THE PRECAUTIONARY PRINCIPLE’S EVOLUTION
IN LIGHT OF THE FOUR SPS DISPUTES

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TRADE-RESTRICTIVE MEASURES AND PRECAUTION

The introduction of precautionary measures in multilateral environmental agreements which contain trade-restricting measures is a new phenomenon with wide-ranging legal ramifications due to the fact that they may be in conflict with certain provisions of related WTO agreements. The Cartagena Protocol on Biosafety to the Convention on Biological Diversity (BP) which is administered by the UN Environment Programme has been adopted in January 2000 and it entered into force in September 2003. It is considered by many authors as having an historical importance because it has gone further than any other global agreement in integrating the precautionary principle in some of its operational articles (we shall use the terms ‘precautionary principle’ and ‘precautionary approach’ in a generic sense without engaging into the debate about the difference between the two). These relate to measures a member country may take in order to limit or ban the importation of a certain category of genetically modified (GM) products, namely living modified organisms such as seeds, as well as raw commodities such as GM potatoes or cotton. They may be contested under the rules of the WTO agreements; the WTO in fact, as we shall see, is very reluctant to accept precautionary measures which may represent trade barriers.

An important role in this context is played also by a third organization, the Codex Alimentarius, a joint FAO/WHO body which represents the international reference point for trade in food products. It has achieved a considerable importance through the creation of the WTO thanks to its inclusion in two WTO agreements, namely its explicit specification as the relevant standard for food safety in the Agreement on the Application of Sanitary and Phytosanitary Measures (SPS), and implicitly also in the Agreement on Technical Barriers to Trade (TBT). The Codex regulates trade in all food and drink products, but we shall limit ourselves here to the concerns of environment-related food safety, more specifically to GM products. It should be emphasized that the regulation of trade in raw GM food products is complicated by the fact that the task of developing and implementing import regulations in this product category has been put under the authority of both the Biosafety Protocol and the Codex Alimentarius.

Although precautionary measures have been discussed extensively at the Codex, a consensus on the operationalization of the precautionary principle looks unlikely in the near future. In the case of scientific uncertainty, the Codex will not establish a standard but will consider a less formal code of practice, and even that solution will be applied only if it is “supported by the available scientific evidence.” Clearly, precautionary measures for risk management remain “highly contentious” at the Codex Alimentarius.

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We should add that this divide between two UN sister organizations is made more serious by the observation that the precautionary principle can truly be considered as representing one of the most important driving forces in the development of global environmental standards. Our policy and legal and analysis will show the roots of this division, as well as some of its implications and ramifications, especially with regards to some of the key WTO agreements. We are witnessing at present a considerable degree of interdisciplinary effervescence around issues related to the precautionary principle such as scientific uncertainty, risk assessment, risk management, and the justification of import restrictions for reasons of environmental protection and public health. These precautionary regulatory measures may clash with exporting countries’ rights to market access that they have acquired under the WTO agreements. This article focuses on the relationship between these two sides of the trade policy spectrum, and on the influence exerted by the WTO’s Dispute Settlement Body (DSB).

The DSB consists primarily of two entities: on one hand there are the Panels which are established ad hoc and separately for each individual dispute, and on the other hand the permanent Appellate Body. In both cases the ruling is made by three appointed experts. It should be stressed here that the functioning of the DSB is of greatest importance for the analysis of the ways and means which characterize the functioning of the WTO as a multilateral trade system. Many aspects of the dispute settlement process are not transparent, but at least the Reports of all cases are made freely accessible on the Web, usually a few months after the ruling. It should furthermore be pointed out that the functioning of the WTO’s DSB, which represents the very essence of the organization’s nature, is highly procedural and at the same time much faster and arguably more predictable than other international courts or tribunals. Most importantly, contrary to most jurisdictions in the international public arena, the DSB is compulsory for WTO members, that is they essentially do not have the liberty of choosing a different dispute settlement mechanism for disputes within its mandate.

