REVISITING THE WTO RARE EARTHS DISPUTE—LAW, TRADE, SOVEREIGNTY, & ENVIRONMENTAL SECURITY IN A NETWORKED WORLD

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INTRODUCTION

In 1992, Deng Xiaoping, then-leader of China, reported that:

> [t]here 'is oil in the Middle East; there is rare earth in China.' His comment spawned a crash program to develop and exploit China's vast reserves of [these strategic] metals . . . Seven years after Deng's remarks his successor, Jiang Zemin, ordered the Chinese state to go a step further

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> . . . [by] '[i]mprov[ing] the development and applications of rare earth' . . . 'and [converting] . . . the resource advantage into economic superiority.'[1]

The unstated equivocation of rare earths elements to oil refers to the very high strategic and economic value of the former in the realms of technology and trade. Rare earths not only possess properties that render them valuable from an asset-investment perspective, but they are also employed in the development of military technologies that directly impact a State's national security calculus. Broadly speaking, in the realm of technology rare earths are "vital to many modern technologies, including consumer electronics, computers and networks, communications, clean energy, advanced transportation, health care, environmental mitigation, and national defense."[2] The Chinese State effectively realized Deng Xiaoping's mandate to harness and enhance its resource advantage into economic and strategic superiority over rare earths production for the global market. This realization compelled its trading partners, led by the United States, to file a complaint with the World Trade Organization ("WTO") seeking to rein in China's near virtual monopoly over production.[3] What the complainants termed distortion and manipulation of the market, however, China termed "minerals diplomacy,"[4] a form of soft power that China successfully harnessed to enhance and exert diplomatic, strategic, and economic leverage over its trading partners.[5] Arguing from a

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1. Blake Hounshell, *Is China Making a Rare Earth Power Play?*, FOR. POL'Y (Sept. 23, 2010), *available at* http://blog.foreignpolicy.com/posts/2010/09/23/is_china_making_a_rare_earth_power_play (last visited Nov. 7, 2018)*; see also* CINDY HURST, CHINA'S RARE EARTH ELEMENTS INDUSTRY: WHAT CAN THE WEST LEARN? (2010).

2. U.S. DEP'T OF DEF.: OFF. OF THE INSPECTOR GEN., PROCEDURES TO ENSURE SUFFICIENT RARE EARTH ELEMENTS FOR THE DEFENSE INDUSTRIAL BASE NEED IMPROVEMENT 1 (2014), *available at* https://media.defense.gov/2014/Jul/07/2001713380/-1/-1/1/DODIG-2014-091.pdf (last visited Nov. 8, 2018) [hereinafter PROCEDURES TO ENSURE SUFFICIENT RARE EARTH ELEMENTS].

3. *See* Lesley Stahl, *Modern Life's Devices Under China's Grip? From Smartphones to Cars and Defense Missiles, Modern U.S. Life Depends on Rare Earth Elements but China Dominates the Industry*, CBS NEWS (Mar. 22, 2015), *available at* https://www.cbsnews.com/news/rare-earth-elements-china-monopoly-60-minutes-lesley-stahl/ (last visited Nov. 7, 2018).

4. *See* Thomas E. Ricks, *China's Minerals Diplomacy and You*, FOR. POL'Y (Sept. 30, 2010), *available at* http://ricks.foreignpolicy.com/posts/2010/09/30/china_s_minerals_diplomacy_and_you (last visited Nov. 7, 2018).

5. *See* Esther Pan, *China's Soft Power Initiative*, COUNCIL ON FOR. REL. (May 18, 2006), *available at* https://www.cfr.org/backgrounder/chinas-soft-power-initiative (last visited Nov. 7, 2018) (describing Chinese soft power).

traditional sovereignty and security perspective, wherein the State is supreme in determining policy related to security interests, China claimed its unilateral right to restrict trade in rare earths. The complainants, however, appealed to treaty obligations and employed international trade law to force China to drop its restrictions.

In this work, the rare earths dispute is analyzed as an exemplar of the systemic complexity that undergirds present global affairs, and how "the era of cheap rare earths"[6] reflects a changing global context that impacts mainstays in the realm of law and its role in post-modern international relations, namely the nexus between law, sovereignty, and security in a networked world (hereinafter "LSSN"). This work will analyze the dispute through the lens of complexity and systems theory to flesh out the emerging issues and challenges that States face in a post-modern, interlinked, and highly inter-dependent global context. The dispute will empirically anchor the analysis below, fleshing out how sovereignty and security manifest in present inter-State relations, and how the foregoing are impacted and effectuated in law.

