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Abstract: How the law reasons is central to its legitimacy. This article examines how legal reasoning is characterized by two types of logic, *deductive* and *inductive*, which are apparent in the legal system of the World Trade Organization (WTO). The article goes on to suggest that the interaction of deductive reasoning in the form of presumptions and inductive reasoning in the form of proof give rise to a third type of logic, *abductive* logic, defined as the ‘best’ estimate on current knowledge. It then examines how this three-fold combination of ideas is displayed in WTO law and explores what implications this has for understanding of the WTO legal system.

Modes of Reasoning in WTO Law

By Chios Carmody¹

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1. Introduction

*. Law is law and in law a distinction is often made between law and fact.² The normative (law) must take account of the actual (fact). How the law does so is important to its structure and legitimacy.

*. Nevertheless, this taking account of fact is not free-form. It is dictated by the law's rationality, or the way in which the law appreciates and reasons about facts. Rationality infers that the law is logical. The law displays this logic by reasoning about facts in pre-defined ways. For example, a jurisdiction may have a 'dangerous driving' statute on the books.³ Such statutes often prescribe liability even in the absence of harm. They are enacted because they keep the roads safe. Their rationality involves a presumption about what would happen if drivers drove recklessly, which is more accidents. In most instances the justification for the presumption does not lie in any one accident, but rather in accrued prior experience.

*. In WTO law the broad issue of reasoning lies at the heart of many contemporary debates about the nature of the law. This point is perhaps most evident in a number of 'new' areas of WTO regulation such as technical standards and health and safety, which appear to go "beyond a discrimination-based approach to international trade"⁴ and place greater emphasis upon testing as the basis for the justification of national regulations under WTO law. However, reasoning is also implicated in many more traditional areas such as WTO dispute settlement, sovereignty, and compliance. In short, the law's rationality and reasoning are enormously important. They are woven into the very texture of the law, its warp and weft.

*. The issue of reasoning is also to be distinguished from *evidence*, *fact-finding* and the *burden of*

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² "Nobody can deny that the statement: "something is" – that is, the statement by which an *existent fact* is described – is fundamentally different from the statement: "something out to be" – which is the statement by which a *norm* is described." Hans Kelsen, *A Pure Theory of Law* 5-6 (1967) [emphasis added]. In practice, the distinction between fact and law can be a fine one. In *U.S. – Aircraft* the WTO Appellate Body observed that it is often "difficult to disentangle legal conclusions or legal reasoning from factual findings." *U.S. – Aircraft*, WT/DS353/AB/R, para. 958 (12 March 2012).

³ For example, in the United Kingdom the *Road Traffic Act 1988*, s. 1, provides that "A person who drives a mechanically propelled vehicle dangerously on a road or other public place is guilty of an offence". A person is to be regarded as driving dangerously if "the way he/she drives falls far below what would be expected of a competent and careful driver, and it would be obvious to a competent and careful driver that driving in that way would be dangerous. In the Attorney General's Reference (No. 4 of 2000), 2 Cr. App. R. 417 at 422 Woolf C.J. said "The essential limbs, as is common ground, do not require any specific intent to drive dangerously. Section 2A sets out a wholly objective test. The concept of what is obvious to a careful driver places the question of what constitutes dangerous driving within the province of the jury."

⁴ See Andrew Lang & Joanne Scott, "The Hidden World of WTO Governance" 20:3 *E.J.I.L.* 575, 590 (2009); Andrew Lang, *World Trade Law after Neoliberalism* (2011) (making the argument that the last decades of the 20th century witnessed a reinvention of the international trade regime, with greater attention paid to fact-finding and proof-based forms of evidence).

proof in WTO law.⁵ The reasoning adopted by the law encompasses all of these topics, but also goes beyond them. Reasoning is the overarching pattern of logic that is adopted. It is the process that dictates the kinds of *evidence* that may be required in a given situation. For instance, in the case of a dangerous driving statute, as seen above, it may not require any evidence of harm. It also dictates the kind of *fact-finding* necessary which, again, in the case of a dangerous driving statute, may rely more on act and intent than on effects. Finally, reasoning will dictate where the *burden of proof* is to rest. In the case of a dangerous driving statute, once certain acts have been proven, a driver may be required to show how they were not involved.

*. What I examine in this article is the way that WTO law employs three identifiable modes of reasoning and how each mode interacts with, and depends upon, the others. It is tempting to think of reasoning in WTO law as relatively undefined and open-ended. With respect to evidence, for example, there is the well-known dictum of the Appellate Body in *U.S. – Woven Wool Shirts and Blouses* that “what kind of evidence will be required to establish [a] presumption will vary from measure to measure ...”⁶ But if a closer look is had, it is possible to discern different modes of reasoning about evidence and indeed much else that, taken together, explains a substantial amount about the nature of WTO law.

*. In the first instance WTO law can be said to be characterized by *deductive logic* – the logic of what ‘will be’ – based on assumptions about the way things are.⁷ This preoccupation is expressed in WTO law’s heavy reliance on presumptions and inference. In a second instance WTO law can be characterized by *inductive logic* – the logic of what ‘is’ or ‘was’ – based on proof.⁸ As some commentators have noted, however, induction is hard to sustain in a legal system with limited fact-finding ability. Therefore, in a third instance WTO law is characterized by *abductive logic* – the logic of what ‘might be’ – based on the combination of both presumption and proof, or in other words, on the reconciliation of what will be with what was.⁹ Abductive logic is not watertight. Instead, it offers the “best” or most intelligent explanation on existing evidence and provides the possibility of change as new information becomes available. Abductive reasoning is open, tentative and provisional, and in this way, allows the WTO system a degree of adaptive flexibility as law and fact change.¹⁰

*. What I go on to suggest is that these contrasting and competing modes of reasoning are evidence of a “nested opposition” within the WTO Agreement. The term “nested opposition” was coined by Jack Balkin in 1990 and is based on earlier deconstructionist work by Michel Foucault. The “nested” quality of an opposition implies that the “favoured or dominant term bears some form of conceptual dependence to the disfavoured or subordinated term”¹¹, a phenomenon that will be observed in the connections between deductive and inductive reasoning. What I conclude in this article is that deductive logic takes precedence over inductive logic in WTO law. This preference is not problematic or evidence of any inherent imbalance. Rather, it speaks to the law’s inclination for rationality as opposed to empiricism as well as to its ability to accommodate contradiction.

*. Why is this important? It is important because WTO law is about so many things that it can often appear overwhelming. Basic ideas about rationality and reasoning can help us to discern the law’s underlying pattern, its order and organization. In addition, WTO law is a branch of international economic law, a body of law that is often reduced by economists to numbers. Quantitativity has led a

⁵ For an overview of these topics see Michelle Grando, *Evidence, Proof and Fact-Finding in WTO Dispute Settlement* (2009).

⁶ WT/DS33/AB/R, p. 14 (25 April 1997).

⁷ Roger Martin, *The Opposable Mind* 144-145 (2007).

⁸ *Ibid.*

⁹ *Ibid.*

¹⁰ In a few instances the Appellate Body appears to have actually given credence to this idea. In *Japan – Alcoholic Beverages*, for example, in discussing the idea of ‘likeness’ under GATT Art. III:2, first sentence, it observed that “in considering other criteria that may also be relevant in certain cases, [WTO] panels can only apply their *best judgment* in determine whether in fact products are “like”.” *Japan – Alcoholic Beverages*, WT/DS8/AB/R, pp. 20-21 (4 Oct. 1996).

¹¹ Balkin, *ibid.*, 1676-77.

number of commentators as diverse as Petros Mavroidis¹², Lothar Ehring¹³ and Won Mog Choi¹⁴ to call for greater empiricism to WTO law, yet WTO law is not exclusively or even predominantly about metrics. A lingering question has to be, why not? An understanding of the law's recurrent modes of reasoning and their relationship to each other helps to explain why WTO law retains a healthy skepticism about pure quantitativity. Numbers may tell us something, but they do not tell us everything.