**THE GATT AND THE PRECAUTIONARY PRINCIPLE**

An exporting country’s rights of market access are qualified under the WTO’s General Agreement on Tariffs and Trade 1994 (GATT) by certain general exceptions which are dealt with in the much-cited Article XX. It specifies exceptions to the provision of compulsory market access, while at the same time it imposes severe limits on an importing country’s WTO-compatible justifications for restricting or banning access to its markets. These exceptions are very narrowly defined, most importantly, perhaps, they are subjected to what is called the necessity test. Essentially this means that the importing country must convincingly demonstrate in the case of a dispute before the WTO’s DSB that there are no other measures available which are less trade-restrictive than the measure it has chosen, and that the

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objectives of the trade restriction or ban are justified because it is based on fundamental values.

Our discussion of the relationship between the GATT and the precautionary principle is based on the fundamental premise that in international environmental law precautionary measures are commonly integrated in the agreement’s text as a right or even an obligation regarding actions that a sovereign government may take in the fulfillment of its environment-related objectives and stewardship. In WTO law on the hand, the same principle represents an exception, i.e. an option offered to member states not to implement certain provision or to adjust them accordingly, and this option is subjected to the reasoning of the panel or the Appellate Body appointed to make the ruling.

It is important to realize that the DSB has never made a pronouncement on the application or the operationalization of the precautionary principle through the GATT. Nevertheless, the DSB had an opportunity in at least two disputes so far to make such a pronouncement. In all fairness, however, one may well argue that neither case is really suitable for making a general declaration of this kind. The first instance concerns a dispute opposing India and the US, where the former invoked the precautionary principle with regards to the balance of payments. India in fact affirmed that quantitative import restrictions ought to be maintained out of precaution in order to prevent a destabilization of its balance of payments. In order to justify its claim, India claimed that the precautionary principle is integrated in GATT Article XVIII.11 through an interpretative note. The Panel did not accept this precautionary argumentation. That is probably a good thing because otherwise it might have skated on thin ice with regard to a more general policy on precaution.

The Asbestos dispute between the European Communities (which represent France at the WTO) and Canada is the second GATT dispute where the Panel and the Appellate Body were asked to rule on the application of the precautionary principle. Canada recognizes in its submission that asbestos is potentially hazardous but it considers that a complete ban of asbestos products is disproportionate with regard to the legitimate objective of protecting public health. Canada’s argument is very clear: if France’s position were to be adopted, then every member would have the possibility of completely banning natural resources that may potentially be dangerous, rather than using an approach which is based on a responsible risk management strategy that is determined by their utilization.

As far as the precautionary principle invoked by France is concerned, neither the Panel nor the Appellate Body have taken a position. This makes sense in this context indeed since the French asbestos ban is not based at all on scientific uncertainty but rather on the scientifically undisputed knowledge of the harmful nature of asbestos fibers. That is why the Appellate Body based its ruling on strictly economic grounds: it put the burden of proof on Canada to show that consumers are willing to pay the same price for chrysotile asbestos products as for alternative products (based on PCG fibres), and it concluded that Canada has not demonstrated

8 European Communities - Measures Affecting Asbestos and Asbestos-Containing Products - Report of the Panel, 18 September 2000, WT/DS135/R.
9 Ibid., para. 3.12.
that the two kinds of products are equivalent in the perception of the consumers.\textsuperscript{10} Nevertheless, this dispute merits to be remembered in the context of the precautionary principle thanks to the fact that the rulings provides some guidance about the DSB’s way of thinking on scientific uncertainty in trade disputes. Indeed, it seems to implicitly provide some space for the precautionary principle by declaring that the acquisition of scientific certainty on all aspects of an issue is not required to justify the exceptions listed in the above-mentioned GATT Article XX.\textsuperscript{11}

In the relationship between WTO agreements and precautionary concerns, the issues at stake are fundamentally different from traditional trade disputes which tend to be centered on the violation of the non-discrimination rules contained in the GATT Agreement. These rules consist first of all in the obligation of treating equivalent products offered by different exporting countries the same way (the general Most-Favored-Nation principle of Article I), and secondly in the obligation for WTO member countries to treat imports the same way as equivalent nationally produced goods (the National Treatment principle articulated in Article III).

WTO Agreements use the term « like » products, in fact there is a considerable debate on the exact meaning of this term. Disputes over precaution or scientific uncertainty are of a different nature, they tend to make national borders irrelevant because the same measures are usually applied on nationally products as well. Borders are a key issue, nevertheless, with regards to the determination of sovereign regulatory powers that a state has the right to exercise as a WTO member, for instance with regard to the use of beef hormones, the importation of GM food, or the national legislation on GM seeds.

