
1. Introduction

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Although originally seen as one of the main achievements of the Uruguay Round, the Technical Barriers to Trade (TBT) Agreement made little contribution to the jurisprudence of the World Trade Organization (WTO) in the first decade or so of the WTO's existence. But this is changing. Recently, in a range of important and sensitive disputes, the rights and obligations of the TBT Agreement have been a central focus, and in 2012 the Appellate Body decided a trilogy of cases where it gave strong indications of its overall jurisprudential approach to the TBT Agreement. At the same time, the committee responsible for TBT issues in the WTO has begun to succeed in significant 'rule-making' activity, on issues such as the use of international standards. This watershed period for the TBT Agreement is the context for the present volume, where a distinguished and diverse group of scholars address many of the central doctrinal, conceptual, and policy challenges presented by the TBT Agreement.

In thinking about the TBT Agreement, a logical point of departure is to consider whether and how it represents a different approach to the GATT in managing the interface between liberalized trade and domestic regulation. As Michael Trebilcock and I have observed,¹ the GATT is premised upon the acceptance of regulatory diversity, limited only by requirements of non-discrimination (MFN and national treatment) and transparency. A common view of the TBT Agreement has been that the Agreement reflects a choice to go beyond non-discrimination toward the encouragement of what is sometimes called 'positive integration' or harmonization, imposing disciplines even on non-discriminatory regulations that have trade-restrictive effects. As Trebilcock and I have explored, the welfare calculus of going beyond the discipline of what Sykes calls 'regulatory protectionism'² toward positive integration are complex. As Markus Wagner notes in Chapter 7 on harmonization,

¹ 'Trade Liberalization and Regulatory Diversity: Reconciling Competitive Markets with Competitive Politics' (1998) 6:5 *European Journal of Law and Economics* 37.

² A. Sykes, 'Regulatory Protectionism and the Law of International Trade' (1999) 66:1 *University of Chicago Law Review* 1-46.

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regulatory diversity undoubtedly increases the costs of trade, because producers must adapt to different regulatory requirements in different markets. But there can also be benefits from regulatory diversity, especially if preferences for regulation differ significantly from jurisdiction to jurisdiction.

As is reflected in the (qualified) requirement that WTO Members use international standards as a basis for their regulations, unquestionably the TBT Agreement goes some distance in the direction of positive integration. The question is: how far does it and ought it?

An alternative vision of the TBT Agreement, which stresses continuity with GATT, is that the Agreement offers a more refined or at least additional set of tools for addressing 'regulatory protectionism,' rather than striking out boldly in the direction of positive integration. On this view, under the TBT Agreement, domestic regulations must jump through a different set of hoops, but in the end if they are genuinely non-protectionist they should be able to land on their feet; on such a view one needs to pay attention to the limited, balanced, and qualified manner in which the GATT-plus obligations of the TBT Agreement are often expressed.

The Appellate Body, in the *US – Clove Cigarettes* case, has taken the view that the overall balance between the right to regulate and trade liberalization should be viewed as the same under the TBT Agreement as that established under GATT through the interplay of, for example, the national treatment obligation with the Article XX general exceptions. This is a very important philosophical statement that affects the interpretation of the TBT Agreement as a whole; the Appellate Body would seem to be adopting the view that the TBT Agreement has the same aim as GATT, while simply adopting a different set of tests or balancing concepts. In other words, the TBT Agreement ought not to be read, overall, as a more liberalizing or integrating instrument than GATT. Since the TBT Agreement was negotiated, at a time when what is sometimes called neo-liberalism was at or near its peak, it is fair to say there has been increasing controversy about the merits of deregulation and growing concern about the capacity of the WTO regime to preserve 'policy space' for domestic authorities, especially in developing countries.³ While in the past mostly complaining about regulatory barriers in developed country markets, developing countries have been increasingly concerned with the

³ See R. Howse, 'Regulatory Measures' in Narlikar, Daunton and Stern, eds., *The Oxford Handbook on the World Trade Organization* (Oxford: Oxford University Press, 2013), 441–457.

preservation of their own policy space. Events as diverse as financial crises and outbreaks of food-borne illnesses have created a sense that cautious or strict regulatory approaches need not be seen as protectionist gestures to rent-seeking interests. In this emerging overall context, the Appellate Body's approach to the TBT Agreement may well make sense from the perspective of the legitimacy of the WTO system, or at least that of the dispute settlement organs. Whether it is justified as a reading of the treaty under the interpretative principles of public international law or can be sustained by economic analysis (as Trebilcock and I would suggest, based upon the benefits of regulatory diversity) are questions. The answers can only be found based upon an in-depth examination of the text of the TBT Agreement and of how the dispute settlement organs, the TBT Committee, WTO Members, and other international organizations have engaged with and been affected by the Agreement. This is the task that the contributors to this volume have set for themselves.