I. THE RARE EARTHS DISPUTE: LAW IN INTERNATIONAL RELATIONS

This dispute highlights the important role that soft power plays in the conduct of foreign policy, and how States adapt to a world wherein hard power capabilities are not feasible, effective, efficient, and/or desirable means to employ in procuring national security and strategic foreign policy objectives. Complainants in the dispute wanted free, fair global trade, no unfair competitive advantages, and demanded that China not "skirt the rules" of the WTO.[7] China, on the other hand, argued that it considered its domestic security concerns—with over a billion people "and the fastest growing economy in the world, China is faced with the challenging task of ensuring it has adequate natural resources to sustain economic growth, while also trying to appease the international community, which has been protesting China's cuts in rare earth export quotas."[8]

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6. *China Exclusive: Experts Say No More Cheap Rare Earths From China*, GLOB. TIMES (Mar. 13, 2012), *available at* http://www.globaltimes.cn/content/700030.shtml (last visited Nov. 7, 2018); *see also China Trade Ministry Increases Rare Earth Export Quota*, BBC NEWS (May 18, 2012), *available at* http://www.bbc.com/news/business-18112986 (last visited Nov. 7, 2018).

7. Julie Pace, *Obama Warns China on Trade Policy-President: Don't 'Skirt the Rules' With Rare Earth Minerals*, DAILY CAMERA (Mar. 13, 2012), *available at* http://www.dailycamera.com/ci_20167633/obama-warns-china-trade- (last visited Nov. 7, 2018).

8. HURST, *supra* note 1, at 18.

China "gradually reduced its annual tonnage of export quotas from 2006 to 2009, then cut the tonnage of allowed exports by more than half in the second half of 2010."[9] China then "increased rare earth export quotas [in 2012]."[10] Relying upon a traditional understanding of sovereignty and power in international relations, China claimed that any export restrictions imposed were in line with its sovereign right to regulate environmental protection, initiate sustainable production, and to privilege Chinese economic and strategic interests over others. Complainants countered this claim by asserting that Chinese protectionism was simply unjustified because export restrictions, regardless of China's concern with domestic environmental issues, were fomenting "trade and investment distorting behavior."[11] China's counter-arguments, rooted in sovereignty as the controlling principle in international relations, were ultimately rejected by the WTO. The WTO's legal interpretation of governing law privileged the trade interests of member States, which superseded China's traditional interpretation of sovereignty and security based on State supremacy within its borders.

The dispute involving global trade and rare earths, the international legal organization charged with its regulation (WTO), and State sovereignty thus provides a working case study to analyze the complexities of law, sovereignty, and security in an increasingly interdependent and inter-connected international system. Due to the interdependent, complex, and systemic nature of global trade, and the international legal mechanism of the WTO to facilitate global trade, the European Union ("EU"), United States, Japan (complainants), and China found that they were all obligated to cooperate to resolve the dispute employing soft power in the form of law, trade, and mutual inter-linked interests that impacted each party's national security.[12] Furthermore, it is important to note and

9. Keith Bradsher, *China to Tighten Limits on Rare Earth Exports*, N.Y. TIMES (Dec. 28, 2010), *available at* https://www.nytimes.com/2010/12/29/business/global/29rare.html (last visited Nov. 7, 2018).

10. *China Trade Ministry Increases Rare Earth Export Quota*, *supra* note 6.

11. Leo W. Gerard, *USW Applauds Administration Trade Actions*, PR NEWSWIRE (Mar. 13, 2012), *available at* https://www.prnewswire.com/news-releases/usw-applauds-administration-trade-actions——requesting-consultations-with-china-on-export-restraints-on-rare-earth-minerals-other-products-signing-legislation-to-ensure-that-government-can-apply-countervailing-duties-to-subsid-142472585.html (last visited Nov. 7, 2018).

