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Regulatory Toxicology and Pharmacology 44 (2006) 69–74
Regulatory Toxicology and Pharmacology
www.elsevier.com/locate/yrtph

The role of science in international trade law

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Received 26 January 2005
Available online 4 October 2005

Abstract

While the General Agreement on Tariffs and Trade addressed overt barriers to international trade, the current focus of international trade rules has shifted to less obvious, but in many cases no less restrictive, barriers to trade, such as protectionist measures adopted under the guise of health and safety standards. The new agreements established under the World Trade Organization ("WTO"), including the Agreement on the Application of Sanitary and Phytosanitary Measures ("*SPS Agreement*"), the Agreement on Technical Barriers to Trade ("*TBT Agreement*"), provide important tools that can be invoked by governments and used by stakeholders to address regulatory barriers that were once thought outside the purview of international trade rules. Non-science based regulations can be and have been successfully challenged under the *SPS* and *TBT Agreements*, which prohibit WTO Members from maintaining laws or regulations that adversely affect trade unless such measures are scientifically justified. Stakeholders should use to the fullest extent possible international trade rules to eliminate non-science based regulations that adversely affect trade in the goods that they produce.

Keywords: Science; Trade; World Trade Organization; Sanitary; Phytosanitary; Technical barriers to trade; Panel; Appellate body

1. International trade agreements: how they work and what they cover

International trade rules today affect every aspect of the global economy, from capital movements, to trade in goods and services, to intellectual property, to product and food safety standards. These rules complement national legislation, help shape the regulatory environment in countries throughout the world, and offer a neutral, international means by which trade concerns can be raised and disputes can be settled. Of particular interest to professionals in the field of toxicology and applied pharmacology, international trade rules require that particular types of national laws affecting trade be based on sound science and not be more trade-restrictive than necessary to meet a legitimate regulatory interest.

1.1. From GATT to WTO: the expanding reach of international trade rules

Almost 60 years ago, a post-war world undertook its first round of multilateral trade talks, which resulted in the General Agreement on Tariffs and Trade ("GATT"). The major trade barriers being addressed then were principally tariffs, import quotas, and state monopolies. By the time the last GATT round of trade negotiations began in 1986, the focus had shifted to regulatory barriers relating to intellectual property, health, and safety, and the provision of services. This round of negotiations, which concluded in 1994, produced the WTO and its associated agreements, which provide an important avenue to address regulatory barriers that were once thought outside the purview of trade negotiations.

In these Agreements, WTO Members committed themselves to a much-expanded regime of rules and obligations that protects access to global markets on procompetitive terms. While the traditional GATT disciplines prohibiting discrimination between imports and domestic goods could be leveraged to remove many obstacles to market access,

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doi:10.1016/j.yrtph.2005.07.006

new WTO rules can now be brought to bear even more effectively on domestic laws and regulations impeding trade.

1.2. Other sources of trade rules: bilateral and regional free trade agreements

In addition to the WTO Agreements, many countries today are also subject to legally enforceable trade obligations under bilateral and regional free trade agreements ("FTAs"). Approximately 240 FTAs are in force between and among developed and developing countries throughout the world, including the North American Free Trade Agreement ("NAFTA") between the United States, Mexico, and Canada; the Trade, Development, and Cooperation Agreement between the European Union and South Africa; and the Japan-Singapore Economic Partnership Agreement. FTAs often contain provisions analogous to the WTO Agreements, and, in many cases, extend to areas not covered by the WTO, such as competition policy, e-commerce, transparency, and investment. While it is possible that other international trade rules can be invoked to challenge regulations that affect trade and are not based on sound science, this article focuses exclusively on how to use WTO rules to achieve that objective.

2. How WTO Agreements are structured

2.1. Role of the WTO

The WTO itself does not make the rules of international trade but rather is the institution designated to apply the rules agreed to by WTO Members (which now includes 148 countries). These rules are contained in various agreements adopted by the Members, including the Multilateral Agreements on Trade in Goods, the General Agreement on Trade in Services, the Agreement on Trade-Related Aspects of Intellectual Property Rights, and the DSU. The Multilateral Agreements on Trade in Goods include not only the traditional trade rules developed under the GATT but also more specialized and far-reaching rules that impose disciplines on national measures that have an indirect, though potentially substantial, effect on international trade.