**PRECAUTION VERSUS PREVENTION**

Before we tackle the main issue of interest here, namely the precautionary principle’s status at the WTO, we shall briefly touch upon a fundamental question in this context, namely the distinction between precaution and its sister concept prevention. We believe that there is a considerable amount of confusion regarding the question of what is really the dividing line between precaution and prevention. Scientific certainty and confidence in scientific evidence relate to the principle of prevention, not to precaution. This is of fundamental importance with regard to the treatment of precautionary trade measures under the WTO agreements because preventive import restrictions based on an adequate scientific understanding of the risks involved are accepted under the provisions of the SPS Agreement as long as they fulfill the risk assessment procedures of its Article 5.

This seemingly simple conceptual question has implicitly or explicitly preoccupied the authors of countless articles and books on the precautionary principle and scientific uncertainty. The internationally respected expert on environmental law and risk analysis Professor Nicolas de Sadeleer has authoritatively clarified this point by stating that instead of assuming a clear dividing line we need to be looking at those two concepts as two ends of a spectrum:


\textsuperscript{11} *Supra* (note 8), para. 8.221
The distinction between the preventive principle and the precautionary principle rests on a difference of degree in the understanding of risk. Prevention is based on certainties: it rests on cumulative experience concerning the degree of risk posed by an activity (Russian roulette, for example, involves a predictable one-in-six chance of death). Therefore, prevention presupposes science, technical control, and the notion of an objective assessment of risks in order to reduce the probability of their occurrence. Preventive measures are thus intended to avert risks for which the cause-and-effect relationship is already known (...).

Precaution, in contrast, comes into play when the probability of a suspected risk cannot be irrefutably demonstrated. The distinction between the two principles is thus the degree of uncertainty surrounding the probability of risk. The lower the margin of uncertainty, the greater the justification for intervention as a means of prevention, rather than in the name of precaution. By contrast, precaution is used when scientific research has not yet reached a stage that allows the veil of uncertainty to be lifted. ¹²

As we have seen above, the Asbestos case is related to public health controversies, but not to the precautionary principle because the harmfulness of asbestos fibers is not in doubt. Preventive measures are well established in WTO law, and they allow to justify an import ban on products whose hazardous or dangerous nature is established, provided the WTO disciplines such as the above-mentioned principles of non-discrimination are fulfilled.

THE FOUR SPS CASES: WHAT IS THEIR IMPACT ON THE WTO’S RECOGNITION OF THE PRECAUTIONARY PRINCIPLE?

After looking at these general trade concerns, let us focus now on more specific aspects of the WTO’s perspective on precaution which are essentially centered around the SPS Agreement. The WTO case law presently contains four disputes based on the SPS Agreement which illustrate well the diversity of stakes and measures that it covers: public health in the first instance (EC-Hormones), animal health in the second (Australia-Salmons), and plant protection in the third and fourth (Japan-Agricultural Varietals and Japan-Apples). Each of these cases makes a contribution to the precautionary principle’s evolution at the WTO.

1. EC-Hormones

The Hormones case is arguably the oldest still essentially unresolved trade conflict, it goes back to a trade quarrel between the European Union and the US in the late 1980s. At that time the US government sought to achieve the establishment of a technical committee on trade barriers at the GATT with the task of evaluating the scientific justification of banning the use of beef hormones. ¹³ As it was still possible under the old GATT Agreement, the EC vetoed the establishment of such a committee. This experience has probably contributed a great deal to the decision to


negotiate the SPS Agreement as part of the Uruguay Round. Nevertheless, the issue of treating cattle with non-therapeutic growth hormones is still not resolved.\(^{14}\) The European Communities' legal instruments which are attacked at the DSB by the US as well as by Canada consists of several EU Directives which ban the importation as well as the sale of meat and meat products which have been treated with certain non-therapeutic hormones. Two arguments have been advanced by the EU. At the scientific level first of all, the Europeans fear an increase of cancer cases. Secondly, the decision makers have taken into consideration the public's aversion towards this kind of food product.