*. Following this Introduction, therefore, Part II traces the idea of legal reasoning, or how reason is employed to arrive at legal conclusions. This Part offers an overview of the three principal types of reasoning outlined above (deductive, inductive, abductive) as well as some observations about their consequences for the general orientation of the law. Part III then goes on in a first instance to examine how WTO law most often exhibits features of deductive reasoning. Second, it also examines how WTO law supplementarily exhibits features of inductive reasoning, but how at the same time the legal system is critically constrained by its ability to assess underlying fact. Facts are also of lesser importance in a legal system that emphasizes latency and potentiality. Demands for greater evidence-based decision making in WTO law must be judged in this light. Third, the article examines how WTO law deploys both deductive and inductive reasoning together to achieve the kinds of outcomes that the system has become known for in abductive reasoning, the logic of what 'might be'. Part IV then offers a discussion and conclusion.

2. The Nature of Legal Reasoning

*. Traditionally, legal reasoning features arguments of two types – deductive and inductive. Deductive reasoning involves a proposition which, if accepted, mandates or makes inescapable a certain conclusion. For instance, a deductive argument might run as follows:

1. Every human will die someday.
2. Jones is a human.
3. Jones will die someday.¹⁵

*. By comparison, inductive reasoning begins with data or evidence from the past which is accumulated to support a conclusion. The data or evidence points to a conclusion which makes the conclusion probable. However, the inductive conclusion "is not inescapable, as it may be in deductive argument."¹⁶ Thus, an inductive argument might run as follows:

1. Able drives his car into an intersection with a traffic light.
2. Able's car collides with Baker's car.
3. The following facts are led at a criminal trial:
 1. there are long skid marks behind Able's car,
 2. a pedestrian witness says Able ran a red light,
 3. Baker testifies that he (Baker) entered the intersection on a green light,

¹² For an economic approach see Michael J. Trebilcock & Robert Howse, *The Regulation of International Trade*, (3rd ed.) (London: Routledge, 2005) at 2-3, 37. For an econometric approach see Kyle Bagwell & Robert W. Staiger, "An Economic Theory of GATT", NBER Working Paper No. 6049 (May 1997). Leading economic commentators have acknowledged, however, the shortcomings an economic approach in terms of theory. Thus, Petros Mavroidis has written that "the work of Bagwell and Staiger, especially has demonstrated that it can be used to explain the design of the basis GATT instruments, that is, MFN, reciprocity, subsidies, and safeguards. It is difficult, however, to explain, as Regan (2006) points out, other GATT institutions, such as [anti-dumping]. ... The end result is that economic theory has not, as of yet, come up with a comprehensive explanation for the GATT, as we know it. ... What we still lack is an internally consistent theory that we can use as guidance to understand all of the GATT instruments." Petros Mavroidis, *Trade in Goods* 18 (2007).

¹³ Lothar Ehring, "De Facto Discrimination in WTO Law: National and Most-Favoured-Nation Treatment – or Equal Treatment?" *Jean Monnet Working Paper* 12/01 (2001).

¹⁴ Won Mog Choi, *Like Products in International Trade Law* 156-157 (2003).

¹⁵ Paraphrase of an example used by J.S. Covington, Jr., *The Structure of Legal Argument and Proof* 7-8 (1993) [hereinafter *Covington*].

¹⁶ *Ibid.*, p. 4.

4. Able denies that he (Able) entered the intersection on a red light.¹⁷

At the trial favourable evidence points to a hypothetical conclusion, namely, that Able did indeed run the red light. Nevertheless, some evidence supports the conclusion and some denies it. “Since it is impossible to prove what happened in the past to a certainty, the jury decides whether the hypothetical conclusion is more likely than not, based on the evidence. ‘More likely than not’ conclusions to inductive arguments are *probable* conclusions.”¹⁸ They converge on a conclusion to make that conclusion probable.

*. There are several points of contrast between deductive and inductive reasoning. First, deduction is evidently abstract and rational. It depends upon a pre-existing theory or idea about something, whereas induction is more empirical and concrete. Second, deduction is based on a pre-existing mental pattern or proposition projected into the future, whereas induction offers a probable conclusion based on evidence gathered from the past. Third, deduction is characterized by certainty. If a premise is true, then as a legal matter the conclusion logically following from it *must be* true. By contrast, induction offers only a probability that something is true. If an inductive argument is accepted, then as a legal matter its conclusion is *probably* true.

*. The most common form of legal device embodying deductive reasoning is a presumption. A presumption is a legal rule which either prohibits or dispenses with the need for further proof.¹⁹ Presumptions can be rebuttable or irrebuttable. The most common form of inductive reasoning is proof.²⁰ Proof will be subject to the *burden of proof* – the question of which party has the obligation to provide proof in a given instance – and weighed according to the *standard of proof*, the question of what degree of probability the proof must satisfy.

*. Traditionally, deductive and inductive reasoning have been regarded as exclusive and exhaustive. They admit of no other forms of logic.²¹ Some commentators have recognized a third form of logic in “abductive reasoning”. Abductive reasoning is thought to have been first identified by the American philosopher Charles Saunders Pierce (1839-1914) and is commonly considered to be “a technique used to narrow down the number of alternatives by picking out one or a few hypotheses from a much larger number of them ...”²² It is often called “an intelligent guess”²³ and is “equated with inference to the best explanation.”²⁴ For this reason abductive reasoning appears to be distinct from inductive reasoning, which, as mentioned, is the *most probable* explanation. Still, abductive reasoning is “a guess because it is tied to an incomplete body of evidence. As new evidence comes in [over time], the

¹⁷ *Ibid.*, p. 8.

¹⁸ *Ibid.*, p. 9 [emphasis in original].

¹⁹ “A presumption is an inference in favour of a particular fact and would also refer to a conclusion reached in the absence of direct evidence.” *Argentina – Footwear*, WT/DS56/R, para. 6.38 (25 Nov. 1997). In that case the panel went on to observe that “Inference (or judicial presumption) is a useful means at the disposal of international tribunals for evaluating claims. In situations where direct evidence is not available, relying on inferences drawn from relevant facts of each case facilitates the duty of international tribunals in determining whether or not the burden of proof has been met. It would therefore appear to be the prerogative of an international tribunal, in each given case, to determine whether applicable and unrebutted inferences are sufficient for satisfying the burden of proof.” *Ibid.*, para. 6.39.

²⁰ Proof is often offered in the form of “data” or “positive evidence”. In *U.S. – Lamb*, WT/DS177/AB/R, WT/DS178/AB/R (1 May 2001) the Appellate Body observed that “data relating to the most recent past will provide competent authorities with an essential, and, usually, the most reliable, basis for a determination of a threat of serious injury. The likely state of the domestic industry in the very near future can best be gauged from data from the most recent past.” *Ibid.*, para. 137 [emphasis added]. “Positive evidence” has been defined as relating “to the quality of the evidence upon which the authorities may rely in making a determination. The word “positive” may be understood as meaning that the evidence must be of an affirmative, objective and verifiable character, and that it must be credible.” *EC – Pipe Fittings*, WT/DS219/R, para. 7.226 (7 March 2003).

²¹ For example *Covington*, *supra*, observes confidently that “[t]here are two forms of reasoning and therefore two forms of argument.” *Ibid.*, p. 2. He goes on to refer to abductive logic in an accompanying footnote as follows: “Some writers include a third form of reasoning called “abduction”. Abduction is similar to induction, since it results in their creation of new hypotheses, but abduction does so on one datum [i.e. data set]. It is an intelligent guess on very limited information about what a hypothesis may be, and the guess leads to the search for data to confirm the new hypothesis.” *Ibid.*, p. 2, n. 1.