2.2. Specialized agreements on trade in goods: SPS and TBT Agreements

Two examples of these specialized agreements on trade in goods are the *SPS Agreement* and the *TBT Agreement*. The *SPS Agreement*, in general terms, prohibits WTO Members from erecting trade barriers under the guise of food safety or pest control measures by requiring that such measures be based on scientific evidence and risk assessments. The *TBT Agreement* obligates each member country to not impose product standards that restrict trade more than is necessary to achieve a legitimate objective, such as environmental protection or consumer safety. As such, these agreements impose disciplines on core domestic regulations to ensure that they are based on legitimate, objective, and scientific considerations.

2.2.1. SPS Agreement

The *SPS Agreement* applies to all "sanitary and phytosanitary measures" that may "affect international trade." The term "sanitary or phytosanitary measure" is defined as any measure applied to protect human, animal, or plant life or health from certain risks, including risks arising from: (i) the "spread of pests, diseases, disease-carrying organisms or disease-causing organisms;" (ii) the presence of "additives, contaminants, toxins or disease-causing organisms in foods, beverages or feedstuffs;" or (iii) "diseases carried by animals, plants or products thereof." The *SPS Agreement*, therefore, includes a broad scope of activities related to food safety as well as the protection of animal and plant health.

Under the *SPS Agreement*, a country is free to set its own level of sanitary and phytosanitary protection, even if that level exceeds the standards set by international organizations, such as the Codex Alimentarius Commission, the International Office of Epizootics and the international and regional organizations operating within the framework of the International Plant Protection Convention. For WTO Members, the advantage of basing their national measures on "international standards" is that, under Article 3.2 of the *SPS Agreement*, such measures are "deemed to be necessary to protect human, animal or plant life or health, and presumed to be consistent with the relevant provisions of the *SPS Agreement* and the GATT 1994." The *SPS Agreement*, in Article 3.3, specifically allows Members to adopt SPS measures which would result in a higher level of sanitary or phytosanitary protection than would be achieved by measures based on the international standards. The laws and regulations designed to achieve that level of protection, however, must be based on sound scientific principles and must not be maintained without sufficient scientific evidence, which are core obligations of the *SPS Agreement*. More specifically, Article 2.2 of the *SPS Agreement* states that:

> Members shall ensure that any sanitary or phytosanitary measure is applied only to the extent necessary to protect human, animal or plant life or health, is based on scientific principles and is not maintained without sufficient scientific evidence, except as provided for in paragraph 7 of Article 5.

The general obligation set out in Article 2.2 finds specific application in Article 5.1 of the *SPS Agreement*, which states that:

> 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.

The obligation that SPS measures be "based on" a risk assessment was interpreted by the WTO Appellate Body in the case concerning *EC—Hormones*. The Appellate Body held that Article 5.1 requires that "the results of the risk assessment [] *sufficiently warrant*—that is to say, *reasonably support*—the SPS measure at stake … [and] there [must] be a *rational relationship between the measure and the risk assessment*."[2] Thus, the Article 5.1 obligation that a measure be "based on" a risk assessment requires that there be a "rational relationship" between the measure at issue and the risk assessment.

In some cases, WTO Members may find that they face risks to food safety or to animal or plant health but do not have sufficient evidence to conduct a full-fledged risk assessment. In these cases, Article 5.7 of the *SPS Agreement* permits Members to apply SPS measures on a provisional basis. The use of provisional measures, however, is rather tightly circumscribed. In particular, Article 5.7 allows Members to adopt provisional measures only in circumstances where "relevant scientific information is insufficient," the measure is adopted "on the basis of available pertinent information," and the Member adopting the measure "seek[s] to obtain additional information for a more objective assessment of risk and review[s] the [SPS] measure accordingly within a reasonable period of time." Still, the Appellate Body has determined that Article 5.7 does not excuse Members from complying with their obligations under Articles 5.1 and 5.2. Thus, although provisional measures are justified in exceptional circumstances, in general, WTO Members are obliged to base their sanitary and phytosanitary measures on the results of a proper scientific assessment of the risks.

Article 2.3 of the *SPS Agreement* requires that WTO Members ensure that their SPS measures "not arbitrarily or unjustifiably discriminate" between Members where identical or similar conditions prevail. In addition, this provision requires from WTO Members that their SPS measures are not applied in a manner which would constitute a "disguised restriction on international trade."

