describing "the tests of scientific validity found in recent international trade agreements" as "intended . . . to limit the abuse of putatively scientific claims for protectionist purposes"); Carter, *supra* note 8, at 656 (describing the requirement of "scientific analysis" as designed "to ensure that restrictions on trade are not disguised as health regulations"); Thomas, *supra* note 108, at 489 (describing the risk assessment requirement as designed "to ensure that bona fide health regulations are passed, not 'protectionist' devices under the pretext of 'public health'"). The Clinton administration described the SPS Agreement in similar terms before Congress. *See Implementation of the Uruguay Round as It Affects United States Agriculture: Hearing Before the Senate Comm. on Agric., Nutrition and Forestry*, 103d Cong. 22 (1994) (statement of Mike Espy, U.S. Secretary of Agric.) (predicting that the SPS Agreement "will discourage countries from using unjustified health-related measures as disguised barriers to trade"); *id.* at 69 (statement of Michael Kantor, U.S. Trade Rep.) (stating that the SPS Agreement "provides safeguards against blatant trade protectionism in the guise of a health regulation").

110. Carter, *supra* note 8, at 637. *See also* Aeppel, *supra* note 25, at 6 (reporting U.S. claims that "the Europeans are trying to put up an unfair trade barrier" and that "standards—even those attributed to health concerns—could be used to block imported goods"); *Senators Urge Interim Curbs on Beef Imports from EC in Response to EC Ban on Hormone Use*, 5 Int'l Trade Rep. (BNA), No. 43, at 1447 (Nov. 2, 1988) (quoting a letter written by U.S. senators urging retaliation against the EU and charging that the hormone ban was "'an obvious trade barrier hiding behind the veil of "food safety"'").

111. Carter, *supra* note 8, at 639. *See also* SPS Agreement, *supra* note 6, art. 2.3 ("Sanitary and phytosanitary measures shall not be applied in a manner which would constitute a disguised restriction on international trade.").

112. SPS Agreement, *supra* note 6, art. 5.5 ("With the objective of achieving consistency in . . . the concept of appropriate level of . . . protection against risks . . . , each Member shall avoid arbitrary

C. BEYOND THE SHAM PRINCIPLE

While ruling that the EU ban on hormones violated the risk assessment requirement in Article 5.1 of the SPS Agreement, the Appellate Body also explicitly rejected claims that the EU ban represented "'a disguised restriction on international trade,'" reversing the panel below, which had found the EU to be in violation of Article 5.5.[113] The Appellate Body cited the "documentation that preceded or accompanied the enactment of the prohibition of the use of hormones for growth promotion," which "makes clear the depth and extent of the anxieties" and "the intense concern of consumers" regarding "the quality and drug-free character of the meat available in [their] internal market."[114] The Appellate Body rejected the inference drawn by the panel that the hormone ban was "not really designed to protect [the EC's] population from the risk of cancer, but rather to keep out US and Canadian hormone-treated beef and thereby to protect the domestic beef producers" in the EC.[115]

Thus, the Appellate Body did not rule against the EU on the basis of the "sham principle," under which regulations "may be directly reviewed for improper motive."[116] There was no finding in the hormones dispute that "the purported high-minded objectives" of the EU ban were "disingenuous" or that the "real motive" was protectionist.[117] Instead, the ruling in the hormones case reflected a requirement of "credible scientific evidence" under Article 5.1 of the SPS Agreement, which is "related to the sham principle" but is also a distinct principle designed to guard against protectionism.[118] The hormones dispute demonstrates both how the scientific evidence principle is broader than the sham principle and how a broader principle may be necessary to guard against more subtle forms of protectionism.

First, the WTO may be reluctant to accuse one of its members of offering a sham justification. Such a charge risks a backlash from the

or unjustifiable distinctions in the levels it considers to be appropriate in different situations, if such distinctions result in discrimination or a disguised restriction on international trade.").

113. *See* Report of the Appellate Body, *supra* note 5, para. 246 (quoting SPS Agreement, *supra* note 6, art. 5.5).

114. *Id.* para. 245.