12. *See* ENVTL. CHANGE & SEC. PROGRAM, WOODROW WILSON INT'L CTR. FOR SCHOLARS, BACKDRAFT: THE CONFLICT POTENTIAL OF CLIMATE CHANGE ADAPTATION AND MITIGATION 21-22 (Geoffrey D. Dabelko et al. eds, 2013), *available at* https://www.wilsoncenter.org/sites/default/files/ECSP_REPORT_14_2_BACKDRAFT.pdf (last visited Nov. 5, 2018).

analyze the fact that the WTO embodies a cooperative legal mechanism designed to ameliorate the anarchy that permeates international relations. "WTO rules and procedures agreed to by all countries that join the organization and its treaties, offer a structured, law-based system to adjudicate disputes between states—and for states to hold each other accountable to the rules to which all agreed."[13] In the case of rare earths, the complainants shared a common interest: having recourse in a viable and legitimate set of operative rules governing trade relations, as well as ensuring that China, as a member of the WTO, adhered to the rules governing trade relations.[14]

The dispute highlights the fact that the economic and strategic properties of rare earths are part of a broader international system, in which integration of States and their interests find expression in international legal mechanisms, thereby helping States navigate the complexities of a globalized world. Notions of sovereignty, security, and unalloyed supremacy within borders have thus been impacted by soft power in the form of law, broadly speaking. China's reliance on traditional interpretations of each concept, ordering principle (e.g., State supremacy within its borders and placement of its wellbeing above all competing interests), and the complainant's and WTO's rejection of said reliance, indicates how the LSSN differs from a more traditional articulation of bedrock ordering principles in international relations.[15] The dispute's importance is clear: "[i]t demonstrates that the EU, Japan, and the United States can come together to pressure China to change its policies, if those policies do not accord with the global rules."[16] The "global rules" are part of an expansive and complex soft power legal network that have and continue to actively affect State thought and policy in the international system. When considering long-term trade relations, it is in the strategic and economic interests of all parties involved in the dispute to trade with each other. Global trade in an increasingly interdependent and interconnected world poses a challenge to pure *realpolitik* notions of sovereignty. Unlike the relatively straightforward sovereignty argument put forth by

13. Stacy VanDeveer, *Rare Earth Politics, Cooperation, and the WTO*, GERMAN MARSHALL FUND (Mar. 20, 2012), *available at* http://www.gmfus.org/blog/2012/03/20/rare-earth-politics-cooperation-and-wto (last visited Nov. 7, 2018).

14. *See id.*

15. *See* HANS J. MORGENTHAU, POLITICS AMONG NATIONS (7th ed., 2006) (providing a critical analysis of international relations); *see also* ALEXANDER WENDT, SOCIAL THEORY OF INTERNATIONAL POLITICS (1999) (providing a critical analysis of international relations).

16. VanDeveer, *supra* note 13.

China, the challenge in the dispute for complainants was to increase trade networks and volume of trade while avoiding "near total dependence on China—or any single country—for vital materials. When such dependence exists, [trading partners] want to constrain the ability of a monopoly-holder to use that dependence against them."[17] The dispute makes it very clear that rare earths entail high stakes in the global economy, and that governments and industry have substantial political and strategic interests in determining how to interpret the LSSN in the present global system.

The dispute illuminates, among other things, the role of law and non-State actors on the character and content of international relations and foreign policy generally, and international trade and economy specifically. Within the LSSN, the WTO can be viewed as a complex legal cooperative network, which, in turn, is reflective of a complex system view of international relations.[18] The emergence of complex cooperative networks in inter-State relations facilitated changes in how States interact within the context of an international system rooted in anarchy, balance of power, and realpolitik. Complex cooperative networks grounded in soft power present challenges and opportunities for States within the traditional System of States order.[19] Soft power, which plays a significant role in the conduct of inter-State relations, was evident in the case of China, rare earths, and the WTO. Soft power networks like the WTO provide sources for State engagement based on more complex interaction because of the integrative effect that networks (such as economic trading partnerships) have on international order and relations grounded in a traditional hard power System of States paradigm.[20] A Society of States, on the other hand, is premised on soft power (e.g., law and economy).[21] Society includes international network-based mechanisms involving global economy and trade, which substantively impact, expand, and reconfigure the perceptions and behavior of international actors.

Soft power, when contrasted with hard power—namely, the use of force embodied in military capability—differs distinctly because States' influence in international affairs is relational and fluid in nature;

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17. *Id.*

18. Note: The material that follows in the remainder of this section is drawn from MARVIN L. ASTRADA & FÉLIX E. MARTIN, RUSSIA AND LATIN AMERICA: FROM NATION-STATE TO SOCIETY OF STATES 10-45 (2013).

19. *See* HENDRIK SPRUYT, THE SOVEREIGN STATE AND ITS COMPETITORS: AN ANALYSIS OF SYSTEMS CHANGE (1996) (discussing of System of States).

20. *See generally* Adam Watson, *Systems of States*, 16 REV. INT'L STUD. 99 (1990).