2.2.2. TBT Agreement

The *TBT Agreement* applies to (i) "technical regulations" which are documents that lay down product characteristics with which compliance is mandatory;[3] (ii) "standards," which are documents approved by a recognized body, that provide, for common and repeated use, rules, guidelines or characteristics for products or related processes and production methods, with which compliance is not mandatory;[4] and (iii) "conformity assessment procedures" which are procedures that are used to determine that the requirements laid down in technical regulations or standards are fulfilled.[5]

Perhaps the most important provision of the *TBT Agreement* is Article 2.2, which, in addition to a number of other objectives, disciplines the use of trade-restrictive regulations that are not based on scientific information. This provision clarifies that technical regulations cannot create "unnecessary" obstacles to international trade and that such regulations cannot be more trade-restrictive than "necessary" to fulfill a legitimate objective, including the protection of human health or the environment. More specifically, Article 2.2 of the *TBT Agreement* states that:

> Members shall ensure that technical regulations are not prepared, adopted or applied with a view to or with the effect of creating unnecessary obstacles to international trade. For this purpose, technical regulations shall not be more trade-restrictive than necessary to fulfill a legitimate objective, taking account of the risks non-fulfillment would create. Such legitimate objectives are, inter alia: national security requirements; the prevention of deceptive practices; protection of human health or safety, animal or plant life or health, or the environment. In assessing such risks, relevant elements of consideration are, inter alia: available scientific and technical information, related processing technology or intended end-uses of products.

In other words, if a WTO Member maintains a technical regulation that creates an obstacle to international trade, that regulation must be necessary to achieve a legitimate objective, taking account of "available scientific and technical information."

Article 2.4 of the *TBT Agreement*, like Article 3.3 of the *SPS Agreement*, encourages Members to use accepted international standards when adopting technical regulations. It states:

> Where technical regulations are required and relevant international standards exist or their completion is imminent, Members shall use them, or the relevant parts of them, as a basis for their technical regulations except when such international standards or relevant parts would be an ineffective or inappropriate means for the fulfillment of the legitimate objectives pursued, for instance, because of fundamental climatic or geographical factors or fundamental technological problems.

The *TBT Agreement* contains similar disciplines on the use of conformity assessment procedures, which, like technical regulations, may not be prepared, adopted or applied with a view to or with the effect of creating "unnecessary"

[2] Appellate Body Report, *European Communities—Measures Concerning Meat and Meat Products* (*Hormones*), WT/DS26/AB/R, WT/DS48/AB/R, adopted 13 February 1998, at para. 193 (emphasis added) ("*EC—Hormones*"); *see also* Panel Report, *Australia—Measures Affecting Importation of Salmon Recourse to Article 21.5 of the DSU by Canada*, WT/DS18/RW, adopted 20 March 2000, at para. 7.72 (applying standard articulated by Appellate Body in *EC—Hormones*).

[3] Agreement on Technical Barriers to Trade, Annex 1 (1).

[4] Agreement on Technical Barriers to Trade, Annex 1 (2).

[5] Agreement on Technical Barriers to Trade, Annex 1 (3).

obstacles to international trade. More specifically, Articles 5.1 and 5.1.2 of the *TBT Agreement* state that:

> Members shall ensure that, in cases where a positive assurance of conformity with technical regulations or standards is required, their central government bodies apply the following provisions to products originating in the territories of other Members:…
>
> conformity assessment procedures are not prepared, adopted or applied with a view to or with the effect of creating unnecessary obstacles to international trade. This means, inter alia, that conformity assessment procedures shall not be more strict or be applied more strictly than is necessary to give the importing Member adequate confidence that products conform with the applicable technical regulations or standards, taking account of the risks non-conformity would create.

Thus, if a conformity assessment procedure is available that is less restrictive of trade than an existing or proposed measures and gives adequate assurance that the relevant standards and regulations will be fulfilled, then WTO Member governments are obliged to use the less restrictive alternative. If there is no reason or an insufficient scientific reason to prepare, adopt or apply a certain conformity assessment procedure that restricts trade, such procedure would likely be struck down by a Panel or the Appellate Body.

3. Enforcing WTO rights

The world economy has to a large extent become "globally contestable." Not only has there been an expansion in the number, scope and reach of multilateral and regional trade rules, but those rules have also become increasingly enforceable. When trade rules are broken, a wide array of dispute settlement mechanisms is now available around the world, including enforcement options that can supplement—or even substitute for—litigation in domestic courts. The availability of global enforcement options can be an important factor in assessing and managing the risks involved in international commerce.