Chapter 2, by Arkady Kudryavtsev, sets the stage with an overview of the origins and context of the TBT Agreement and also elucidates the structure, coverage and scope of the TBT Agreement, including its relationship to other WTO Agreements, including GATT and the SPS Agreement.

One of the most important issues concerning the scope of the TBT Agreement addressed by Kudryavtsev is that of process and production methods (PPMs). As is well known, in the GATT era *Tuna/Dolphin* cases, the unadopted GATT Panel put forward the notion that it was impermissible under the GATT, whether under Article III:4 or Article XX, to treat products differently based on their process and production methods. In the *US – Shrimp* case, the WTO Appellate Body effectively reversed this approach, stating that under Article XX of the GATT there was no reason in principle why measures addressed to the manner in which products are produced in the exporting country could not be justified. As noted by Kudryavtsev, the TBT Agreement defines 'technical regulations' to include documents mandating product characteristics and 'their related process and production methods'. It has often been supposed, as noted in the chapter, that the term 'product-related' processing and production methods only refers to cases where the PPM affects the physical characteristics of products. As Kudryavtsev discusses, the negotiating history of the TBT Agreement suggests some delegations assumed such an understanding. Thus, PPMs related, for example, to labor conditions or environmental externalities from the production process itself, would not be covered. At the time at which the Uruguay Round negotiations occurred, the *per se* GATT illegality of such measures was assumed by many in the trade policy community even though

the *Tuna/Dolphin* reports were never adopted, were highly controversial, and despite a lack of textual basis for excluding PPMs. Now that the Appellate Body has clarified that PPMs related to externalities of the production process are not in principle unjustifiable under GATT, it would be arguably inappropriate to read the language of ‘product-related’ to exclude such measures from TBT disciplines. Along these lines, Trebilcock, Howse and Eliason have argued that the proper interpretation of ‘product-related’ is that the PPM requirement must concern an identifiable traded product; this makes sense as the TBT Agreement is a *lex specialis* of the GATT, which concerns *trade in goods*. Thus, PPMs that are traded as services (a design for an assembly line for instance) or as intellectual property (a process patent) would not be covered by the TBT Agreement. As Kudryavtsev explains, the labeling requirements in the recent *US – Tuna* TBT decision were considered by the Panel to come within the scope of the TBT Agreement; these clearly concerned aspects of production of tuna-dolphin safety that were unrelated to physical characteristics of the tuna itself. The Appellate Body upheld the Panel on the applicability of the TBT Agreement’s disciplines to this kind of PPM. It is thus now clear that the restrictive view of a product-related PPM as one that affects the physical characteristics of the product has been rejected; rather it seems sufficient that the requirement be imposed in relation to a traded product.

A more questionable determination concerning the scope of the TBT Agreement in the *US – Tuna II* case, also addressed by Kudryavtsev, is that a voluntary labeling scheme can come within the definition of a ‘mandatory’ technical regulation where there is some element of government action to ensure the truthfulness of the claims made by the label. Thus, in *US – Tuna II*, the impugned measure simply required that in order to be represented to the consumer as dolphin-friendly, tuna had to be caught in a certain manner that assured the safety of dolphins. Not only did the US not require that tuna be dolphin-safe in order to enter the US market, it did not even make dolphin-safe labeling mandatory. In sum, the only mandatory aspect was related to ensuring that the use of a voluntary labeling scheme not be confusing or misleading of consumers. The Panel and the Appellate Body appeared to accept that any mandatory aspect of a measure renders it a ‘technical regulation.’ But the TBT Agreement also applies to standards and conformity assessment measures and has different disciplines for these. Arguably, the mandatory dimension of the US measure ought to have been assessed under the conformity assessment disciplines, as it was really about determining whether tuna conformed to the voluntary standard that was being represented by the label in question. Would tort laws that give consumers a right of action

for fraudulent misrepresentation really count as technical regulations because they in effect mandate that producers not make false claims about their products? In Chapter 7, on harmonization, Markus Wagner presents a powerful critique of the reasoning of the Panel majority and the Appellate Body on the definition of ‘technical regulation’; as he notes, ‘The problem with the Panel’s majority opinion in *Tuna II* as well as the Appellate Body’s holdings ... in *Tuna II* is that they are overly formalistic and focus on the particular measure at hand, without regard to other enforcement mechanisms, such as rules pertaining to misleading advertisement.’