21. *See* HEDLEY BULL, THE ANARCHICAL SOCIETY: A STUDY OF ORDER IN WORLD POLITICS (4th ed., 2002) (discussing Society of States).

concepts, perceptions, and interpretation are rooted in a systemic context, giving rise to complex and adaptive behavior. China's rationale for maintaining its sovereign right to regulate rare earths production as it saw fit was rejected by its trading partners which privileged rule of law, trade, open markets, and free trade—in sum, the collective interest of the WTO members over a State's exercise of its full sovereign right to domestic environmental regulation—reflects the rise of complex adaptive behavior brought about, in part, by the rule of law. At its core, soft power reflects a State's capacity to influence other States' policy through persuasion based on mutual self-interests rather than force.[22]

> [P]ower can be wielded in three ways: threat of force (stick), inducement of payments (carrot) or shaping the preferences of others. Soft power eschews the traditional foreign policy implements of carrot and stick, relying instead on the attractiveness of a nation's institutions, culture, politics and foreign policy, to shape the preferences of others.[23]

Soft power found powerful expression in international relations in the form of Complex Cooperative Networks ("CCN").[24] The role of CCNs in inter-State relations was readily observable in the rare earths dispute, wherein the WTO articulated in its ruling (and wherein all parties involved conceded) that the collective interest of the membership outweighed China's sovereign right over economic production. Rule-based legal regimes such as the WTO compromise State sovereignty; in a complex world, China's assertion to exercise pure sovereignty exemplifies what may be termed an antiquated perception of inter-State relations that are increasingly governed by a LSSN rooted in rule-based regimes that seek to enhance and facilitate the collective interests of its members.

Revisiting the rare earths dispute thus provides a case study that illuminates a larger phenomenon in international relations. The dispute is an exemplar of global trade assuming the properties of a transformative mechanism vis-à-vis the societal notion of international organizations that transcends traditional international relations ordering principles. The dispute is an empirical case study that supports the contention that global trade, as a form of soft power and complex adaptation, provides an alternative basis for developing complex, systemic "institutional mechanisms," i.e., CCNs such as the WTO, that directly impact the conduct of States. The dispute thus exemplifies how States are affected by the

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22. *See generally* Joseph S. Nye, Jr., *Soft Power*, 80 FOR. POL'Y 153 (1990) (discussing soft power and its role in international relations).

23. JONATHAN MCCLORY, THE NEW PERSUADERS: AN INTERNATIONAL RANKING OF SOFT POWER 1 (2010); *see generally* Joseph S. Nye, *Public Diplomacy and Soft Power*, 616 ANNALS AM. ACAD. POL. & SOC. SCI. 94 (2008).

24. *See* ASTRADA & MARTIN, *supra* note 18, at 10-45.

transformative shifts ushered in by the diffusion of power in a complex and networked world.

II. A COMPLEX SYSTEMS APPROACH TO INTERNATIONAL RELATIONS: CONCEPTUALIZING & CONTEXTUALIZING THE PRESENT LSSN

How do CCNs emerge, and what enables them to act effectively so that the LSSN is directly impacted by entities such as the WTO? CCNs are premised on the notion of adaptive, evolving systems comprising state relations as opposed to fixed systems of knowledge and understanding.[25] A Complex Adaptive System ("CAS") is comprised of layers of networked, interactive systems of knowledge that inform, complement, and produce opportunities and possibilities for the emergence of CCNs.[26] What exactly is a system? A system can be viewed as "(a) a set of units or elements [that] is interconnected so that changes in some elements or their relations produce changes in other parts of the system, and (b) the entire system exhibits properties and behaviors that are different from those of the parts."[27] A system, individually and collectively, is composed of regularly interacting parts that give rise to systemic activities within an interdependent set of organizational relationships.[28] International relations are comprised of complex, interactive, interdependent, and interconnected systems. In the case of global trade and economy, the interactivity of a variety of variables (parts) to produce a system of interaction, interconnectivity, and engagement (economy) beyond hard power principles of international organization is embodied in the WTO as a CCN. In an international system, parts necessarily become "changed by

25. *See generally* Ludwig Von Bertalanffy, *The History and Status of General Systems Theory*, 15 ACAD. OF MGMT. J. 407 (1972); ASTRADA & MARTIN, *supra* note 18, at 10-45.