This dispute may be the one which has prompted the DSB to elaborate the most significant ruling so far on the precautionary principle's status at the WTO. It is interesting to note that the *Hormones* ruling has achieved this result in spite of the fact that on the whole it is actually rather evasive with regards to a clarification of the precautionary principle’s implications. The ruling is noteworthy simply because all other rulings are even less useful in providing this much-needed guidance. The fact that the Appellate Body has considered as “important” certain aspects of the relationship between this principle and the SPS Agreement further enhances its importance.\(^{15}\)

Both entities of the DSB consider that the precautionary principle does not at this time enjoy the status of a customary law, and furthermore that only once this has been achieved can it be used in the interpretation of SPS Articles 5.1 and 5.2. However, they add, even once it should have reached that status, it will not override these two Articles.\(^{16}\) The Panel stressed that the EC have purposely chosen not to base its arguments on it. The reason for that strategic decision is very simple: the EC’s fundamental objective was to obtain the WTO’s acceptance of a *permanent* ban on non-therapeutic beef hormones, they did not want to accept the interim nature of the SPS Agreement’s precautionary provisions spelled out in Article 5.7.\(^{17}\)

In this ruling the Appellate Body made at least three important statements which - taken together – arguably provide the precautionary principle with an enhanced status in spite of the ambiguity surrounding the precautionary principle in general and in WTO law in particular. We may indeed conclude, in view of the intense debate in several academic disciplines on the status of the precautionary principle, that the 1998 *Hormones* Appellate Body Report represents a milestone in the direction of a wider recognition of precautionary approaches at the WTO.

To begin with, the Appellate Body has explicitly recognized that the precautionary principle is incorporated in the SPS Agreement: “the precautionary principle indeed finds reflection in Article 5.7 of the SPS Agreement.”\(^{18}\) We can clearly see a certain embarrassment in the body’s refusal to explain what the


\(^{17}\) http://www.wto.org/english/docs_e/legal_e/legal_e.htm#sanitary

precautionary principle really means for the WTO. This statement shows the limits as
to how far the DSB will go at this point in time, we can see that from the fact that it
mentions that the precautionary principle has a “specific meaning.”19 We must
assume that the notion of specificity as it is used here refers to the above-mentioned
transitory nature of precaution as it is expressed in Article 5.7. Unfortunately, no
clarification is provided regarding the sense or meaning of this specificity.

Secondly, the SPS Agreement’s heavy emphasis on scientific evidence and
risk assessment procedures traditionally relies on quantitative results. The Appellate
Body has recognized, however, that in some circumstances qualitative, rather than
quantitative methods must be accepted: “we must note that imposition of such a
quantitative requirement finds no basis in the SPS Agreement.”20

Finally, traditional risk assessment techniques tend to be rooted in the majority
opinion or judgement of scientists in a given discipline or specialty. A more prudent or
precautionary outlook, however, will also take into consideration minority views of
scientists that might in some cases conflict with the majority view. In Hormones the
Appellate Body provides now for the possibility that a member country can take into
consideration the arguments of a scientific minority during in the evaluation of a risk.
It points out that Article 5.1 does not require a risk assessment based on the majority
opinion and it creates an interesting bridge between precaution and prevention by
opening the door for the consideration of scientific uncertainty: “... the very existence of
divergent views presented by qualified scientists who have investigated the
particular issue at hand may indicate a state of scientific uncertainty.”21

In the end, however, the Appellate Body has ruled that the EC’s ban of beef
hormones does not respect the provisions of the Agreement in spite of this
apparently rather broad support for precaution in the SPS Agreement. Should we
conclude that regardless of these three points which tend to allow an importing
country to take sanitary or phytosanitary measures based on a precautionary
reasoning the DSB will come down on the side of so-called sound science whenever
it is faced with a specific decision? There may be some support for this conclusion in
the Body’s rather murky and inconclusive discussion of four terms with a similar
meaning: potential, potentiality, possibility and probability.22 If the Appellate Body’s
not very convincing philosophizing is to be interpreted in the sense that the possibility
of an event cannot be taken into consideration, only its quantifiable probability, then
we would be entrenched squarely in the domain of traditional preventative measures.
In that case we would have to conclude indeed that the evolution of the precautionary
principle’s statute would actually have suffered a setback, and that this ruling makes
it more difficult for an importing country to justify precautionary measures in a case of
scientific uncertainty. The Hormones ruling is seen by many observers as a potential
 harbinger for future trade disputes over genetically modified food products with far
higher economic and political stakes and sensitivities on both sides of the Atlantic.