The WTO Agreements provide a dispute settlement mechanism that offers a neutral and unblockable multilateral determination of rights and obligations. WTO dispute settlement rules provide the only legally binding means to tell a government in no uncertain terms that it must either eliminate laws or regulations that are inconsistent with its trade obligations or face economic consequences, as the prevailing government is authorized to impose trade retaliation.

WTO dispute settlement has some drawbacks. First, while commercial stakeholders provide factual and legal support to a government, a WTO dispute can be initiated only by governments. Second, winning at the WTO does not result in compensation to commercial stakeholders for past damages. However, success at the WTO has in most cases led to improved trading conditions for the future. Moreover, winning a WTO dispute curbing abuse in one market can deter copycat measures that could limit business dealings in other markets.

4. "Leveraging" WTO rights short of dispute settlement

While the WTO dispute settlement system provides a powerful tool to challenge non-science based regulations, it should be noted that in most cases it will probably not even be necessary to begin Panel proceedings at the WTO. This is because the mere threat by a government of bringing a WTO case is frequently incentive enough for another government to change its rules, in particular when the underlying facts to support the legal claim are strong. Indeed, even the mere threat by commercial stakeholders that are adversely affected by non-science based regulations to enlist the support of their home government for a WTO claim can sometimes be enough to influence another government to change course. This is to a large extent because of expansive reach of clearly written rules in the WTO Agreements, which have been interpreted and applied in a growing body of jurisprudence, and are subject to effective enforcement in the WTO dispute settlement system. Thus, if the underlying facts constitute a credible case, it is often not necessary to go through litigation.

Some WTO Members have adopted procedures for stakeholders to lodge complaints regarding the trade barriers they face and to encourage their home governments to act on their behalf. For example, European Communities ("EC") stakeholders can use the mechanism laid down in the so-called "Trade Barriers Regulation" to persuade the European Commission to investigate their complaints. If the European Communities believes a complaint is justified—i.e., if it believes the measure is inconsistent with a WTO agreement—then the European Communities has various options, including threatening to initiate WTO dispute settlement procedures to induce the foreign government to comply with its international trade obligations.[6] Another example of a useful mechanism for stakeholders to push their government into action is the so-called "Section 301" procedure in the United States.[7] Any U.S. stakeholder may file a petition setting forth allegations that the actions of a foreign government violate international trade rules and requesting remedial action.[8] If the U.S. Administration investigates the allegations, which it must decide whether to do within 45 days of receiving the petition, and the investigation indicates that the foreign government has violated

[6] See Council Regulation 3286/94, art. 12, OJ L 349, 31.12.94, p. 71 last amended by Council Regulation 356/95, OJ L 41 23.02.95 at p. 3 (laying down Community procedures in the field of the common commercial policy to ensure the exercise of the Community's rights under international trade rules, in particular those established under the auspices of the World Trade Organization).

[7] 19 U.S.C.A. § 2411 *et. seq.* (1999).

[8] 19 U.S.C.A. § 2412 *et. seq.* (1999).

an international trade agreement, then the Administration must act to enforce the agreement, subject to a limited number of exceptions.[9]

But even if the home government of an affected stakeholder brings an official WTO complaint challenging the non-science based regulations, the underlying dispute is often settled before the claim is heard and decided by a WTO panel. Each claim begins with a "request for consultations," which provides a period of at least 60 days for the complainant and the respondent to seek information and consider possible resolutions to the dispute. Indeed, although more than 300 complaints have officially been filed, WTO panels issued fewer than half that number of reports. In many cases, setting forth the factual and legal basis for a claim has been sufficient to convince the defending government to bring its measures into compliance with WTO rules, thereby underscoring the importance of these rules and the influence of the WTO dispute settlement system. Stakeholders are increasingly using the option of invoking WTO rules if they object to foreign regulations that obstruct trade and are not based on credible science.

5. WTO disputes

To understand how the *SPS* and *TBT Agreement*s work in practice and how they can be used most efficiently by stakeholders, it is useful to consider some of the disputes in which these agreements were at issue. It is important to note in each of these cases how the availability (or lack thereof) of concrete and persuasive scientific evidence determined to a large extent the outcome of the case.