26. ASTRADA & MARTIN, *supra* note 18, at 14.

27. ROBERT JERVIS, SYSTEM EFFECTS: COMPLEXITY IN POLITICAL AND SOCIAL LIFE 6 (1997).

28. *See generally* Ervin Laszlo, *The Systems View of the World: A Holistic Vision for Our Time Advances*, *in* SYSTEMS THEORY, COMPLEXITY, AND THE HUMAN SCIENCES (Alfonso Montuori ed., 2nd ed. 1996); ERVIN LASZLO, THE SYSTEMS VIEW OF THE WORLD: THE NATURAL PHILOSOPHY OF THE NEW DEVELOPMENTS IN THE SCIENCES (1972); JAMES ROSENAU, TURBULENCE IN WORLD POLITICS (1990) (providing examples of systems analysis in international law); INIS CLAUDE, POWER AND INTERNATIONAL RELATIONS (1962) (providing examples of systems analysis in international law); MORTON KAPLAN, SYSTEM AND PROCESS IN INTERNATIONAL POLITICS (1957) (providing examples of systems analysis in international law); JACK SNYDER & ROBERT JERVIS, COPING WITH COMPLEXITY IN THE INTERNATIONAL SYSTEM (1993) (providing examples of systems analysis in international law).

their mutual association; hence, their whole becomes more than just the sum of the parts."[29]

Complex networks that produce, and are produced by, systemic interconnectivity are interactive, adaptive, and multidimensional, and broaden possibilities for inter-State engagement. States in the international system can thus be viewed and characterized as consisting of organized, interdependent and complex institutionalized networks[30] that are products and producers of systemic networked interaction(s). A complex adaptive system:

> (1) . . . consists of inhomogeneous, interacting adaptive agents. Adaptive means capable of learning[, transforming, and adapting, and] . . . (2) [a]n emergent attribute of a CAS is a property of the system as a whole which does not exist at the individual elements (agents) level . . . [T]o understand a complex system one has to study the system as a whole . . . [31]
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> [I]ndividual agents (parts or units) [become] the collective base elements of the system that interact and then adapt in response to interactions, thus allowing for maximization of the potential for the individual parts to realize and work cooperatively toward fulfilling common self-interests and goals.[32]

The WTO is an example of a legal CCN established to facilitate global trade and bolster the global economy. It requires a certain degree of surrendering of sovereignty to acquire benefits derived from the WTO as a rule-based regime designed to place free trade at the forefront of States' economic relations. In the rare earths dispute, the WTO functioned as a cooperative mechanism that trumped China's claim to unmitigated sovereignty over its domestic affairs subject to membership in the WTO legal regime.[33] Cooperation embodied in the WTO's rule of law approach to

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29. LUDWIG VON BERTALANFFY, A SYSTEMS VIEW OF MAN ix (Paul A. LaViolette ed., 1981).

30. *See* Ludwig Von Bertalanffy, *supra* note 25; *see generally* Charles McClelland, *The Function of Theory in International Relations*, 4 J. OF CONFLICT RESOL. 303 (1960).

31. E. Ahmed, A. S. Elgazzar, & A. S. Hegazi, *An Overview of Complex Adaptive Systems*, MANSOURA J. MATHEMATICS 1, 1-2 (2005), *available at* https://arxiv.org/pdf/nlin/0506059.pdf (last visited Nov. 9, 2018); *see generally* Kevin J. Dooley, *A Complex Adaptive Systems Model of Organization Change*, 1 NONLINEAR DYNAMICS, PSYCHOL., & LIFE SCI. 69 (1997); M. MITCHELL WALDROP, COMPLEXITY: THE EMERGING SCIENCE AT THE EDGE OF ORDER & CHAOS (1992).

32. ASTRADA & MARTIN, *supra* note 18, at 16; *see generally* HIERARCHY THEORY: THE CHALLENGE OF COMPLEX SYSTEMS (Howard H. Pattee ed.,1973).

33. *See generally* Elizabeth Smythe & Peter J. Smith, *Legitimacy, Transparency, and Information Technology: The World Trade Organization in an Era of Contentious Trade Politics*, 12 GLOB. GOVERNANCE: A REVIEW OF

inter-State relations, within a competitive, yet highly integrated and networked system, contains an outgrowth of States "learning" to ameliorate anarchy and its consequences.