19  Ibid., para. 120.
20  Ibid., para. 186.
21  Ibid., para. 194.
22  Ibid., para. 184: ...What needs to be pointed out at this stage is that the Panel's use of
"probability" as an alternative term for "potential" creates a significant concern. The ordinary
meaning of "potential" relates to "possibility" and is different from the ordinary meaning of
"probability". "Probability" implies a higher degree or a threshold of potentiality or possibility.
It thus appears that here the Panel introduces a quantitative dimension to the notion of risk.
2. **Australia-Salmon**

The second WTO dispute related to sanitary measures relates to an Australian regulation banning the importation of certain Salmon species which have not undergone a specific treatment to prevent certain diseases. Canada has contested these measures in early 1997. Contrary to the European strategy in the *Hormones* case, the Australians have not invoked the precautionary principle to justify their measure. The Appellate Body’s report is nevertheless interesting in our context for different reasons.

The Appellate Body recalls that the risks must be verifiable as stated in *Hormones*, and that the risk assessment presented by Australia is not in conformity with SPS Article 5.1 because it is based on theoretical uncertainty.\(^{23}\) This conclusion regarding the flaws in Australia’s risk assessment has major consequences. The Appellate Body considers that the incompatibility with Article 5.1 represents an alarm sign which indicates a hidden trade restriction.\(^{24}\) This means that like in the *Hormones* case, the sanitary measure has been declared as incompatible with WTO law primarily due to a lack of an objective risk assessment. The Appellate Body furthermore criticizes Australia for incoherence in its sanitary policy: the government applied these SPS measures to Salmons but not to gold fish in spite of the fact that their situation is identical, thus violating SPS Article 5.5.\(^{25}\)

The Appellate Body, went a step further in this 1998 ruling and declared that an SPS measure cannot have the objective of avoiding the occurrence of a possible risk but only of a probable one:

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\ldots\text{we maintain that for a risk assessment to fall within the meaning of Article 5.1 and the first definition in paragraph 4 of Annex A, it is not sufficient that a risk assessment conclude that there is a }\text{possibility [DSB’s italics] of entry, establishment or spread of diseases and associated biological and economic consequences. A proper risk assessment of this type must evaluate the }\text{"likelihood", i.e., the }\text{"probability", of entry, establishment or spread of diseases and associated biological and economic consequences as well as the }\text{"likelihood", i.e., }\text{"probability", of entry, establishment or spread of diseases according to the SPS measures which might be applied [DSB’s italics].}^{26}\]

This citation strengthens the rigid but erroneous conceptual notion of a distinct separation between precaution and prevention and it does not really allow for the application of de Sadeleer’s distinctive criterion of the degree of uncertainty surrounding the probability of risk. The strict distinction which is made here implicitly between precaution and prevention has arguably been softened somewhat in the *Hormones* case by the opening it has provided for the consideration of scientific uncertainty, but this dichotomy clearly continues to preoccupy the Dispute Settlement Body.

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\(^{24}\) *Ibid.*, para. 166.

\(^{25}\) …each Member shall avoid arbitrary 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.

\(^{26}\) *Ibid.*, para. 123.
3. Japan-Agricultural Varietals

The third SPS dispute which was ruled upon by the Appellate Body concerns the 1999 Japanese ban on the importation of various agricultural products (Varietals) from the United States. In this case the Reports of both the Panel and the Appellate Body do not provide much new information; they are essentially limited to a confirmation of those underlying perspectives which have guided the previous two cases. Japan considered that SPS Article 2.2 should be interpreted in light of the precautionary principle but the Appellate Body applied the same reasoning as in Hormones in this regard. Thus the Appellate Body has (again) shunned the debate on the fundamental issues underlying precautionary measures in light of potential risk and scientific uncertainty.