Chapter 3, by Arthur Appleton, addresses the very detailed provisions on conformity assessment in the TBT Agreement, which reflect the concern that the way in which WTO Members enforce technical regulations can constitute a significant obstacle to trade, and may involve protectionism that is absent from the face of the regulations themselves. Developing countries have often complained that unduly onerous conformity assessment procedures are a significant factor in limiting access to developed country markets. As Appleton notes, Article 12 of the TBT Agreement provides that Members must consider the ‘special development, financial and trade needs of developing country Members’ in the preparation and application of conformity assessment procedures ‘with a view’ to ensuring that such procedures ‘do not create unnecessary obstacles to exports from developing country Members.’ At the same time, the requirements of the TBT Agreement, including those of transparency and prompt decision-making concerning conformity assessment, impose considerable burdens on developing countries with respect to laboratories, inspection facilities, and so forth. As Appleton notes, there are a variety of provisions in the TBT Agreement that attempt to address this through calling for technical assistance (Articles 11.6–8) but these obligations, essentially of a soft law nature, far from guarantee sufficient support for capacity building in developing countries. The WTO neither has the competence nor the expertise to perform this role: as Mavroidis and Wijkström will note in Chapter 6: ‘[The WTO TBT] Committee cannot, itself, physically build laboratories or testing equipment.’ Here, entities such as regional development banks may be able to help to fill the gap; the present author participated in a project for the modernization of the standards and conformity assessment system in a small Caribbean country, explicitly with a view to the country’s improved participation in the international trade regime. The project was ultimately supported by a loan from the Inter-American Development Bank, and leveraged in part on the expertise of the CARICOM regional standardization organization, CROSQ. Development of conformity assessment

capacity for developing countries is important not only to allow compliance with TBT norms: it enhances access to developed country markets through facilitating recognition of conformity assessment done in the country of export. As Appleton indicates through the example of imports of toys with which he begins the chapter, there is in any case a practical limit to which the importing country can ensure the safety of products through inspections at the border. This only reinforces the importance of capacity-building in countries where lax or even non-existent controls exist domestically. Finally, while as noted, the traditional concern of developing countries was that of conformity assessment as a barrier to exports to the developed world, there has been an increasing emphasis on the problem of unsafe products (often already banned or strictly controlled in the developed countries where they are produced) being put into the market in the developing world, often without notice of their riskiness. Thus, capacity-building is important also to allow developing countries to assess the risk from imports, not just to enhance the access of their exports to the developed world.

In Chapter 4 Denise Prévost addresses the provisions of the TBT Agreement that require transparency in Members' regulations and standards; this chapter is closely related to that of Mavroidis and Wijkström, who discuss transparency in the context of the work of the TBT Committee. Prévost distinguishes between *ex ante* and *ex post* transparency. The former is addressed in the TBT Agreement by requiring that 'exporting countries are informed of proposed new or amended TBT measures at the draft stage and that affected foreign traders have the same opportunity, through their governments, to raise concerns regarding these proposals and to have their comments taken into account in the regulatory process. This also facilitates the avoidance of trade disputes, as trade concerns can be addressed at an early stage, before TBT measures are finalized.' *Ex post* transparency, by contrast, is important in order that traders be familiar with the requirements they have to follow in order that their products gain market access. As Prévost rightly notes, this is also important with respect to standards, which, although voluntary, may determine the acceptability to the marketplace of imports (especially where there are concerns about compatibility of imports with domestic goods and services of which they may be components).