115. *Id.*

116. Alan O. Sykes, *Regulatory Protectionism and the Law of International Trade*, 66 U. CHI. L. REV. 1, 17 (1999).

117. *Id.*

118. *Id.*

government accused of insincerity.[119] Thus, even in cases in which a WTO member does invoke a policy rationale disingenuously, it may create political difficulties for a WTO panel or for the Appellate Body to invoke the sham principle.[120]

Second, as the EU noted in the hormones dispute, "legislation (in representative governments) normally reflects multiple objectives," so that the ban on hormones could address both economic concerns and safety concerns.[121] All regulations serve multiple purposes, and therefore protectionist intent may be a subtle matter of degree. Not only a protectionist purpose but also other policy objectives may play some role in the adoption of any given regulation. Thus, identifying a protectionist regulation based on the motives of legislators or regulators may be difficult or infeasible.[122] Donald Regan has suggested that a regulation "should count as having been adopted with a protectionist purpose when the contribution of the protectionist forces was a but-for cause of the decision."[123] Making this determination, however, is not always easy, and the answer may be unclear.[124]

In the case of the EU ban on hormones, for example, some observers claim that environmentalists "had been quietly supported in the campaign against beef hormones by some European beef producers who . . . wanted to stop U.S. producers from increasing their share of the European market."[125] Other observers maintain that the EU "imposed the ban in response to internal social demands from health groups[,] not from any desire to protect domestic producers."[126] The hormones dispute illustrates

119. *See* Charnovitz, *supra* note 37, at 1785 (describing the defiant European response to the WTO panel report accusing the EU of "disguised protectionism").

120. *See* Trebilcock & Soloway, *supra* note 8, at 542 (noting that an inquiry "into the actual motives of domestic legislators or regulators" entails "highly intrusive and diplomatically offensive supranational scrutiny of domestic governments' *bona fides* in adopting or maintaining challenged regulations").

121. Report of the Appellate Body, *supra* note 5, para. 244 (noting the EC's claim that "the predominant motivation" for its hormone ban is "the protection of the health and safety of its population").

122. *See* Trebilcock & Soloway, *supra* note 8, at 542 (noting that an inquiry into the "motives of domestic legislators or regulators is a highly speculative exercise (given political log-rolling, posturing, and dissembling, and the potential for regulatory capture)" and that "motivations . . . may be mixed").

123. Regan, *supra* note 104, at 1884.

124. *Id.* at 1890.

125. Michael B. Smith, *GATT, Trade, and the Environment*, 23 ENVTL. L. 533, 537 (1993) (asserting that "the beef hormone affair had a protectionist undercurrent"). Thus, the EU adopted its ban on hormones "*inter alia* for protectionist reasons." *Id.* at 538. *See also* Castro, *supra* note 40, at 44 (reporting claims by U.S. trade officials that the EU ban "is motivated in large part by protectionism").

126. Bhagwati, *supra* note 67, at A17 (claiming that "the suspicion . . . that the Europeans are really out to restrict our exports" simply "reflects petulance and paranoia"). *See also* Castro, *supra* note

the difficulties in evaluating the regulator's motives in the face of these contending characterizations of the same political process, especially if the WTO is reluctant to accuse regulating member governments of misrepresenting their motives.

Third, although the Appellate Body noted that no one suggested that "the import prohibition of treated meat was the result of lobbying by EC domestic producers of beef,"[127] protectionist intent need not take the obvious form of lobbying at the time of enactment. Instead, a regulation may begin as a response to public anxieties and then subsequently evolve into "an expedient non-tariff barrier" to imports.[128] A regulation that no longer serves a legitimate purpose "may be hard to get rid of if it suits some special interest."[129]

In the hormones dispute, for example, the EU adopted its hormone ban in response to "a huge consumer crusade" against the use of hormones, a campaign "led by a loose coalition of consumer advocates and environmentalists."[130] Thus, the Appellate Body emphasized the role of consumer anxieties in bringing about the hormone ban, focusing on the politics of its enactment rather than on subsequent developments. The EU would later maintain this ban, however, in part because its beef farmers feared that beef imports from the United States "could steal market share from EU beef."[131] In refusing to lift the hormone ban, EU officials cited concerns that "lifting the ban would create an over-supply of meat, which could drive rural beef suppliers out of business."[132]

Regan suggests that we ask whether "*if* the legislature considered the issue anew, it could not adopt or continue the challenged product standard except on protectionist grounds."[133] If the Appellate Body found that the legislature could not, it could "treat the regulation as protectionist and

40, at 44 (reporting the claims of EU officials that the regulation was "designed to protect the public health").

127. Report of the Appellate Body, *supra* note 5, para. 244.

128. *See* Roberts, *supra* note 10, at 386 (noting the U.S. view that the EU ban represented a decision that "subsequently evolved into an expedient non-tariff barrier").

129. Regan, *supra* note 104, at 1869.

130. Aeppel, *supra* note 25, at 6. *See also* Howse, *supra* note 47, at 2330 (noting that the EU hormone ban "directly responded to widespread fears of citizens about the risks presented by such hormones"); Castro, *supra* note 40, at 44 (reporting how the EU adopted the hormone ban after "Europeans became fearful of hormone supplements").