We may hypothesize that the fundamental reason for the DSB’s unwillingness to spell out more clearly what it considers to be a sovereign government’s trade-related rights and obligations in the fulfillment of its duties with regard to the protection of the environment and public health is very simple: the nature of scientific uncertainty is such that dealing with it is necessarily unpredictable in many instances. It may be argued that such unpredictability could threaten the claim of predictability on which the WTO has based much of its credibility and legitimacy. The DSB’s interpretation of SPS Article 5.7 in the Varietals case undoubtedly does take the WTO some further distance from a precautionary approach; in spite of the fact that WTO law recognizes, as we have seen, the precautionary nature of this Article within certain limits, the Appellate Body de facto further narrowed these limits. It did so by expressing concern that an interpretation that is relatively broad and flexible regarding an importing country’s obligation to not maintain SPS measures without scientific proof would deprive the Article of its meaning:

Finally, it is clear that Article 5.7 of the SPS Agreement, to which Article 2.2 explicitly refers, is part of the context of the latter provision and should be considered in the interpretation of the obligation not to maintain an SPS measure without sufficient scientific evidence. Article 5.7 allows Members to adopt provisional SPS measures “[i]n cases where relevant scientific evidence is insufficient” and certain other requirements are fulfilled. Article 5.7 operates as a qualified exemption from the obligation under Article 2.2 not to maintain SPS measures without sufficient scientific evidence. An overly broad and flexible interpretation of that obligation would render Article 5.7 meaningless [italics added].

Are these worries really justified? That seems doubtful since the concept of scientific risk assessment is sufficiently demanding to prevent the possibility of abuses based on case law. Furthermore, as we shall see in the last SPS case so far, the DSB has made it quite clear what it considers to be the conditions that need to be fulfilled in order to allow the consideration of precautionary measures.

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28 See Ibid, para. 89.
29 Ibid., para. 80.
4. Japan-Apples

SPS Article 5.7 has the merit of being unquestionably one of the most cited ones in the more than five hundred pages of the WTO’s Legal Texts. It is in particular at the center of the fourth SPS case Japan – Apples. The Panel develops in this Report perhaps the DSB’s most exhaustive analysis so far of the four conditions which are mandatory in order for the WTO to accept precautionary measures on a temporary basis. They represent essentially an editorial redrafting of Article 5.7, and it does in fact make it easier to understand. In view of the twisted and contorted language of numerous passages in the WTO’s legal texts one would hope that future Panels continue this very useful exercise! The Panel’s clarification of the paragraph clearly shows just how limited and constrained the possibilities for the application of precautionary measures are in the trade regime.

The following four conditions must all be met concurrently: (1) relevant scientific evidence is insufficient; (2) the measure is adopted on the basis of available pertinent information; (3) the importing country seeks to obtain the additional information necessary for a more objective assessment of risk; and (4) it reviews the measure accordingly within a reasonable period of time.\footnote{Japan – Measures Affecting the Importation of Apples, Report of the Panel, 15 July 2003, WT/DS245/R para. 8.312}

What is of a particular interest in the Japan-Apples case is the treatment of the notion of scientific uncertainty by the Appellate Body. Scientific uncertainty represents the \textit{conditio sine qua non} for the invocation of precaution. But in spite of its fundamental significance for the concept of precaution, the WTO’s authoritative body considers that the criterion of scientific uncertainty does not \textit{per se} justify the application of SPS Article 5.7. It should be added here that Japan challenged the Panel’s statement that Article 5.7 is intended to address only "situations where little, or no, reliable evidence was available on the subject matter at issue"\footnote{Ibid., para. 8.219.} because this does not provide for situations of "unresolved uncertainty". Japan drew a distinction between "new uncertainty" and "unresolved uncertainty"\footnote{Japan’s appellant’s submission, para. 101.}, arguing that both fall within Article 5.7. According to Japan, "new uncertainty" arises when a new risk is identified; Japan argued that the Panel’s characterization that "little, or no, reliable evidence was available on the subject matter at issue" is relevant to a situation of "new uncertainty". For Japan, the risk of transmission of fire blight through apple fruit relates essentially to a situation of "unresolved uncertainty". Thus, Japan maintained that, despite considerable scientific evidence regarding fire blight, there is still uncertainty about certain aspects of transmission of fire blight. However, the reasoning of the Panel was tantamount to restricting the applicability of Article 5.7 to situations of "new uncertainty" and to excluding situations of "unresolved uncertainty".