Prévost discusses the Panel and Appellate Body jurisprudence to date as it bears on transparency. One of the most important dimensions here is the way in which the dispute settlement organs may rely upon 'rule-making' by the political organs of the WTO to elaborate the standards by which conformity with the TBT provisions on transparency may be evaluated. For example Article 2.12 of the TBT Agreement requires a

reasonable period of time between publication of a TBT measure and its entry into force, so as to allow economic actors to adapt to the new requirements. The Doha Ministerial decision provided that the reasonable period of time must be at least six months. The Appellate Body held that while not an 'authoritative interpretation' within the meaning of Article IX:2 of the TBT Agreement, the decision constituted a 'subsequent agreement between the parties' under Article 31(3)(a) of the Vienna Convention on the Law of Treaties and thus could be relied upon in this manner. This way of using WTO 'rule-making' still allows the dispute settlement organs the discretion to deviate from or modify the decision in question where, given the context of the dispute, its application would be in tension with the object, purpose, or ordinary meaning of the text of the TBT Agreement.

The crucial issue of standard of review under the TBT Agreement is addressed by Michael Ming Du in Chapter 5. As Du notes, through most of the course of its history, the Appellate Body resisted demands by parties that it articulate a standard of review in examining the determinations of domestic regulatory agencies. Instead, the Appellate Body insisted that the 'objective assessment' requirement of Article 11 of the DSU precluded the adoption of any particular standard of deference (or non-deference) to domestic regulatory authorities, but instead suggested that objective assessment implied something less intrusive than *de novo* review while also excluding any notion of complete or general deference to the findings of domestic regulatory authorities. As the chapter on standard of review indicates, more recently, the Appellate Body has addressed explicitly the question of standard of review, particularly in SPS cases. As Du observes, the approach of the Appellate Body in these reports may be particularly apposite to the way in which standard of review is approached in the TBT context, especially where complex scientific or technical evidence is involved. In *US – Continued Suspension*, in the context of the SPS Agreement (where there are specific requirements of scientific justification by risk assessment) the Appellate Body articulated a very particular standard of review applicable to the handling of scientific evidence and expertise. The Appellate Body criticized the Panel for substituting its own judgments about the correct scientific conclusions for those of the domestic authorities. According to the Appellate Body, a Panel should defer to the scientific risk assessment of the domestic authorities as long as the risk assessment is the work product of qualified and reputable scientists *and* is objective and coherent. In the later *Japan – Apples* case the Appellate Body emphasized the importance of this second prong: even where an expert opinion is the product of a reputable scientist, the Panel is obliged to insure that the

report is objective and coherent. But the Appellate Body also emphasized that the deference in question applied specifically to the treatment of scientific determinations on which the domestic authorities have relied; the standard of review with respect to the choices among regulatory instruments that Members make is of a different character. Thus, under Article 5.6 of the SPS Agreement, which in some respects resembles Article 2.2 of the TBT Agreement, Members are required to avoid unnecessary obstacles to trade in their regulatory choices. Here it is not enough that the choice of the Member be objective and coherent, and based on sound science; that choice must be compared with reasonably available alternatives that might be argued also to achieve the chosen level of protection. In this respect, as Du indicates, the Appellate Body jurisprudence with respect to Article XX of the GATT is most relevant. The Appellate Body has moved to an approach that it tries to articulate as the weighing and balancing of various factors. At the same time, this does not entail a classic proportionality test; thus the Appellate Body has repeatedly affirmed the requirement of complete deference to a Member's chosen level of protection (despite a rather confusing statement in *Japan – Apples* that suggested a departure from that deference); thus, even if a much less trade-restrictive measure would come very close to the chosen level of protection, a Member is still not required to adopt the less restrictive measure.

In the recent *US – COOL* and *US – Tuna II* decisions, the Appellate Body expressed general dissatisfaction with the findings of the panels under Article 2.2. Part of the reason may be the Panels' tendency to second-guess the manner in which the regulating Member has stated the goal of its measure as a particular level of protection against a given risk. It has become something of conventional wisdom in circles around the WTO that by rejecting claims of a violation of Article 2.2 while finding or upholding violations of Article 2.1 in the TBT trilogy, the Appellate Body has sent a signal that the non-discrimination disciplines in Article 2.1 of the TBT Agreement are a more appropriate vehicle for the scrutiny of domestic regulations. It may be easier to prove, based on the standard of review in question, that a measure is discriminatory under Article 2.1 than to show that a measure is an unnecessary obstacle to trade under Article 2.2. At the same time, within Article 2.1 the Appellate Body has held that even if otherwise inconsistent with the obligation of no less favorable treatment because there is a detrimental impact on imports, measures will not violate Article 2.1 to the extent that the detrimental impact can be explained by a 'legitimate regulatory distinction.' What this adds up to is the notion, as discussed, that an interpretation of the obligations in the TBT Agreement should not result in a different balance

between the right to regulate and trade liberalization than that which is struck by the GATT, in particular the interplay of Article III and Article XX.