5.1. SPS Agreement

In the case of *EC—Hormones*, the United States and Canada challenged an EC prohibition on the importation and marketing of meat and meat products that had been treated with any of six growth hormones. The prohibition effectively blocked exports to the European Communities of meat produced in Canada and the United States where these hormones are commonly used. In defending the measure, the European Communities presented various types of "scientific evidence" to support the ban. The Panel, however, took into account only the evidence that satisfied the definition of "risk assessment" set forth in the *SPS Agreement* and disregarded other non-scientific reports and opinions.[10] As for the evidence that did qualify as a "risk assessment," the Panel and Appellate Body concluded that the measure prohibiting the growth hormones was not "based on" these risk assessments, as required by Article 5.1 of the *SPS Agreement*. As the Appellate Body explained, Article 5.1 requires that there be a "rational relationship" between the SPS measure at issue and the risk assessment.[11]

In the second case under the *SPS Agreement* in which a dispute settlement report was issued, *Australia—Salmon*, Canada asserted a claim challenging Australia's import prohibition on wild, uncooked salmon from North America that had not been heat-treated. Australia justified the measure as necessary to prevent the introduction and spread of disease that might be carried by North American salmon, which, if it entered Australian territory, would threaten the local salmon population. The Panel and the Appellate Body concluded that the import prohibition was not based on a risk assessment because, although Australia had identified the disease it wished to prevent, it failed to evaluate the likelihood of the entry and spread of the disease or the likelihood that this would occur based on the SPS measure applied.[12] Accordingly, the import prohibition was found to violate inter alia Article 5.1 of the *SPS Agreement*.

In *Japan—Agricultural Products II*, the United States challenged Japan's import regime for eight types of fruits and nuts that are potential hosts of codling moth, a pest not found in Japan. The regime banned the importation of each of these products but allowed exemptions from the ban on a variety-by-variety basis. The Panel concluded and the Appellate Body affirmed that the varietal testing requirement violated Article 2.2 of the *SPS Agreement* for four of the products because the requirement was "maintained without sufficient scientific evidence."[13] This obligation, according to the Appellate Body, requires that "there be a rational or objective relationship between the SPS measure and the scientific evidence."[14]

Significantly, the Panel and the Appellate Body found that the inconsistency of the varietal testing requirement with Article 2.2 could not be justified by Article 5.7. As discussed above, Article 5.7 allows WTO Members to maintain provisional measures where "scientific information is insufficient" if the measure is based on "pertinent information" and the Member seeks to obtain "additional information necessary for a more objective assessment of the risk," and reviews the measure "within a reasonable period of time." In this case, the Panel and Appellate Body agreed that Japan had not sought additional information "germane" to a more objective risk assessment and failed to review the measure for 4 years, which was found to be unreasonable.[15]

Finally, the most recent case to be decided under the *SPS Agreement*, *Japan—Apples*, involved a U.S. claim against a comprehensive Japanese measure to protect

[9] 19 U.S.C.A. § 2414–2415 *et. seq.* (1999).

[10] Panel Report, *European Communities—Measures Concerning Meat and Meat Products* (*Hormones*), Complaint by the United States, WT/DS26/R/USA, adopted 13 February 1998, at paras. 8.109–8.111.

[11] Appellate Body Report, *EC–Hormones*, at para. 193.

[12] Appellate Body Report, *Australia—Measures Affecting Importation of Salmon*, WT/DS18/AB/R, adopted 6 November 1998, at para. 134.

[13] Appellate Body Report, *Japan—Measures Affecting Agricultural Products*, WT/DS76/AB/R, adopted 19 March 1999, para. 11.

[14] Appellate Body Report, *Japan—Measures Affecting Agricultural Products*, WT/DS76/AB/R, adopted 19 March 1999, para. 84.

[15] Appellate Body Report, *Japan—Measures Affecting Agricultural Products*, WT/DS76/AB/R, adopted 19 March 1999, paras. 92–94.

Japanese apples from the fire blight bacterium (*Erwinia amylovora*). Fire blight was first reported in the United States in 1793 and over time spread to much of Europe and the Mediterranean region. Japan, however, is still free of fire blight free and the Japanese government had imposed a trade restrictive measure to keep the bacteria from entering its territory. The Panel and Appellate Body agreed that the Japanese measure violated Article 2.2 of the *SPS Agreement*, because it was "maintained without scientific evidence."[16] In addition, they found that the measure was not imposed in respect of a situation where relevant scientific evidence is "insufficient," and, therefore, the Panel and Appellate Body concluded that it was not a provisional measure that could be justified under Article 5.7 of the *SPS Agreement*.[17] Finally, the Appellate Body upheld the Panel's conclusion that the measure was "not based on a risk assessment as required by Article 5.1 of the *SPS Agreement*."[18] Since the Appellate Body's ruling, Japan claims to have brought its regime into compliance with its WTO commitments. The United States disagrees, however, and on July 30, 2004, it initiated another WTO case against Japan, challenging the new measure.