131. BHALA, *supra* note 43, at 1677.

132. *EU Official Signals Continuation of Ban on Hormone-Treated Meat*, *supra* note 44, at 8 (reporting the claims of one EU official that "the EU is generally not short of meat, and does not need U.S. imports").

133. Regan, *supra* note 104, at 1870.

strike it down without reference to the actual history of its adoption or continuation."[134] The answer to this hypothetical question, however, may be even more obscure than the motives underlying the actual adoption of a regulation. We could adopt an approach to this difficult question that gives the benefit of the doubt to the regulator. Regan, for example, proposes that we overturn a regulation "[o]nly if there could be no plausible explanation other than purposeful protectionism" for the regulation,[135] but this deferential review may allow more protectionism than WTO members would like to permit.

Fourth and most important, regulatory barriers to trade need not be characterized by any manifest insincerity on the part of legislators or regulators. Instead, these barriers may simply reflect the general tendency for foreign producers to exert less influence over public policy than domestic producers. Thus, we might seek to prevent not only sham regulations but also any other unjustifiable regulation adopted because the firms disadvantaged by the regulation happen to be disproportionately foreign rather than domestic. We might seek to discourage these regulations even if only environmental or safety concerns motivated the proponents of regulation. That is, we might define protectionism more broadly to include any inefficient regulation that the importing country would not have adopted but for the foreign nationality of the firms placed at a competitive disadvantage and the domestic nationality of the firms favored by the regulation.

Not only domestic producers but also environmentalists may have incentives to create public fears in order to obtain regulations responding to those fears. To the extent that the environmentalists' fears are unsupported by evidence, public fears are less likely to persist over the long term, and a regulatory response is less likely to be efficient. Nevertheless, regulators and legislators may be especially prone to adopt such inefficient risk regulations when the producers burdened by the regulation are disproportionately foreign. In such cases, domestic producers stand to gain from the hobbling of their foreign competition, so their opposition to regulation will be muted. Foreign producers may object, but they may have little influence in the domestic political process in the importing country. Once we recognize the tendency for national governments to adopt inefficient regulations that have the effect of protecting domestic industry from foreign competition, we may respond to this problem through

134. *Id.*
135. *Id.*

WTO rules that target regulations with protectionist effects, even in the absence of protectionist intent.[136]

Thus, the scientific evidence principle can serve as a valuable prophylactic rule, not only when, as is often the case, the sham principle is too cumbersome an instrument to be useful against conscious protectionism, but also to guard against protectionism understood in a broader sense.[137] The requirement of a risk assessment provides a relatively workable rule for cases like the hormones dispute. It may be easier for the WTO to use this rule than to apply the sham principle or to conduct a complex analysis of the welfare effects of the regulation in question. The scientific evidence principle avoids not only the inquiry into motive required by the sham principle but also any direct evaluation of economic efficiency per se or of the fairness of the political process producing the regulation. Rather than requiring such sensitive and difficult inquiries, the scientific evidence principle uses the absence of scientific evidence as a signal of protectionism, understood to refer to a particular type of defect in the political process that generates inefficient regulations that burden trade. The absence of a risk assessment that justifies the regulation in question is a proxy for this protectionism because it implies a greater likelihood that the regulation is inefficient. Thus, we use this risk assessment requirement as a crude but relatively simple filter to screen out regulations that raise a presumption of inefficiency. Insofar as this

136. In a similar vein, Trebilcock and Soloway suggest that the WTO look for "a disparate impact on imports relative to competitive domestic products" in order to screen out "welfare-reducing regulatory protectionism while leaving unconstrained consumer welfare-enhancing risk regulation." Trebilcock & Soloway, *supra* note 8, at 550.

137. Regan suggests that we ask whether "the transfer of business from foreign producers . . . to their local competitors" is "significant enough" to have "plausibly . . . mobilized local producers behind a protectionist agenda," whether this transfer "*did in fact* mobilize such a protectionist agenda[,] and whether that was what carried the legislature." Regan, *supra* note 104, at 1892. I define protectionism somewhat more broadly, however, to include some cases of what Regan calls "unconscious protectionism." *Id.* at 1896. Regan notes that unconscious protectionism may include *efficient* regulations that a legislature would not have adopted but for the foreign nationality of the producers opposing the regulations. *Id.* "It makes no sense," Regan observes, "to say that foreigners are entitled to . . . the distortions that they would be able to accomplish" if they were domestic rather than foreign. *Id.* at 1897. "They do have a right to not be excluded from the market by inefficient regulation, but that obviously gives them no right to the invalidation of an *efficient* regulation . . . ." *Id.* Thus, my definition of protectionism requires the regulation in question to be inefficient. Regan dismisses concerns regarding unconscious protectionism on "the standard assumption that the well-motivated legislature does right by local interests." *Id.* Given that in reviewing domestic laws for protectionism we are generally concerned with failures of legislatures to do right by local interests (including consumers), it seems inappropriate to make this assumption here. *See supra* note 104 and accompanying text.