²² Douglas Walton, *Abductive Reasoning* 9 (2004) [hereinafter *Walton*].

²³ *Ibid.*, p. 3.

²⁴ *Ibid.*, p. 4.

guess could be shown to be wrong.”²⁵ Abductive reasoning stresses the tentative, open-ended nature of knowledge in the present. It is the best explanation *right now*. This provisional quality makes abductive reasoning distinct from deductive reasoning, which emphasizes a certain inference projected into the future, or from inductive reasoning, which establishes a probable inference with evidence collected about the past. Abductive reasoning is sometimes referred to as the logic of what ‘might be’.

*. An example of an abductive argument originally used by Pierce runs as follows:

The Four Horseman Example

I once landed at a seaport in a Turkish Province; and as I was walking up to the house which I was to visit, I met a man upon horseback, surrounded by four horsemen holding a canopy over his head. As the governor of the province was the only personable I could think of who would be so greatly honoured, I inferred that this was he. This was an hypothesis.²⁶

*. Abductive reasoning is therefore hypothetical reasoning, subject to revision as new information becomes available. Some authorities have noted its role in the law of evidence. John Henry Wigmore (1863-1943), the American authority on evidence in the first half of the twentieth century, “was quick to pick up on the importance of this kind of reasoning in legal evidence judgments, and he applied the idea to the reasoning used in many typical legal cases in a very helpful and convincing way.”²⁷ Wigmore employed the following illustration of abductive reasoning in law:

The fact that before a robbery someone had no money, but after had a large sum, is offered to indicate that he by robbery he became possessed of the large sum of money. There are several other possible explanations – the receipt of a legacy, the payment of a debt, the winning of a gambling game, and the like. Nevertheless, the desired explanation rises, among other explanations, to a fair degree of plausibility, and the evidence is received.²⁸

Nevertheless, the importance of abductive reasoning in law is rarely recognized. Even today it remains poorly understood.²⁹

*. Philosophers disagree about the exact relationship between the three different forms of logic outlined above.³⁰ In this article I take the position that abductive reasoning is in fact a *combination* of the other two. Like inductive reasoning, abduction is based on evidence collected from the past, but like deductive reasoning it projects a hypothesis into the future. It is the best explanation available at a given time, though it may change. This flexibility is behind the opinion that “[abduction] sound[s] highly intuitive and creative, even instinctive in nature.”³¹

*. What this ‘combination’ view of abductive reasoning suggests is that we should not expect to see abductive logic displayed in the operation of any *one* legal device in WTO law - either presumption or

²⁵ Ibid., pp. 3-4.

²⁶ Ibid., p. 5.

²⁷ Ibid., p. 23.

²⁸ Wigmore’s example originally appeared in John H. Wigmore, *A Treatise on the Anglo-American System of Evidence*, Vol. 1 (3rd ed.) (1940). It is reproduced in *Walton*, supra, note 22 at 25.

²⁹ Walton observes that “Wigmore’s use of abductive inference in his analysis of legal evidence suggests emphatically that the abductive model is highly applicable to legal reasoning. In the past, the notion of abduction has not been widely known to experts on legal logic and legal evidence, and much of their work has centered on deductive and inductive models of rational argument. But even a glimpse of Wigmore’s work on evidence shows the enormous potential of abduction as applied to the logical structure of reasoning in legal evidence.” Ibid., pp. 25-26.

³⁰ Walton notes that the relationship between the three modes of logic is open: “Should one of these variously named types fit in as the third kind of inference contrasting with the other two? Or should all of them fit into that category?” He concludes that “[t]he situation is complicated, and the terminology is unsettled.” Ibid., pp. 1-2. Similarly, see *Covington*, supra, note 21, who notes that “[t]here are two forms of reasoning and therefore two forms of argument – inductive and deductive.”

³¹ Ibid., p. 9.

proof - but in the mixture, and to some extent interaction, of both over time. The two forms of reasoning support each other in a continuing present.

3. Modes of Reasoning in WTO Law

*. How are these ideas displayed in WTO law? What consequences might they have for its shape as a body of law? To answer these questions, it is necessary to examine the nature of WTO law.

A. Deductive Reasoning

*. The WTO Agreement was concluded in 1994 and is said to represent a significant “thickening of legality”³² as compared with GATT 1947. The treaty is primarily about the protection of expectations and is generally an instrument of obligations as opposed to rights.³³ The principal provisions of the WTO Agreement – the Most Favoured Nation (MFN) requirement of GATT Art. I, commitments related to tariff bindings in GATT Art. II, the non-discrimination principle in GATT Art. III, and the general prohibition on quantitative restrictions in GATT Art. XI – are all obligations. They are what member countries are committed to doing. By comparison, rights are subordinate. Subordination happens both because obligations are the basis of the law in any legal system and because the rights assigned in WTO law are generally indistinct. They are only intermittently vindicated, usually by a particular country with a substantial interest in compliance. In this, WTO law differs from traditional private law, which emphasizes more of a balance between obligations and rights, or from criminal law, where the rights of the accused are emphasized as a by-product of the potential penalties a conviction presents.

*. The emphasis on obligation as opposed to right in WTO law means that the law places a special priority on automaticity, that is, the ability to do things relatively quickly and without much investigation into detail. The most important thing in the scheme of the legal system is that the law be complied with. Hence, many matters have to be assumed or presumed. There is an ideal quality to WTO law, often expressed in the observation that the WTO Agreement is primarily a *legal regime*.³⁴ In a formal sense, the law is said to be unconcerned with underlying conditions.

*. This abstract quality is all the more important because of the generally passive character of the WTO system and its dispute settlement system. Countries make trade concessions under the treaty and these concessions are generalized to the entire WTO membership by virtue of the MFN clause, but no violation is identified until one member decides to complain about the “measure” of another member. An important presumption in the system is that countries are considered to comply with their obligations in line with Art. 26 of the Vienna Convention on the Law of Treaties.³⁵ In this way, a

³² *India – Quantitative Restrictions*, WT/DS90/R, para. 5.101 (6 April 1999).

³³ This protection often expressed in terms of “security and predictability”. Thus, for instance, in *EC – Computer Equipment*, WT/DS62, 67, 68/AB/R (5 June 1998) the Appellate Body stated, “We agree with the Panel that the security and predictability of “the reciprocal and mutually advantageous arrangements directed to the substantial reduction of tariffs and other barriers to trade” is an object and purpose of the *WTO Agreement*, generally, as well as of the GATT 1994.” *Ibid.*, para. 82. See also *EC – Selected Customs Matters*, WT/DS315/R, para. 6.34 and see comments at para. 7.431 (16 June 2006). In relation to GATS see *U.S. – Gambling*, WT/DS285/R, para. 6.108 (10 Nov. 2004) (“The Appellate Body found that ‘the security and predictability of ‘the reciprocal and mutually advantageous arrangements directed to the substantial reduction of tariffs and other barriers to trade’ is an object and purpose of the *WTO Agreement*, generally, as well as of GATT 1994.” This confirms the importance of the security and predictability of Members’ specific commitments, which is equally an object and purpose of the GATS.”), see also *China – Payment Services*, WT/DS413/R, para. 7.535 (16 July 2012). For stability and predictability as a purpose of TRIPS see *India – Patents*, WT/DS50/AB/R, para. 58 (19 Dec. 1997) (referring to India’s obligation “by Article 70.8(a), to provide a legal mechanism for the filing of mailbox applications that provides a *sound legal basis* to preserve both the novelty of the inventions and the priority of the applications as of the relevant filing and priority dates.”). *Ibid.* [emphasis added].