The Appellate Body, through a pronouncement with far-reaching and possibly fundamental implications, disagreed with Japan. According to the Appellate Body the application of Article 5.7 is triggered not by the existence of scientific uncertainty, but rather by the insufficiency of scientific evidence. The text of Article 5.7 is clear: it refers to "cases where relevant scientific evidence is insufficient", not to "scientific uncertainty". The two concepts are \textit{not interchangeable}. Therefore, we are unable to
endorse Japan’s approach of interpreting Article 5.7 through the prism of "scientific uncertainty" (italics added).33

Predictability remains a fundamental principle of the multilateral trade system and largely determines the comprehension of risk and the concept of risk assessment at the WTO. Thus, the concept of “scientifically identifiable risk” developed by the Panel and the Appellate Body in the Hormones case34 prevails over that of “scientifically uncertain risk” intrinsic to precaution. The quasi rejection of the application eo ipso of the notion of scientific uncertainty in the context of Article 5.7 is a logical consequence of the interpretation given by the Appellate Body of the function of the SPS Agreement:

the requirements of a risk assessment under Article 5.1 [of the SPS Agreement], as well as of “sufficient scientific evidence” under Article 2.2 [of the SPS Agreement], are essential for the maintenance of the delicate and carefully negotiated balance in the SPS Agreement between the shared, but sometimes competing, interests of promoting international trade and of protecting the life and health of human beings.35

Precautionary Principle Quo Vadis?

We have attempted to demonstrate that the most important precautionary language contained in WTO agreements, i.e. SPS Article 5.7, implicitly or explicitly has not been applied in any of the four cases ruled under this agreement. Should we thus conclude that the WTO is rejecting the precautionary approach? The answer to this question needs be carefully contextualized. The interpretation of the DSB, especially by the Appellate Body, seems to apply a rather flexible interpretation of the scientific method which underpins the whole SPS Agreement. In spite of the fact that in all four cases the SPS measures were judged to be WTO-incompatible it is clear that these rulings were not based on a rejection of the precautionary principle as such, but rather on the conclusion that the justification of these trade restrictions did not demonstrate that they were based on the required scientific risk assessment procedures.

Christine Noiville’s reading of the first three decisions is that they have been decided on the basis of formalities rather than on fundamental issues.36 In all these cases one may indeed observe that the importing countries were not very forthcoming with regard to their scientific evidence. It should be noted that this can be seen as a reaction which is in conflict with the precautionary principle because even though the latter is not (yet) defined in a generally accepted form it is widely acknowledged that a “best possible” research effort is required as an integral part of its implementation. This premise of course renders invalid the claim that a precautionary approach attempts to disregard scientific methods and evidence.

35 Ibid., para. 177.
The four SPS rulings available now allow us to conclude that the DSB does provide a certain flexibility and openness in order to take into consideration the complexities of scientific uncertainty and related precautionary measures. At the same time we also have to realize that the DSB’s flexibility is clearly quite narrow, it does not accept the notion that trade restrictions could be justified by the precautionary principle per se, although the DSB seems to be aware of the fact that scientific knowledge is subject to all kinds of qualifications. This sensitivity contrasts with the more positivist view of science which is expressed through the SPS Agreement. Thus the Appellate Body acknowledges that scientific research is often unable to provide scientific certainty. We may thus conclude from the DSB’s interpretations that the sense of SPS Articles 2.2, 3.3 and 5.7 has significantly evolved. These articles insist that trade restrictions need to be justified through the establishment of scientific evidence which shows their necessity. The DSB, however, takes a less rigorous position, it simply calls for a “rational relationship” between the import restriction and the scientific evidence which it is based on: “The requirement that an SPS measure be "based on" a risk assessment is a substantive requirement that there be a rational relationship between the measure and the risk assessment.”37