Du makes the observation that 'the regulatory value protected by the disputed measure weighs heavily in the Appellate Body's approach to standard of review': hence, 'If the value at stake is human health and safety, the Appellate Body tends to respect the Member's judgment and consider necessary very strict enforcement aimed at even zero risk even if that means a very heavy burden of exports.' He suggests this explains why the Appellate Body adopted a relatively stricter standard of review in *Korea – Beef* than in *Brazil – Retreaded Tyres* or *EC – Asbestos*; in the former case what was at stake was the risk of consumer deception, in the latter health and environmental protection.

Chapter 6 by Mavroidis and Wijkström focuses on the role of the TBT Committee, particularly in the area of transparency with respect to standards and regulations. They emphasize the 'information exchange' role of the Committee, and track its practice of examination of Members' standards and regulations, including those that are proposed for the future. Mavroidis and Wijkström attempt to measure the extent to which these discussions have resulted in the avoidance of a formal WTO dispute that requires adjudication by the dispute settlement organs. They decide that 'it is hard to conclude, due to lack of hard numbers, to claim outright that the Committee is effective in resolving trade concerns.' This is perhaps understandable given that the Committee, made up of delegates from the WTO Members' missions, is unlikely to have the collective expertise in regulatory and related scientific and technical concerns to play such a role on a major scale. Nor, on Mavroidis' and Wijkström's account, does the Committee appear to have developed close relationships to other entities with the relevant expertise, such as international and regional standardization organizations.

Mavroidis and Wijkström suggest that the TBT Committee's approach is pragmatic rather than legal. At the same time, the Committee has more and more become engaged in rule-making exercises, for example determining criteria that would apply to the activities of bodies recognized as international standards bodies for purposes of the TBT requirement that WTO Members use international standards as a basis for their regulations. As is discussed by Markus Wagner in Chapter 7 on harmonization, and referred above, the Appellate Body has given a certain legal effect to decisions of the TBT Committee, considering them to be subsequent agreements between the parties within the meaning of the Vienna Convention on the Law of Treaties 31(3)(a), and thus having a potentially significant weight in the interpretation of the TBT Agreement.

That the TBT Committee can have such an impact through its own rule-making or standards-making activity raises issues concerning the transparency of the Committee's own deliberation and decision practices, a matter that Mavroidis and Wijkström do not address.

Chapter 9, by Joel Trachtman, concerns the interaction of Preferential Trade Agreements (PTAs) with TBT norms. As Trachtman notes, harmonization requirements or mutual recognition arrangements that apply between members of a PTA may raise MFN issues under GATT and the TBT Agreement, to the extent that the same treatment is not offered to all other similarly-situated WTO Members. Considering the jurisprudence of the Appellate Body, above all in *Turkey – Textiles*, Trachtman considers the extent to which Article XXIV of the GATT might be used to justify departures from MFN in regional agreements in respect of TBT-type norms; he concludes that the jurisprudence suggests some uncertainty in this regard. Trachtman also discusses the *Brazil – Retreaded Tyres* case, where Brazil's measure was held by the Appellate Body to fail the requirements of the chapeau of Article XX because Mercosur countries were exempt from its prohibition on imports; this exemption derived from the requirement on Brazil to implement a ruling of a Mercosur dispute panel, which had held that the prohibition was a violation of Mercosur obligations. As Trachtman implies, the justifiability of the exception was arguably more appropriately addressed under Article XXIV of the GATT than the chapeau of Article XX, and the Appellate Body never reached the issue of an Article XXIV justification.

Trachtman notes that mutual recognition arrangements may be permissible under WTO law, even if they are extended to only some sub-sets of WTO Members, as long as the choice of this group is based on a legitimate regulatory distinction, for example the fact that the group in question have domestic regulations or conformity assessment that satisfy the level of protection of the importing country. Selection on this basis may be consistent with MFN, whereas inclusion based solely on whether a WTO Member is a member of a PTA would not (subject to the applicability of Article XXIV of GATT).