³⁴ See for instance *Argentina – Hides (21.3(c))*, WT/DS155/10, para. 41 (31 Aug. 2001) (noting that “[c]ompliance within the meaning of the DSU is distinguishable from the removal or modification of the underlying economic or social or other conditions ...”).

³⁵ Article 26 of the Vienna Convention on the Law of Treaties provides that “[e]very treaty in force is binding upon the parties to it and must be performed by them in good faith.” For discussion see *Brazil – Aircraft*, WT/DS46/RW/2, para. 5.124 (26 July 2001). See also Marion Panizzon, *Good Faith in the Jurisprudence of the WTO* (2006). In WTO law, the presumption of members’ compliance has been noted in several cases: *Argentina – Peaches*, WT/DS238/R, para. 7.142 (14 Feb. 2003); *Brazil – Aircraft*, WT/DS46/RW/2,

vener of normalcy is maintained about the treaty's operation even though there may be continuing non-compliance.³⁶

*. When a measure is challenged before the WTO dispute settlement system, the system applies a further presumption embodied in Art. 3.8 of the WTO Dispute Settlement Understanding (DSU), which provides:

In cases where there is an infringement of the obligations assumed under a covered agreement, the action is considered *prima facie* to constitute a case of nullification or impairment.

DSU Art. 3.8 goes on to observe that: "This means that there is normally a *presumption* that a breach of the rules has an adverse impact on other Members parties to that covered agreement, and in such cases, it shall be up to the Member against whom the complaint has been brought to rebut the charge."³⁷ The presumption lies at the heart of the WTO legal system inasmuch as it defines when responsibility will be triggered.

*. Some debate has occurred around the status of the presumption in DSU Art. 3.8. Frieder Roessler has traced the presumption's origins to pre-World War II bilateral arrangements negotiated on the basis of specific reciprocity where "nullification or impairment" could be demonstrated and, arguably, rebutted. In the multilateral context in which the presumption now operates, however, rebuttability "would lead to a denial of rights."³⁸ Moreover, "[i]n a multilateral trade order that prescribes conditions of competition and therefore does not guarantee trade results but trade opportunities, the application of the concept of nullification or impairment to violation cases cannot fulfil a useful function."³⁹ Roessler therefore supports the elimination of the presumption under GATS and TRIPS.⁴⁰

*. The case law concerning the presumption has generally upheld the principle, first identified under GATT, that while the presumption was formally rebuttable, in practice, it had "operated as an irrefutable presumption."⁴¹ This conclusion followed from a number of GATT cases where nullification or impairment was found even for measures that had no demonstrable trade effect.⁴² In *Turkey – Textiles*, for example, the panel assessed Turkey's argument that quantitative restrictions imposed on imports from India had had no discernible effect on trade. The panel concluded that:

... even if Turkey were to demonstrate that India's overall exports of clothing and textile products to Turkey have *increased* from their levels of previous years, it would

para. 5.124 (26 July 2001) (observing that "when the executive branch of a Member is not required to act inconsistently with requirements of WTO law, it should be entitled to a presumption of good faith compliance with those requirements.").

³⁶ For instance, the 2009 Trade Policy Review for the European Communities observed that the EC applied MFN only to 9 other WTO members. All other WTO members benefited from some sort of preferential access or arrangement with the EC. See *Trade Policy Review – Report by the Secretariat*, WT/TPR/S/214/Rev.1, para. 9 (8 June 2009).

³⁷ Emphasis added.

³⁸ Frieder Roessler, "The Concept of Nullification and Impairment in the Legal System of the World Trade Organization" in E.-U. Petersmann (ed.), *International Trade Law and the GATT/WTO Dispute Settlement System* 142 (1997).

³⁹ *Ibid.*, 141.

⁴⁰ The presumption is in fact absent from GATS. The reason is that the language of "failure to carry out obligations" was expressly included in GATS Art. XXIII:1. See *Mexico – Telecommunications*, WT/DS204/R, para. 8.4 (2 April 2004) (noting that "Whereas Article XXIII:1 of the GATT specifically conditions access to WTO dispute settlement procedures on an allegation that a "benefit" or the "attainment of an objective" under that agreement are being "nullified or impaired", the corresponding provision in the GATS (Article XXIII:1) permits access to dispute settlement procedures if a Member "fails to carry out its obligations or specific commitments" under the GATS. In this respect, we note that the Appellate Body in *EC – Bananas III* stated that the panel in that case "erred in extending the scope of the presumption in Article 3.8 of the DSU to claims made under the GATS".").

⁴¹ See *U.S. – Taxes on Petroleum*, 34th B.I.S.D. Supp. 156-157, para. 5.1.7 (17 June 1987).

⁴² For instance, in *Japan – Measures on Imports of Leather*, 31st B.I.S.D. Supp. 94 (15-16 May 1984) it was noted that "...the panel wished to stress that the existence of a quantitative restriction should be presumed to cause nullification or impairment not only because of the effect it had on the volume of trade but also for other reasons e.g., it would lead to increased transaction costs and would create uncertainties which would affect investment plans." *Ibid.*, paras. 55-56.

not be sufficient to rebut the presumption of nullification and impairment caused by the existence of WTO incompatible import restrictions. Rather, at minimum, the question is whether exports have been what they would otherwise have been, were there no WTO incompatible quantitative restrictions against imports from India.⁴³

The panel also noted that even if the quotas were not fulfilled could not be determinative of nullification or impairment of the WTO Agreement because the existence of quotas could lead to increased transaction costs and create uncertainties which would affect investment plans. Given its continuing application of quotas, Turkey had failed to rebut the presumption.

*. Another example of a presumption in WTO law appears in SCM Art. 3, which defines export-contingent and import-substitutive subsidies as prohibited. Complaining members are not obliged to make a case regarding any adverse effects to successfully challenge such measures. They are required simply to establish the *existence* of a measure that is, as a matter of principle, expressly prohibited. Empirically such subsidies undoubtedly do have adverse effects, but that is not the legal basis in WTO law upon which action may be taken to challenge them.⁴⁴ The basis of state responsibility under SCM Arts 3-4 is tied to *act alone*.

*. At the same time, a number of other presumptions are noteworthy for the way that they are linked to the “burden, the order, the universality of the law”⁴⁵. On their face a number of presumptions exist and operate in WTO law which might appear jurisprudentially neutral. For instance, Jeffrey Waincymer has noted a presumption against conflict within the treaty⁴⁶, a presumption of consistent usage⁴⁷, a presumption of differential usage⁴⁸, and a presumption against retroactivity.⁴⁹ Upon reflection, however, it becomes apparent the way that the presumptions operate to quietly stress the nature of WTO law as *a body of law*, that is, a regime of obligation. If a country accepts the WTO *acquis*, that is, the accrued body of law and practice under the treaty, it is automatically subject to them. Taken together, they emphasize the “burden” of the legal order.

*. The point to be drawn from all of the above is that deductive reasoning is vitally important to the WTO legal system. Singularly small and apparently insignificant, the many presumptions within the legal system tend to reinforce the idea that the law adheres to ideals, things which may not be visible in the present but are achieved in the future. In this the actual, the real, and the quantifiable are of lesser importance. Why? Because the legal system is ultimately concerned with expectations and potentiality going forward.⁵⁰ These give WTO law its force.

B. Inductive Reasoning

*. I have previously referred to the chief purpose of WTO law as being the protection of expectations. Its reasoning rests largely on how things are *expected to be* in the future. Its general form corresponds well with deductive reasoning. Yet this is not its only form of reasoning. WTO law can also be said to take account of existing fact, of what is or ‘was’, sometimes expressed in the demand for “positive

⁴³ *Turkey – Textiles*, WT/DS34/R, para. 9.204 (31 May 1999) [emphasis added].