Our analysis leaves for another day a more detailed discussion of a fundamental issue related to the SPS Agreement, namely the question of the Agreement’s inability to deal with trade measures that respond to wider societal concerns. Such concerns may be in a general sense related to the scientific evidence of risk but they may be justified partially, primarily or entirely on the basis of societal choices established through a transparent democratic process informed by scientific expertise rather than on the basis of a risk assessment as defined by the Annexes of the SPS Agreement or the Codex Alimentarius. In this context the question arises: what is really an SPS measure? The answer is not as neatly defined by clear-cut, objective scientific parameters as one might think. Pauwelyn provides the following criterion, among others:

For a specific measure to be viewed as an ‘SPS measure,’ the decisive factor is a subjective one. What counts is the objective or purpose of the regulation. Was it enacted with a view to protect human, animal or plant life or health? Only if that is the case can it be an SPS measure[...]. So far, this subjective criterion has not caused any discussion. In all three disputes, the defending party argued that health protection was, indeed, the purpose of the measure challenged [...]. What if a defendant were to argue, however, that health protection is only one of the objectives aimed at and that consumer concerns or moral standards are the real basis of the measure? Should, say, 10 percent health protection (of all objectives aimed at) then be enough for the measure to be an SPS measure, or should it be more than 50 percent? What if a defendant claims that it does not aim at protecting health at all? Can a panel examine this more or less subjective matter of intent and, as the case may be, conclude the contrary?38

37 See hormones, para. 193. See also Japon - Varietals, para. 79 : « In our opinion, there is a "scientific justification" for an SPS measure, within the meaning of Article 3.3, if there is a rational relationship between the SPS measure at issue and the available scientific information».

We need to recognize that this is an important issue, let us cite here another concern expressed by law Professor Thomas Cottier who has not only published widely on the WTO but has in addition to this record also a long WTO experience as a Swiss negotiator as well as a WTO Panel member:

A proper methodology referring to the social sciences should be developed in the context of risk management. In particular, this includes inquiries into the social and political acceptance of existing risk. Standards of review should be framed accordingly, and examination of scientific evidence and social and political criteria should be undertaken in consecutive steps.  

The *Hormones* case represents arguably, at least in Europe, the WTO’s most controversial ruling. At the time of this writing, the WTO is embroiled in another dispute between Europe and the US, *EC-Biotech Products*, which is staked so some extent on the same issues of scientific uncertainty and food safety, but also on more diffuse matters such as cultural traditions and preferences or food security. There are at least two important differences between the two disputes: First of all, the economic ramifications are far larger (and the environmental ones also!), and secondly, the WTO is presently in a politically and institutionally weaker position than in January 1998 at the time of the *Hormones* ruling. This is the result of three events which are only indirectly related to the issues discussed here, namely the 1998 Ministerial Conference in Geneva which sparked extensive riots in the city, and the 1999 and 2003 Ministerials in Seattle and Cancun which ended in a breakdown of the negotiations that were caused to a large extent by the emerging political empowerment of developing countries. Their views and economic interest differ considerably from the industrialized world, and until 1999 these countries did not really have the skills and the expert knowledge, not to mention the resources and political coalitions, to make their position clearly understood at the trade negotiations. This is slowly beginning to change, especially in the wake of the implementation of the 2001 Doha Development Agenda.

Last but not least, we need to take into consideration the wider geopolitical context. The United States, especially the present Administration, is known for tending to frown upon multilateral negotiations in general, and in the case of trade for pushing bilateral and regional agreements. These undoubtedly represent a much worse alternative for the efforts of reconciling trade policy with other global priorities that are often called non-trade issues by the trade community, such as environmental protection, public health or comprehensive poverty relief.

It should also be mentioned that – to the great deception of developing countries - the industrialized world with some Nordic exceptions has fallen far below the pledges of the 1992 Rio Conference which intended to strengthen sustainable development patterns. This result has further fuelled North-South tensions at the WTO, which are added to EC-US clashes over trade, as well as over several other sensitive issues like climate change or other environmental negotiations. As a result we can see that the maintenance of strongly supported multilateral processes has

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become a real challenge for the WTO which is directly or indirectly affected by these forces. The evolution of the precautionary principle is not really at the center of these frictions, but it plays an important role in discords over biotechnology, food, and the environment which are important components of many wider global trade and other negotiations. It is to be hoped that the worldwide trading system will be able to come to terms with the challenge of scientific uncertainty; if it does not then the damages to the leitmotif of multilateralism may be unpredictable.