Chapter 7 by Markus Wagner considers the feature of the TBT Agreement that arguably most pushes the WTO regime in the direction of positive integration: the requirement in Article 2.4 that WTO Members use international standards as a basis for their regulations, where such standards exist, are relevant and not inappropriate or ineffective. As Wagner observes, there are important legitimacy concerns about giving such a strong normative effect to international standards: 'Some of the bigger concerns with the use of standards on the international level are the level at which a standard may be set, the inability of developing

countries in the process of creating such standards [footnote omitted] and the potential lack of access to important decision-making processes by the relevant interested groups.’ Given these concerns, Wagner argues that ‘it would be incumbent on the adjudicatory institutions within the WTO to serve as a meaningful review mechanism.’

However, as Wagner explains, in its jurisprudence, at least until the *US – Tuna II* ruling, the Appellate Body did not display much sensitivity to these legitimacy concerns, for example, in the *EC – Sardines* case, rejecting the notion that only standards agreed by consensus are international standards and suggesting that due process and participation in the creation of international standards was not a condition for requiring under Article 2.4 that WTO Members use them as a basis for their technical regulations. Moreover, the Appellate Body developed what appeared to be a quite strict view of the relationship between international standards and technical regulations required by Article 2.4 of the TBT Agreement, thus limiting the ability of WTO Members to make considered decisions about how to adapt international standards to their own regulatory needs.

In the *US – Tuna II* decision, as Wagner notes, there is at least some move in the direction of taking into account the legitimacy concerns with international standards. The Appellate Body took into account a TBT Committee Decision on procedures for the development of international standards in interpreting the requirement in the TBT Agreement that an international standard be promulgated by a body ‘open’ to the standardization bodies of all WTO Members. Thus, criteria of transparency, openness, impartiality and consensus, effectiveness and relevance, coherence and the concerns of developing countries, would all have to be taken into account in determining whether a standard is suitable to have the normative effect envisaged by Article 2.4 of the TBT Agreement.

Helen Churchman in Chapter 8 explores in depth the role of Mutual Recognition Agreements (MRAs) and equivalence agreements in reconciling the right to regulate with trade liberalization. Churchman distinguishes MRAs from equivalence agreements in the following manner: in the case of MRAs the importing country recognizes conformity assessment undertaken by the *exporting* country based on the *importing* country’s standards and regulations, while in an equivalence agreement, conformity with the exporting country’s standards and regulations is recognized as adequate to satisfy the importing country’s regulatory concerns, despite differences in regulation between the exporting and importing country. As Churchman notes, the TBT Agreement encourages but does not require the recognition of equivalence. Hence, according to

Article 2.7 of the TBT Agreement: 'Members shall give positive consideration to accepting as equivalent technical regulations of other Members if these regulations differ from their own, provided they are satisfied that these regulations adequately fulfil the objectives of their own regulations.' The language with respect to recognition of conformity assessment (the subject matter of MRAs) is, however, stronger. Thus, Article 6.1 provides that 'Members shall ensure, whenever possible, that results of conformity assessment procedures in other Members are accepted, even when those procedures differ from their own, provided they are satisfied that those procedures offer an assurance of conformity with applicable technical regulations or standards equivalent to their own procedures.'

Churchman provides an inventory of existing MRAs and equivalence agreements, bilateral, regional, and between private conformity assessment bodies. She notes that crucial to these arrangements is trust or 'confidence' in the adequacy of other countries' conformity assessment bodies and/or regulations and standards (in the case of equivalence agreements). As Churchman explains here, a crucial role is played by certain international bodies, such as the International Laboratory Accreditation Cooperation (ILAC), which accredit laboratories and other testing facilities, in accordance with international standards for conformity assessment bodies. Churchman notes that the WTO has 'encouraged' the use of Supplier's Declarations of Conformity (SDoC) as an alternative to MRAs and equivalence. She indicates the difficulty of monitoring and enforcing the veracity of such declarations; SDoCs are only likely to be an effective regulatory tool where there are 'strong supporting structures of product liability regulation and market surveillance ...'.