⁴⁴ *U.S. – FSC*, WT/DS108/AB/RW, para. 539 (14 Jan. 2002).

⁴⁵ Philip Allott, *Eunomia* 160 (1990).

⁴⁶ Jeff Waincymer, *WTO Litigation* 465-66 (2002).

⁴⁷ *Ibid.*, 468.

⁴⁸ *Ibid.*, 469.

⁴⁹ *Ibid.*, 477.

⁵⁰ This idea of potentiality has given rise to the doctrine of “indirect effect”, which was described in *U.S. – Section 301* as follows: “If no specific application is at issue – if, for example, no specific discrimination has yet been made – what is it that constitutes the violation? ... Indirect impact on individuals is, surely, one of the principal reasons. In treaties which concern only the relations between States, State responsibility is incurred only when an actual violation takes place. By contrast, in a treaty the benefits of which depend in part on the activity of individual operators the legislation itself may be construed as a breach, since the mere existence of legislation could have an appreciable “chilling effect” on the economic activities of individuals.” See *U.S. – Section 301*, WT/DS152/R, para. 7.80-7.81 (22 Dec. 1999).

evidence”.⁵¹

*. To understand the transformation from deductive to inductive reasoning, it is necessary to appreciate the law’s temporal perspective. A deductive rule is subtly prospective and ideal. It implicitly rests on the way the world will be. An inductive rule is subtly retrospective and real. It rests on the way the world is, or perhaps more accurately *was*, since the present can only be measured by reference to facts ascertained as part of a constantly elapsing past.

*. The demand for positive evidence is particularly noticeable in WTO rules disciplines – safeguard, countervail and anti-dumping review – where the law has to ‘get at’ what has happened previously. The inquiry is conducted in order to properly assess whether a national investigating authority has complied with the WTO Agreement in making its findings and exercising the rights attendant thereto. Here the law looks backwards at a determination issued by an investigating authority in the past.

*. Naturally, the constrained frame of relevance allows the law to be more specific and precise. Things are ‘fixed’. The relevant disciplines are heavily marked by the desire to quantify. Thus, SAF Art. 4.1(b) specifies that “... the existence of a threat of serious injury shall be based on *facts* and not merely on allegations, conjecture or remote possibility”. In *U.S. – Lamb*, for instance, the Appellate Body noted that in conducting the evaluation of “whether increased imports have caused or are threatening to cause serious injury” under SAF Art. 4.2(a), “competent authorities cannot rely exclusively on *data* from the most recent past, but must assess that *data* in the context of the *data* for the entire investigative period.”⁵² Similar empiric requirements are found in the ADA and SCM and in the associated case law.⁵³

*. Perhaps the high-water mark of inductive logic in WTO law occurs in relation to the question of non-attribution. The national investigating authorities of WTO members are obligated not attribute injury to imports that cannot be so attributed. For example, SAF Art. 4.2(a) specifies that “[i]n the investigation to determine whether increased imports have caused or are threatening to cause serious injury to a domestic industry ... the competent authorities shall evaluate all relevant factors of *an objective and quantifiable nature* ...”. A debate has ensued in case law as to whether the causation test is satisfied only when increased imports, considered in isolation, are causing injury, or when they merely make “a contribution” toward factors causing injury. In *U.S. – Wheat Gluten* the WTO Appellate Body took an intermediate position, holding that there must be “a genuine and substantial relationship”⁵⁴ between increased imports and injurious effects. This issue is inevitably resolved by recourse to metrics.

*. Induction is also important in the compliance and retaliation phase of WTO dispute settlement. Here, the “rubber hits the road” in the sense that the idealistic abstractions of law must be translated into real form. The reason for the shift from deduction to induction is the job at hand. In the implementation phase of dispute settlement the law’s task becomes to ensure that a country is complying with the treaty *here and now*. The diagnosis of existing conditions becomes important.

*. For instance, in *EC – Hormones* the U.S. and EC had differences over the WTO consistency of a ban maintained by the EC on the imports of hormone-treated beef. The EC continued to maintain the

⁵¹ The Appellate Body has described “positive evidence” as “the quality of the evidence that authorities may rely upon in making a determination [that must be] of an *affirmative, objective and verifiable character*, and ... must be credible.” *U.S. – Hot Rolled*, WT/DS184/AB/R, para. 192 (24 July 2001).

⁵² *U.S. – Lamb*, WT/DS177, 178/AB/R, para. 137 (1 May 2001).

⁵³ Thus, for instance, in ADA 3.7 it is noted that “a threat of material injury shall be based on facts and not merely on allegation, conjecture or remote possibility.” Identical wording appears in SCM Art. 15.7. For discussion in the standard in case law see *U.S. – Hot Rolled*, WT/DS184/AB/R, para. 192 (24 July 2001), *Thailand – H Beams*, WT/DS122/R, para. 7.143 (28 Sept. 2000) (defining “positive evidence” as “formally or explicitly stated; definite, unquestionable (*positive proof*)” [emphasis in original]. Particularism is also noted in the standard of “special care” required by SCM Art. 15.8. See *U.S. – ITC Lumber*, WT/DS277/R, para. 7.33 (22 March 2004).

⁵⁴ WT/DS166/AB/R, para. 69 (22 Dec. 2000).

ban notwithstanding the dispute settlement proceedings which found the ban to be in breach of the SPS Agreement. Consequently, in early 1999 the U.S. sought to retaliate. The U.S. later agreed to adjudication over the proposed amount of retaliation under DSU Art. 22.6. In that proceeding the arbitrators distinguished their role from the original panel and made the following remarks about the difference between expected and real behaviour, and in parallel, the move from deduction to induction:

What normally counts for a panel is competitive opportunities and breaches of WTO rules, not actual trade flows. A panel does not normally need to further assess the nullification and impairment caused; it can presume its existence. We, in contrast, have to go one step further. We can take it for granted here that the hormone ban is WTO inconsistent. What we have to do is to estimate the nullification and impairment caused by it (and presumed to exist pursuant to Article 3.8 of the DSU). To do so in the present case, we have to focus on trade flows. We must estimate trade foregone due to the ban's continuing existence⁵⁵

*. At the same time no exact mathematical precision about retaliation is likely. What can best be hoped for is a “reasoned estimate”.⁵⁶ There has, in addition, been some effort made to go beyond the artificiality of a ‘freeze-frame’ approach to quantification, with attempts at variable and formula methods of calculation that track changes in global trade patterns in real-time.⁵⁷ These trends might appear to confirm the desire for even-greater precision, even if there is little way of ensuring their absolute accuracy.

*. The great difficulty with inductive reasoning in WTO law, however, is the constrained nature of WTO fact-finding. Panels are obliged to make an “objective assessment” of matters before them, but this takes place within a system of *dispute settlement*, a term which suggests that while adjudication is tasked with the job of resolving individual “disputes”, its ultimate aim is “settlement”. The supplementary and assistive function of dispute settlement panels is reinforced by DSU provisions and interpretations that have the effect of muting antagonism between the parties. Procedural rules of dispute settlement have been described as being “designed to promote, not the development of litigation techniques, but the fair, prompt and effective resolution of trade disputes”.⁵⁸ In addition, counterclaims are prohibited, something which tends to dilute assertions that the matter in question involves only the litigants alone.⁵⁹ Most notably, the system lacks a mechanism for compulsory discovery.⁶⁰

*. These features highlight how the tenor of DSU proceedings is less adversarial than it might be in a court of law. Evidentiary concerns assume lesser importance.⁶¹ Furthermore, in the operation of

⁵⁵ *EC – Hormones*, WT/DS26/ARB, para. 42 (12 July 1999). For further comments about the imprecision of retaliation and its calculation see *U.S. – Byrd Amendment*, WT/DS234/ARB/CAN, para. 3.123 (31 Aug. 2004); *U.S. – Gambling*, WT/DS285/ARB, para. 3.173 (21 Dec. 2007); *U.S. – Cotton*, WT/DS267/ARB/1, para. 5.181 (31 Aug. 2009).