requirement in the SPS Agreement deters regulations that fail to meet it,[138] it contributes to social welfare, not only because these regulations are less likely to be efficient ex post, but also because this requirement will tend to discourage domestic producers and any other special interests from promoting costly consumer anxieties regarding imports ex ante, whether through the media or through successful lobbying for risk regulation. This prophylactic approach guards against protectionism (broadly understood) without the difficulties entailed by a direct search for protectionist motive or for economic inefficiency on a case-by-case basis.[139]

D. WHAT ROLE FOR CONSUMER ANXIETIES?

While the Appellate Body in the hormones dispute held that consumer anxieties unsupported by any risk assessment cannot justify a risk regulation under the SPS Agreement, the ruling in the hormones case also indicates that consumer anxieties may play some role in justifying risk regulations that burden international trade. Although the Appellate Body found the hormone ban unsupported by any risk assessment and therefore a violation of Article 5.1 of the SPS Agreement, its reasoning regarding Article 5.5 of the SPS Agreement "was based on consumer anxiety about the risk of cancer, not on the risk of cancer itself."[140] Thus, if the EU *were* to produce a risk assessment showing that the use of growth hormones poses a risk to human health, it could successfully defend otherwise "arbitrary or unjustifiable distinctions" in its regulatory response "in

138. One might infer from the hormones dispute itself that the WTO is ineffective in preventing risk regulations unsupported by risk assessments. After all, the EU still refuses to lift the ban challenged in this dispute. *See* Joe Kirwin, *EU Farm Ministers Agree to Legalize Ban on Hormone-Treated Beef Products*, 19 Int'l Trade Rep. (BNA), No. 50, at 2169 (Dec. 19, 2002). Zoellick, the U.S. Trade Representative, however, argues that the WTO ruling in the hormones dispute has prevented other countries from adopting regulations like those adopted by the EU. Alden, *supra* note 31, at 10; King, *supra* note 30, at A8; Rugaber & Yerkey, *supra* note 31, at 100.

139. Regan argues that "*any* judicial invalidation of a regulation, on any ground, entails some criticism of the regulator." Regan, *supra* note 104, at 1891. A regulator, however, may especially resent some claims, such as the accusation of dishonesty required by the sham principle, or accusations that the regulator is "irrational, or ill-informed, or . . . motivated by protectionist purpose." *Id.* Other claims, such as the charge that the regulator is "insensitive to . . . foreign interests," may seem more benign. *Id.* After all, we do not normally require governments to give foreigners and constituents equal weight. Instead, as a general matter, "we do not require even-handed representation; the foreign interests have no right at all to representation." *Id.* at 1897. Furthermore, if we invoke a prophylactic rule that is understood to be overbroad, invalidating some regulations that may not be protectionist at all, then we make no accusation regarding the regulator's motives in any particular case. This feature may make it easier for WTO panels and the Appellate Body to apply such a rule than to apply the sham principle.

140. Walker, *supra* note 13, at 308 n.264.

different situations" by citing differences in consumer anxieties.[141] Thus, once a WTO member meets the threshold requirement of a risk assessment, there is no further obligation to base regulatory responses on cost-benefit analysis or to make those responses proportionate to the risks posed. Instead, these responses may vary with the degree of anxiety among consumers of the products in question.

This role for consumer anxieties in justifying regulations raises many of the same problems posed by regulatory responses to fears unsupported by risk assessments. Insofar as the magnitude of these fears may reflect probability neglect, these regulations may fortify disproportionate fears that would otherwise erode over time. By choosing to regulate some risks rather than others, "a government may reinforce popular prejudices about which risks are serious."[142] Furthermore, the prospect of these regulations may encourage domestic producers or other special interests to promote these fears, especially if these regulations would put foreign competitors at a disadvantage.