In Chapter 10, Graham Mayeda addresses the many challenges that implementing the TBT Agreement poses for developing countries, including the capacity-building needs that have already been noted. Mayeda questions the effectiveness of the TBT Agreement in preventing barriers to market access for developing country products that are created by voluntary standards as opposed to mandatory technical regulations (despite the fact that the TBT Agreement includes a Code of Good Practice and requires that WTO Members take reasonable measures to ensure that private standardization bodies conform to that Code). Mayeda presumes, based on the nature of recent TBT disputes such as *US – Clove Cigarettes* and *US – Tuna II*, that developing countries will have an interest in a rather less than more deferential standard of review with respect to domestic regulations. In the future, as developing countries themselves are forced to justify their regulations in WTO dispute settlement and become increasingly concerned with protecting their

societies against dangerous and unhealthy products, this perspective may change, especially given the limited resources many developing countries have to justify their measures in dispute settlement through science and extensive regulatory analysis.

The remaining chapters of the book address particular aspects of regulatory and standardization activities and their TBT implications. Cardwell and Smith examine the trend toward ‘climate-friendly’ labeling schemes, where the label reflects the carbon footprint of the product throughout its lifecycle, including the climate change externalities created by process and production methods. As the authors note, some of these labels involve governmental action while most are private initiatives by NGOs or even individual companies.

One of the difficulties presented by some of these labeling schemes is that they base the ‘climate-friendly’ designation on one set of externalities while avoiding others. Some schemes will exclude products shipped by air, for instance, because of the emissions produced through such transportation, while not considering that the positive carbon footprint of the products at the production and processing stages may more than compensate. This, according to the authors, illustrates the need for some kind of meta-standard or methodology that would allow consumers to be meaningfully guided by the labels in question, and to prevent hidden protectionism.

In their examination of the application of the TBT disciplines to climate-friendly labeling schemes the authors note that after the *US – Tuna II* rulings (Panel and Appellate Body), TBT disciplines will clearly apply to climate-friendly labels whether they focus on carbon externalities from the product itself or from its production and processing methods or both. Cardwell and Smith consider that there is some complexity in identifying the objectives of ‘climate-friendly’ labels for purposes of applying TBT disciplines such as those in Article 2.2, which requires that a measure not constitute an unnecessary obstacle to trade. For instance, some labels may incorporate corporate social responsibility objectives and not focus exclusively on climate externalities. At the same time, I would note, there is little doubt that climate mitigation itself would be considered a legitimate objective under Article 2.2 of the TBT Agreement; in obiter dicta in the *Brazil – Retreaded Tyres* case, the Appellate Body suggested not only that climate change is a legitimate regulatory concern but one where particular deference might well be afforded to Members’ regulatory interventions.

Of course, as the authors note, since these various schemes operate at different points along what might be called the public/private or governmental/non-governmental spectrum, there will be important issues

of which schemes and which aspects can be considered technical regulations and which voluntary standards. Of course, as already discussed and elaborated also in this chapter, the approach of the Appellate Body in *US – Tuna II* is that any mandatory governmental element, even for purposes of ensuring the veracity of the claims made by a purely private, voluntary level, qualifies as a ‘technical regulation.’

The authors note that the use by some producers of ‘climate-friendly’ labels may lead to greater consumer awareness of climate issues and thus lead to pressure on others to adopt ‘climate-friendly’ labeling. Such phenomena, as well as the cognitive impact on consumers of the noted multiplicity of labels with different meanings or standards for ‘climate-friendliness,’ suggest the value of future research that is based on the behavioral economics of consumer information.⁴

This direction for future research is also indicated in the chapter by Voon, Mitchell and Gascoigne on consumer labeling. They explore the controversy over Thailand’s proposals for warnings about the risks of alcohol consumption, which would entail the production of different warnings, varied by every thousandth package, and taking up a considerable amount of the surface area of the package (30 to 50 per cent). Some WTO Members have expressed concerns in the TBT Committee about the compliance costs producers will face in creating such labels. At the same time, Thailand has explained that rapidly increasing alcoholism rates have created a significant burden on its health care scheme. Another issue has been that some of the labels suggest that any level of alcohol consumption leads to serious health risks while it is argued that moderate consumption can be healthy. As the authors note, ‘This example highlights the crucial importance of empirical evidence and scientific studies in assessing or defending a product labeling requirement intended to promote health.’ In order to determine the effectiveness or otherwise of the measures in achieving Thailand’s stated objectives, one would need to know more about the behavioral effect of the labels on Thai consumers who are the measure’s target. In other words, does it have the effect of altering their drinking habits? If a large number of these consumers have a tendency to become rapidly addicted to alcohol, then a warning that suggests that health risks occur through immoderate consumption may be useless or misleading to those consumers as to the risks they face by consuming alcohol at all. The authors note, however, that measures such