⁵⁶ *Ibid.*, para. 41.

⁵⁷ A formula approach to retaliation was applied in *U.S. – Cotton*, WT/DS267/ARB/2, para. 5.231 (31 Aug. 2009). Economic modelling was applied in *U.S. – FSC (Art. 22.6)*, WT/DS108/ARB (30 Aug. 2002). Variability and formula approaches were also contemplated in *U.S. – Byrd Amendment*, WT/DS234/ARB/CAN, para. 4.20 (31 Aug. 2004) where the arbitrator noted that “As long as the two levels are equivalent, we do not see any reason why these levels may not be adjusted from time to time, provided such adjustments are justified and unpredictability is not increased as a result. In fact, we see no limitation in the DSU to the possibility of providing for a variable level of suspension if the level of nullification or impairment also varies.”

⁵⁸ *U.S. – FSC*, WT/DS108/AB/R, para. 166 (24 Feb. 2000).

⁵⁹ DSU Art. 3.10 provides “[i]t is also understood that complaints and counter-complaints in regard to distinct matters should not be linked.” Notwithstanding this, tit-for-tat litigation has been observed in WTO dispute settlement and is not uncommon. See the Brazil-Canada Aircraft cases (WT/DS46, WT/DS70), the EU-U.S. Large Aircraft (“Airbus/Boeing”) cases (WT/DS316, WT/DS353), *EC – Commercial Vessels*, WT/DS301/R, para. 7.127 (22 Apr. 2005) (litigation initiated by Korea against EC legislation, the TDM Regulation, making a link between temporal application of the Regulation and the initiation, resolution or suspension of WTO dispute settlement proceeding initiated by the EC against Korea regarding subsidies allegedly provided by Korea to its shipbuilding industry), and the pair of cases *Guatemala – Cement*, WT/DS60/R (19 June 1998) and *Mexico – Steel Pipes*, WT/DS331/R (8 June 2007).

⁶⁰ As noted in *Chile – Alcoholic Beverages*, WT/DS87, 110/R, para. 6.26 (15 June 1999).

⁶¹ Within the dispute resolution process, for instance, panels and the Appellate Body have emphasized the “shared responsibility” of

inductive standards a curious phenomenon is observed to occur. The demand for proof *becomes* a presumption. In effect, inductive reasoning transitions to its notional opposite, deductive reasoning. This phenomenon suggests that at their outer limits, inductive and deductive reasoning are linked.

*. An example of the ‘transition’ from inductive logic to deductive logic occurs in the establishment of an “all others” anti-dumping rate under ADA Art. 6.10. Here, the general rule is stated that in anti-dumping investigations “[t]he authorities shall, as a rule, determine the *individual* margin of dumping for each known exporter or producer concerned ...”. The rule mandates an empiric exercise in the determination of an individual margin for entities that are alleged to dump. However, the article goes on to state:

In cases where the number of exporters, producers, importers or types of products involved is so large as to make such a determination impracticable, the authorities may limit their examination either to a reasonable number of interested parties or products by using samples which are statistically valid ...

This paragraph describes the establishment of an “all-others” rate, which can be understood as a *presumptive* rate characteristic of deductive logic. There has been litigation over the extent to which the presumption should apply.⁶²

*. The ‘transition’ witnessed in reasoning is not unidirectional either. There is some evidence of a counter-trend as well. Several cases have referred to inductive measures – in essence, numbers - to reinforce deductive conclusions. In *India – Patents*, for instance, the panel noted the uncertainty created by India’s vague legislative basis for a ‘mailbox’ system of patent registrations. The panel confirmed this conclusion by referring to evidence that “*a number* of United States pharmaceutical companies do not believe that India has established a mailbox application system, and consequently have not filed applications for patent protection ...”.⁶³

C. Abductive Logic

*. Earlier, I observed that abductive logic is chiefly distinguishable from deductive or inductive logic in that it integrates both across time. Abductive logic arises from the combined interaction of presumption and proof. Not absolutely certain of knowing what ‘will be’ (i.e. deduction), a decision-maker takes note of what ‘was’ (i.e. induction) to arrive at a hypothesis of what ‘might be’ in the present (i.e. abduction). As mentioned, abduction offers the “best” or most intelligent explanation on existing evidence, with the proviso that the hypothesis might change as new information becomes available.

*. The overarching quality of abductive logic is apparent in several WTO cases. In *U.S. – FSC*, for instance, a compliance panel had to determine whether certain amounts “otherwise due” were “foregone” for the purposes of the definition of a subsidy in SCM Art. Art. 1.1(a)(1)(ii).⁶⁴ The panel observed that determining what was “otherwise due” was not only ascertainable “where a purely mechanical exercise of inspection was feasible” since this would give a defendant country “every reason to ensure that there was no automatic or explicit link to the situation of what would otherwise be due.”⁶⁵ Hence, the panel refused to be limited to a strictly inductive inquiry, that is, by examining

litigants to resolve disputes and the duty upon parties to cooperate in attempting settlement. “... both the suspending Member and the implementing Member *share the responsibility* to ensure that the suspension of concessions is not applied indefinitely”: *Canada – Continued Suspension*, WT/DS321/AB/R, para. 348 (16 Oct. 2008) [emphasis added].

⁶² See for instance *EC – Bed Linen*, WT/DS141/RW (29 Nov. 2002).

⁶³ WT/DS50/R, para. 7.39 (5 Sept. 1997) [emphasis added]. See also *Argentina – Footwear*, WT/DS56/R, para. 6.65 (25 Nov. 1997); *U.S. – Clove Cigarettes*, WT/DS406/R, para. 7.276 (2 Sept. 2011).

⁶⁴ SCM Art. 1.1(a)(1)(ii) provides that for the purposes of the SCM “a subsidy shall be deemed to exist if ... (ii) government revenue that is otherwise due is foregone or not collected (e.g. fiscal incentives such as tax credits)”.

⁶⁵ WT/DS108/RW, para. 8.14 (20 Aug. 2001).

what countries had done in fact. At the same time, the panel noted that a purely deductive approach would be undesirable as well. The panel concluded that it would be impossible “simply to assert that revenue is otherwise due in the abstract. It cannot be *presumed*.”⁶⁶ An intermediate approach “grounded in the actual way in which the U.S. tax regime functions”⁶⁷ was called for, one that looked “at the overall situation as an *integrated whole*.”⁶⁸ Based on an abductive approach, the panel was able to conclude that treating the overseas income of certain U.S. manufacturers as non-taxable led to “the foregoing of revenue otherwise due”, as prohibited under the SCM⁶⁹

*. Another example of abductive reasoning occurred in *Brazil – Tyres*.⁷⁰ In that case, the EC brought a challenge against a ban on tire imports maintained by Brazil for environmental purposes. The ban prohibited tire imports generally, but made an exception for tires from MERCOSUR countries. Brazil defended its differential treatment under GATT Art. XX(b) as “necessary to protect human, animal or plant life or health.” The panel noted that under this ‘MERCOSUR exception’ imports did not appear to have been significant and therefore were not “unjustifiable”, as prohibited by the preamble of GATT Art. XX. The panel backed this opinion up with reference to Brazil’s foreign trade statistics.⁷¹ The panel’s analysis was therefore empiric and inductive.