Nevertheless, the Appellate Body's compromise regarding the role of consumer anxieties may be a reasonable approach from the standpoint of economic efficiency if fears based on risks identified by a risk assessment, even excessive fears, are likely to be more durable. Furthermore, given the phenomenon of probability neglect,[143] excess fear may arise exogenously, without any endogenous promotion by special interests seeking a regulatory response. Insofar as these fears are more resistant to efforts to educate the public than fears unsupported by any risk assessment, it is more likely to be efficient to take these fears into account in risk regulation and less likely to be efficient to ignore them.[144]

Thus, the economic framework set forth in this Article may provide a consequentialist rationale for the Appellate Body's holdings. This rationale, however, depends on the magnitudes of the various effects of risk regulation in the relevant circumstances. That is, the proposed justification ultimately turns on the answers to a series of empirical questions. In this

141. SPS Agreement, *supra* note 6, art. 5.5.

142. Howse, *supra* note 47, at 2352–53.

143. *See* Sunstein, *Probability Neglect*, *supra* note 3, at 63.

144. Furthermore, Trebilcock and Soloway note that "a consistency requirement rigorously or expansively applied would render a vast array of risk regulations potentially suspect." Trebilcock & Soloway, *supra* note 8, at 552. Thus, the Appellate Body may be reluctant to adopt a more aggressive interpretation of the consistency requirement of the SPS Agreement because such an interpretation would imply a broader intrusion into the domestic laws of WTO members. The WTO may shy away from that more intrusive scrutiny of national laws because such an ambitious undertaking would raise questions regarding the legitimacy of the WTO's role in reviewing the regulations of sovereign states.

sense, the framework proposed here also suggests the type of empirical evidence that could provide a basis for a critique of the Appellate Body's approach rather than a justification.

IV. CONCLUSION

It may not be easy to dismiss public fears as "irrational," even if they are excessive from the perspective of the technocrat. Although we may consider fears based on mistakes of fact to be clear cases of fears that we should ignore, there are both theoretical and practical problems in refusing to respond to such fears with risk regulations. We might seek to identify and eliminate mistakes of fact by educating the public, but communicating information more effectively has proven difficult in practice. Furthermore, the public reaction to the information provided by a risk assessment may differ from the technocrat's reaction, given some uncertainty over the magnitudes of the risk studied or of other risks not subjected to scientific study at all. Finally, whether the public perceives the magnitudes of risks correctly or not, the fear of these risks imposes real social costs that risk regulations can reduce, which suggests that it should always be appropriate to consider reductions in these fears a social benefit militating in favor of regulation. The hormones dispute between the United States and the EU provides an illustration of these problems in the international context.

This Article explores an alternative approach to these problems that does not require us to characterize any fears as irrational and thus not worthy of the regulator's respect or concern. Instead, we might take the reduction of public fear as a legitimate objective of risk regulation, whether this fear seems rational or irrational to the technocrat, but also take into account the implications of regulation for the promotion of this fear. Once we view this fear as an endogenous variable, we must consider how a regulatory response would foster fear not only directly, by reinforcing popular prejudice, but also indirectly, by providing a further incentive for special interests to promote both the fear and the corresponding regulatory response.

This framework allows us to distinguish various risk regulations from the perspective of economic efficiency, based in part on how intense or persistent public fears would be in the absence of a regulatory response. Public fears unsupported by risk assessments may be less likely to persist in the absence of a regulatory response than fears based on such scientific evidence. Furthermore, fears without such a basis are less likely exogenous and more likely generated endogenously by special interests seeking a

regulatory response. If so, then a risk assessment requirement may be an efficient constraint to impose on risk regulations, at least for regulations that place foreign producers at a disadvantage and are thus especially likely to prove inefficient.

By applying this framework to the hormones dispute, we can develop a justification not only for the risk assessment requirement in the SPS Agreement but also for the Appellate Body's interpretation of the SPS Agreement to allow some scope for domestic regulations to respond to consumer anxieties that may seem excessive from the perspective of the technocrat, as long as those anxieties derive some support from risk assessments. We might understand the SPS Agreement as a commitment not to respond to consumer anxieties when such a response is least likely to be efficient and thus most likely to reflect a protectionist bias against the foreign producers burdened by the regulatory response. This bias need not be conscious. Instead, legislators or regulators may tend to adopt inefficient regulations with protectionist effects even in the absence of any protectionist motive. The SPS Agreement serves to curb protectionism understood in this broader sense.

I have presented this approach as an alternative framework that allows us to distinguish between fears that reflect risk assessments and those that do not, and thus to respond to fears validated by those assessments while ignoring those that are not, without dismissing the fears we ignore as irrational. I do not, however, intend to imply that these approaches are mutually exclusive alternatives. To the extent that we believe that fears that fail to reflect risk assessments are based on mistakes of fact or are otherwise unworthy of the regulator's concern, such a belief reinforces the case against a regulatory response to those fears. My analysis suggests, however, that we may not need to rely on such beliefs, which may be controversial, to justify risk assessment requirements or other rules that militate against regulations that respond to those fears.