5.2. TBT agreement

Although *EC—Asbestos* was ultimately decided under the GATT 1994, the case helped to further define the term "technical regulation," one of the three types of measures that trigger the application of the *TBT Agreement*. More specifically, the Appellate Body concluded that the "product characteristic" set forth in a "technical regulation" can be the absence of adverse health effects. In the case, Canada challenged a French measure banning most asbestos containing products but providing certain exceptions, which the Appellate Body found applied to "products with certain objective 'characteristics.'"[19] In particular, the exceptions applied to products that pose "a lesser occupational health risk" and provide "all technical guarantees of *safety*."[20] According to the Appellate Body, therefore, government measures that prescribe health-related characteristics for a product may fall within the scope of the *TBT Agreement*.

In *EC—Sardines*, Peru brought a claim against the European Communities for maintaining a regulation that applied different labeling regimes to two different types of sardines, one found in the waters of the Eastern North Atlantic, the Black Sea, and the Mediterranean (*Sardina pilchardus*), and the other found in the waters of the Eastern Pacific off the coast of Peru and Chile (*Sardinops sagax*). The European Communities permitted only the first type to be labeled and marketed as "sardines," prompting the WTO challenge by Peru.

The Appellate Body affirmed that the EC measure is a "technical regulation" under the *TBT Agreement* because it is a document which lays down product characteristics with which compliance is mandatory.[21] The Appellate Body then upheld the Panel's finding that the regulation was inconsistent with Article 2.4 because of the existence of an international standard for labeling sardines (i.e., a Codex Alimentarius Commission standard),[22] which the European Communities did not use as the basis for its regulation,[23] and Peru, the complainant, demonstrated that this international standard was "not 'ineffective or inappropriate' to full the 'legitimate objectives' of the EC regulation."[24] *EC—Sardines* is noteworthy, therefore, for the central role that international standards played in deciding the outcome of this dispute.

6. Conclusion

While during the existence of the GATT the trade barriers that were being addressed were principally tariffs, import quotas, and state monopolies, the current focus in international trade has shifted to regulatory barriers relating to intellectual property, health, and safety and the provision of services. The new WTO Agreements, including the *SPS* and *TBT Agreement*s and the WTO dispute settlement procedures, provide important tools that can be invoked by governments and used by stakeholders to address regulatory barriers that were once thought outside the purview of trade negotiations. Non-science based regulations can be and have been successfully challenged on the basis of the *SPS* and *TBT Agreement*s that explicitly prohibit rules that affect trade without a proper scientific justification. Stakeholders should use to the fullest extent possible international trade rules to eliminate non-science based regulations that adversely affect trade in the goods that they produce.

[16] Appellate Body Report, *Japan—Measures Affecting the Importation of Apples*, WT/DS245/AB/R, adopted 10 December 2003, at para. 168.

[17] Appellate Body Report, *Japan—Measures Affecting the Importation of Apples*, WT/DS245/AB/R, adopted 10 December 2003, at para. 188.

[18] Appellate Body Report, *Japan—Measures Affecting the Importation of Apples*, WT/DS245/AB/R, adopted 10 December 2003, at para. 216.

[19] Appellate Body Report, *European Communities—Measures Affecting Asbestos and Asbestos-Containing Products*, WT/DS135/AB/R, adopted 5 April 2001, at para. 74.

[20] Appellate Body Report, *European Communities—Measures Affecting Asbestos and Asbestos-Containing Products*, WT/DS135/AB/R, adopted 5 April 2001, at para. 2 (emphasis added).

[21] Appellate Body Report, *European Communities—Trade Description of Sardines*, WT/DS231/AB/R, 23 October 2002, at para. 195. It should be noted that this case was not closely related to "science"—although the marketing and labeling standards at issue did involve the use of the scientific name of a food product. The reason why this case is included here is because it is one of the few TBT cases that have been litigated before a WTO Panel and the Appellate Body.

[22] Appellate Body Report, *European Communities—Trade Description of Sardines*, WT/DS231/AB/R, 23 October 2002, at para. 233.

[23] Appellate Body Report, *European Communities—Trade Description of Sardines*, WT/DS231/AB/R, 23 October 2002, at para. 258.

[24] Appellate Body Report, *European Communities—Trade Description of Sardines*, WT/DS231/AB/R, 23 October 2002, at para. 291.