*. On appeal, the Appellate Body faulted the panel for its interpretation of “unjustifiable”, complaining that the panel’s analysis was too empiric. The Appellate Body stated: “... analyzing whether discrimination is “unjustifiable” will usually involve an analysis that relates primarily to the cause and rationale of the discrimination. By contrast, the Panel’s interpretation of the term “unjustifiable” does not depend on the cause or rationale of the discrimination but, rather, is focused exclusively on the assessment of the *effects* of the discrimination.”⁷² The Appellate Body concluded “[t]he Panel’s approach has no support in the text of Article XX and appears to us inconsistent with the manner the Appellate Body has interpreted and applied the concept of “arbitrary or unjustifiable discrimination” in previous cases.”⁷³ The Appellate Body went on to hint at a hybrid quantitative *and* qualitative approach to the issue discrimination, noting that effects are merely “a relevant factor [in discrimination analysis], among others ...”.⁷⁴ A similar hybrid method analysis of quantitative and qualitative, of empiric and rational, is observed in a number of other WTO cases.⁷⁵

⁶⁶ WT/DS108/RW, para. 8.17 (20 Aug. 2001) [emphasis added].

⁶⁷ WT/DS108/RW, para. 8.25 (20 Aug. 2001) [emphasis added].

⁶⁸ WT/DS108/RW, para. 8.23 (20 Aug. 2001) [emphasis added].

⁶⁹ WT/DS108/RW, para. 8.26 (20 Aug. 2001).

⁷⁰ *Brazil – Retreaded Tyres*, WT/DS332/R (12 June 2007).

⁷¹ *Ibid.*, para. 7.288.

⁷² WT/DS332/AB/R (3 Dec. 2007) [emphasis in original].

⁷³ The Appellate Body observed “... we recognize that in certain cases the effects of the discrimination may be a relevant factor, among others, for determining whether the cause or rationale of the discrimination is acceptable or defensible and, ultimately, whether the discrimination is justifiable. ... Taking into account as a relevant factor, among others, the effects of the discrimination for determining whether the rationale of the discrimination is acceptable is, however, fundamentally different from the Panel’s approach, which focused exclusively on the relationship between the effects of the discrimination and its justifiable or unjustifiable character.” *Ibid.*, para. 230. The Appellate Body later added that the panel’s “quantitative approach - according to which discrimination would be characterized as unjustifiable only if imports under the MERCOSUR exemption take place in such amounts that the achievement of the objective of the measure at issue would be “significantly undermined” - is flawed.” *Ibid.*, para. 247.

⁷⁴ WT/DS332/AB/R, para. 230 (3 Dec. 2007).

⁷⁵ For instance in *Korea – Alcoholic Beverages II*, WT/DS/AB75/R (18 Jan. 1999), the Appellate Body eschewed a rigid quantitative analysis. It specifically noted that “an approach that focused solely on the quantitative overlap of competition would, in essence, make cross-price elasticity the decisive criterion in determining whether products are ‘directly competitive and substitutable’”. *Ibid.*, para. 134 [emphasis in original]. It also observed, “we share the Panel’s reluctance to rely unduly on quantitative analyses of the competitive relationship.” *Ibid.* In *Chile – Alcoholic Beverages*, WT/DS87/R (13 Dec. 1999) the panel examined similar factors and noted, somewhat impressionistically, that “when a product is being marketed in ways that suggest that it is in competition with the most upmarket imported distilled products, this is evidence of at least potential competition with those imports.” No quantification of this “potential” was provided. Similarly, in *Philippines – Distilled Spirits*, WT/DS396/R (15 Aug. 2011) the panel found that the products in question, certain imported spirits, were both like and competitive with domestic Philippine products. As part of its analysis, the panel examined several studies put forward by the parties, but noted the difficulty of using econometric studies with limited historical price data. More broadly, on the issue of the protective application of a measure, as prohibited by GATT Art. III:1, in *Japan – Alcoholic Beverages*, WT/DS8/AB/R (4 Oct. 1996), the Appellate Body held that “[the] protective application [of a measure] can most often be discerned from the design, the architecture, and the revealing structure of a measure. The very magnitude of the dissimilar taxation in a particular case may be evidence of such a protective application, as the Panel rightly concluded in this case. Most often, there will be other factors to be considered as well. In conducting this inquiry, panels should give full consideration

*. A further example of abductive reasoning appeared in *U.S. – Steel Safeguards*.⁷⁶ In that case the panel had to determine whether the U.S. had properly imposed a safeguard on steel imports from several sources including the EC. One issue was whether the surge in imports complained of could be attributed to EC-originating steel, something that required the investigating authority to examine plausible alternative arguments about the surge's source.⁷⁷ A qualitative analysis would point to deductive reasoning whereas one that was quantitative would be more inductive and would demand metrification. The SAF is silent on the exact method to be employed. The panel observed:

... in light of the obligations imposed on competent authorities to consider all plausible alternative explanations submitted by the interested parties, we believe that a competent authority may find itself in situations where quantification and some form of economic analysis are necessary to rebut allegedly plausible alternative explanations that have been put forward. While the wording of the provisions of the Agreement on Safeguards does not require quantification in the causal link analysis *per se*, the circumstances of a specific dispute may call for quantification.⁷⁸

The panel immediately added, however, that while “quantification may be desirable, useful and sometimes necessary depending on the circumstances of a case, the Panel recognizes that quantification may be difficult and is less than perfect.”⁷⁹ Consequently it concluded that “the results of such quantification *may not necessarily be determinative*.” Instead, “an overall qualitative assessment that takes into account *all relevant information*, must always be performed.”⁸⁰

*. A useful final observation here is the relative subordination of a quantitative, empiric approach to qualitative ones. In many cases there is a blend of approaches to logic, but even in the most rigorous circumstances the law appears to shy away from a purely metric-driven method. Some idea of this bias was provided in *U.S. – FSC*, where the Appellate Body pronounced on the correct analysis for the “no less favourable” standard of treatment contained in GATT Art. III:4:

The examination of whether a measure involves “less favourable treatment” of imported [goods] within the meaning of Article III:4 of the GATT 1994 must be grounded in close scrutiny of the “fundamental thrust and effect of the measure itself”. The examination cannot rest on simple assertion, but must be founded on a careful analysis of the contested measure and of its implications in the marketplace. At the same time, however, the examination need not be based on the *actual effects* of the contested measure in the marketplace.⁸¹

4. Discussion

*. In light of the above we might think of the relationship between forms of logic in WTO law to be

to all the relevant facts and all the relevant circumstances in any given case.” It labelled this approach a “comprehensive and objective analysis”. Ibid. Similarly, in *Chile – Alcoholic Beverages*, WT/DS87/AB/R, para. 71 (13 Dec. 1999), the Appellate Body added in a broad-brush way that “a measure's purposes, objectively manifested in the design, architecture and structure of the measure, *are* intensely pertinent to the task of evaluating whether or not that measure is applied so as to afford protection to domestic production.” Ibid., para. 71 [emphasis in original]. Noteworthy in all these examples is the way the analysis attempts to be as comprehensive as possible (e.g. “all the relevant facts and all the relevant circumstances”). The mode of reasoning is based on what is known in the present.

⁷⁶ *U.S. – Steel Safeguards*, WT/DS248/R, para. 10.340 (11 July 2003).

⁷⁷ This inquiry is mandated by SAF Art. 4.2(b) which specifies that the safeguard investigation in question must determine “the existence of the causal link between increased imports of the product concerned and serious injury or threat thereof. When factors other than increased imports are causing injury to the domestic industry at the same time, such injury *shall not be attributed* to increased imports.”

⁷⁸ *U.S. – Steel Safeguards*, WT/DS248/R, para. 10.340 (11 July 2003).

⁷⁹ Ibid., para. 10.341.

⁸⁰ Ibid. [emphasis added].