⁴ See generally R. Howse, ‘Consumer Labeling on Trial at the WTO: Misunderstanding the Behavioral Law and Economics of Consumer Labeling’, in S. Schneider, et al., eds, *Essays in Honor of Ernst-Ulrich Petersmann*, Brill, 2013.

as mandatory labeling of health risks typically have dual aims of informing consumers and attempting to influence their preferences away from the consumption of products that pose risks to health. An example of a labeling-type measure where the latter purpose predominates is Australia's tobacco plain-packaging regulations, which are aimed at making cigarettes a less visually attractive product.

The authors cite the *US – COOL* case as an instance where TBT disciplines may actually encourage the provision of better information to consumers. There, as they note, the Appellate Body held that the extensive record-keeping requirements imposed in the US scheme for national origin labeling of meat imposed a detrimental impact on imports that was not justified by the aim of consumer information, as much of the required documentation (dealing with the country in which each stage of production and processing occurred) was not needed in order to verify the limited disclosures on the package. The US proposal for implementing the *US – COOL* ruling bears out the authors' point: the US intends to keep the requirement that records be kept concerning each stage of processing and production and where it occurs, but to pass this information on to the consumer on the label, thus rendering the record-keeping requirements justifiable in terms of the consumer-information goals of the scheme as a whole.

Branislav Hazucha's case study in Chapter 15 of standards and technical regulations related to trade in information and communication technologies is an important reminder of the unstable frontier between trade in goods and trade in services (in the latter case, the GATS has only a very rudimentary equivalent to TBT) and that standards and technical regulations with respect to goods may impact on trade in services. He gives a number of examples, such as DVD/CD players and media players for reading material such as Kindle and Nook, where there are incompatible standards that tie the owner of the device to particular service providers. Hazucha also examines the possible anti-competitive and trade-restrictive impact of the incorporation of proprietary technologies into international standards. More generally, Hazucha notes: 'Some may question whether a standard that has been developed in a closed environment and in secret by a private standard-setting consortium, and which has been adopted by an international standard-setting organization, satisfies the requirements of transparency, openness, impartiality and consensus for the preparation and adoption of international standards required by the regime under the TBT Agreement [footnote omitted].'

Chapter 14 by Alessandra Arcuri on private standards emphasizes the importance of private standardization initiatives in areas such as sustainability, social responsibility (fair trade) and food safety. Arcuri also notes

initiatives for meta-regulation, which are efforts to ensure transparency and consistency in the development of private standards, much needed given the proliferation of different schemes, for example in the climate area, as discussed in the previous chapter. Here, Arcuri mentions in particular the Social and Environmental Accreditation and Labeling Alliance and the role of the International Organization for Standardization (ISO) in establishing standards for certification and accreditation bodies. Arcuri notes the parallelism between the TBT norms applicable to mandatory 'technical regulations' and the Code of Conduct applicable to voluntary standardization, while of course bearing in mind that in the latter case state responsibility is limited to the obligation to take reasonable measures to ensure that non-governmental bodies adhere to the code.

Lukasz Gruszczynski's case study in Chapter 12 of the EU chemicals regulatory framework (REACH) complements the Mavroidis and Wijkström chapter on the TBT Committee. Gruszczynski examines the role of the Committee in shaping the ultimate EU regulation through the discussion of certain WTO Members' concerns with the original proposals from the Commission. He concludes that the Committee was not particularly effective as a vehicle for producing changes to the proposals based upon Members' concerns about trade-restrictiveness. However, discussion in the Committee did result in greater awareness and understanding of how the REACH framework would work in practice and affect other WTO Members. This conclusion reinforces the findings of Mavroidis and Wijkström that discussion of Members' measures in the Committee is valuable for information exchange but, the evidence suggests, does not function as a political or diplomatic alternative to dispute settlement under the DSU.