⁸¹ WT/DS108/AB/R, para. 215 (Jan. 14, 2002) [emphasis in original].

expressed as follows:

$$\text{abductive reasoning} = \text{deductive reasoning} + \text{inductive reasoning}$$

The equation is also qualified by the following proviso:

$$\text{deductive reasoning} > \text{inductive reasoning}$$

That is, rationalism and deductive reasoning will generally be more important to the WTO system than empiricism and quantification. This priority subsists for the simple reason that it is difficult for numbers to accurately convey real circumstances and to encompass the potentiality and latency that are so essential to WTO law. To be sure, there will be instances where quantification are critical – rules disciplines, negotiation, renegotiation, retaliation – but these are limited. Even in such situations, as I have demonstrated, WTO decision-makers have displayed a healthy skepticism about reducing the law to a form of “legal mathematics”.

*. At the same time, it is possible to struggle to understand all of the above. Much of it is opaque and counterintuitive. We aim for frameworks to explain what is observed. This may come about in the form of “nested opposition”. The concept of nested opposition was identified by Jack Balkin in 1990 to define “oppositions which also involve a relation of dependence, similarity, or containment between the opposed concepts.”⁸² Balkin defined the concept further as follows:

A nested opposition is a conceptual opposition each of whose terms contains the other, or each of whose terms shares something with the other. The metaphor of “containing” one’s opposite actually stands as a proxy for a number of related concepts - similarity to the opposite, overlap with the opposite, being a special case of the opposite, conceptual or historical dependence upon the opposite, and reproduction of the opposite or transformation into the opposite over time.⁸³

*. What nested opposition stresses are deconstructionist ideas of ‘differance’ and ‘trace’. ‘Differance’ was the term of art used by Jacques Derrida to describe the mutual dependence and differentiation of concepts. ‘Trace’ is the retention of absent concepts that remain present in the understanding of other concepts. Differance and trace are relevant in deconstructionist analysis, which aims to show “to show that the favored or dominant term bears some form of conceptual dependence to the disfavored or subordinated term.”⁸⁴

*. Applying these ideas to the role of logic in WTO law, we observe a conceptual dependence between deductive and inductive reasoning. This dependence emphasizes the primacy of deduction and the subordination of induction. In logical terms deduction is the dominant concept, is generalized and plenary. It is the ‘default’ to which law generally adheres. A legal system would collapse if it didn’t presume many things, including compliance. Induction, by comparison, is the “disfavoured” or “subordinated” concept. It is the exception, something which legal rules reproduce irregularly and inconsistently. In WTO law we have observed how empiricism is limited to certain situations and is handicapped by the nature of the investigative process, which functions within a larger system of dispute settlement.

*. “Trace” is apparent in the way that deductive logic retains some of the elements of its counterpart in inductive logic. Even if deduction is founded in a mental image, that mental image has to come from somewhere. Most often, if we look hard enough, that image will be founded in proof. In WTO law, for instance, the presumption embodied in DSU Art. 3.8 exists for solid reasons. Nullification or

⁸² Jack Balkin, “Nested Oppositions” 99 *Yale L.J.* 1669 at 1671 (1990).

⁸³ *Ibid.*, at 1676.

⁸⁴ *Ibid.*

impairment may not be true in every case of non-compliance, but we know it to be true in most cases. And even trade effects were minimal, the system would still have to deal with the climate of uncertainty created by non-conforming measures, something that cannot be quantified. So proof is dispensed with. This has not, however, stopped panels and the Appellate Body from fact-based assessments.

*. In line with their character as a nested opposition, deduction and induction *relate* to each other symbiotically. If the law is not being determined according to deductive logic, it must be determined according to inductive logic, and vice versa. What is perhaps most intriguing is the possibility of “reproduction”, or “transformation”, between nested opposites. “Trace” is apparent in cases of inductive reasoning where the demand for evidence transitions and gives way to presumptions about what exists in the absence of empirical measurement, as seen in the discussion of ADA Art. 6.10. Some evidence also exists of shifts from deduction to induction in other situations. There are trends and counter-trends in logic, one provoking the other.

*. Together in real-time, the law reasons abductively. It looks back at facts in the past to form a hypothesis about the future – an “intelligent guess” – but always in the present, and always contingently and provisionally. To recall, abductive logic is the logic of what *might be*. With the proper viewpoint, it can be discerned throughout WTO law.

5. Conclusion

*. In this article I have examined the modes of reasoning apparent in WTO law and, secondarily, the question of why, as a body of international economic law, it is not more evidently quantitative. The treaty and experience suggest that WTO law, like many bodies of law, ultimately relies on three forms of logic: deductive, inductive and abductive. The first two work together to generate the third. However, the dominant form of logic in WTO law is deductive and presumptive. In essence, the law is premised on the assumption of a certain state of affairs, most notably perhaps that stable tariffs and other government measures promote well-being.⁸⁵ Along with this, WTO law presumes much else. It presumes, for instance, that the failure to fulfill obligations causes nullification or impairment, that export subsidies are inimical to international trade, and that member states generally comply with their obligations. Each of these assumptions, taken together, is vital to the particular balance struck in the treaty between their obligations and rights.

*. This ‘presumptiveness’ is important to the law’s form and structure. It gives WTO law a certain ideal quality. This idealism may appear artificial and unnatural until we realize that virtually all legal systems must do the same. They must presume a great deal, otherwise the process of the law is consumed with producing proof.

*. At the same time, a number of commentators have expressed periodic disappointment at the fact that WTO law is not more empiric. In their view, the law would be more effective if it could be reduced to absolutes. In this article I have endeavoured to show why that is improbable, why greater quantitativity presents only the ‘mirage’ of accuracy. The call for more empiricism overlooks the fact that the WTO system is only modestly equipped to diagnose what is actually happening in the global trading system at any given moment. The hard fact of empiricism also appears to run against the softer

⁸⁵ Panels have described the security and predictability of WTO concessions as the “basic”, “main”, and “central” purpose of the treaty. See *Argentina – Textiles*, WT/DS56/AB/R, para. 47 (27 March 1998), cited in *EC – Chicken Cuts*, WT/DS269/R, para. 7.319 (30 May 2005); *China – Automobile Parts*, WT/DS339, 340, 342/R, paras. 7.201, 7.460 and note 955 (18 July 2008); *U.S. – Section 301*, WT/DS151/R, para. 7.75 (22 Dec. 1999), cited in *EC – Selected Customs Matters*, WT/DS315/R, para. 7.431 (16 June 2006). An associated idea, the “certainty of market conditions”, has also been identified as the purpose of GATS and the theme of predictability for IP rights holders has been mentioned in relation to TRIPS. In relation to GATS see *United States – Gambling*, WT/DS285/R, para. 6.108 (10 Nov. 2004). See also *China – Payment Services*, WT/DS413/R, para. 7.535 (16 July 2012). Regarding the interpretation of TRIPS see *India – Patents*, WT/DS50/AB/R, para. 58 (19 Dec. 1997). In addition, panels and the Appellate Body have spoken of security and predictability of the trading “environment” as a purpose of the WTO Agreement or of dispute settlement, independent of any mention of concessions and commitments. See *EC – Selected Customs Matters*, WT/DS315/R, para. 7.431 (16 June 2006).

fact that what is undertaken, in many cases, is not winner-takes-all litigation in the manner of a private law suit seeking damages, but “dispute settlement”. Reducing WTO disputes to winners and losers, to black and white, might have the perverse effect of making countries *less* likely to settle and of encouraging compensation as opposed to compliance.

*. On the whole, therefore, panels and the Appellate Body have wisely refrained from moving WTO law in the direction of greater empiricism. Instead, they have pursued a hybrid form of reasoning in abductive logic. Abductive logic employs both presumption and proof to arrive at its conclusions according to the best evidence available. It is open-ended and tentative. Its conclusions are valid until there is additional information. In the meantime, it recognizes that numbers tell us only part of the tale.