In the case of international relations, interaction, while subject to change and "evolution," also retains degrees of consistency, which enables a network-based system of governance to emerge despite the prevalence of anarchy.[34] In the case of international relations, a systematic set of concepts and practices (tangible and intangible) are utilized by international actors who work in tandem within an interdependent set of organizational relationships to conceive, interpret, articulate, and implement globalist notions of international economic order via CCNs such as the WTO.[35]

In a CAS, the agents as well as the system contain complex adaptive actors that distinguish and learn the differences between optimal and suboptimal outcomes. Complexity and adaptation procure self-similarity on a systemic level. Self-similarity involves the notion that a self-similar object is approximately similar to the system in which it is emplaced, and has similar properties as one or more of the parts that constitute the system—coastlines, for example, are statistically self-similar in that parts of them show the same statistical properties at many scales.[36]

> Self-similarity also applies to States; i.e., individuated sovereignty, for example, finds expression in systemic anarchy—the two are based on the property of sovereignty, each feeding into the other.[37] Self-similarity, within the context of an emergent society of States, enables CCNs to create . . . networked ties of connectivity based on systemic and systematic engagement that creates venues [for] cooperation that, [in turn, has the effect of attenuating the effects] of an anarchical global context based on material power and the balancing of [hard] power to attain a [less

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MULTILATERALISM AND INTL. ORGS. 31 (2006) (discussing legitimacy of WTO and international trade).

34. *See* ASTRADA & MARTIN, *supra* note 18, at 17; *see generally* INTERNATIONAL RELATIONS THEORY AND THE END OF THE COLD WAR (Richard N. Lebow & Thomas Risse-Kappen eds.,1996); EDWARD H. CARR, THE TWENTY YEARS' CRISIS, 1919-1939: AN INTRODUCTION TO THE STUDY OF INTERNATIONAL RELATIONS (Michael Cox ed., 2001).

35. *See* MARVIN L. ASTRADA, AMERICAN POWER AFTER 9/11 1-22 (2010).

36. *See generally* Benoît Mandelbrot, *How Long Is the Coast of Britain? Statistical Self-Similarity and Fractional Dimension*, 156 SCI. 636 (1967).

37. ASTRADA & MARTIN, *supra* note 18, at 18; *see generally* Mandelbrot, *supra* note 36; Raoul R. Nigmatullin et al., *Self-Similarity Principle: The Reduced Description of Randomness*, 11 CENT. EUR. J. PHYSICS 724 (2013); Alexander Wendt, *Anarchy Is What States Make of It: The Social Construction of Power Politics*, 46 MIT PRESS 391 (1992).

> volatile and at times] a temporary cessation of hostilities and contextual volatility.[38]

The fact that international relations take place in an anarchic systemic context does not necessarily imply that there are no degrees of agency available to the constituent components of the system. "States are rarely found in complete isolation from each another. Most inhabit relatively stable systems of other independent states which impinge on their behavior."[39] Within a "System of States" context, while overarching principles that delimit certain structural parameters—namely anarchy, material considerations, use of force, security, and balance of power—States have degrees of agency as to how best to attain policy goals embedded in self-interest and security.[40] Sovereignty, in theory, provides the basis for diversity in State perceptions and behavior. Hence, political, social, and economic organization take a variety of forms in the international system. Within the context of a System or Society of States, agency is both individualized (state level) and collective (systemic level). Within a Society of States, agency produces, or rather is the precursor for, the emergence of a collective intelligence, reflected in CCNs, which, in turn, can be considered the products and producers of cooperation. Indeed, such cooperation manifested in CCN's, such as the WTO, have complex adaptive potential because globalism is rooted in one of the most basic and "universal" structures that under-gird social systems of order, i.e., some form of commerce (trade).[41]

CCNs also impact inter-State relations. A global economic, sociopolitical, and cultural mesh network is not a new phenomenon—indeed, international affairs have been "World Wide Webbed and Internetted [sic] since Rome began to import silks from China in roughly 200 BCE."[42] Yet, the prominence and growing reliance on, and independent efficacy of, CCNs ushered in different modalities of power-diffusion. In the case of the rare earths dispute, China was forced to confront and ultimately concede to the collective interest embodied in the WTO as a rule-based legal regime to effectuate trade interest of all members at the expense of China's sovereign right to determine for itself regulations

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38. ASTRADA & MARTIN, *supra* note 18, at 18.

39. ALEXANDER WENDT, SOCIAL THEORY OF INTERNATIONAL POLITICS 10 (Steve Smith et al. eds., 1999).

40. *See generally* Walter Carlsnaes, *The Agency-Structure Problem in Foreign Policy Analysis*, 36 INT'L STUD. Q. 245 (1992); *see also* Wendt, *supra* note 37, at 335.

41. HOWARD BLOOM, THE GENIUS OF THE BEAST: A RADICAL REVISION OF CAPITALISM 22 (2010).

42. *Id.* at 47.

pertaining to domestic economic affairs and security interests. The WTO thus provides States with an ability to act upon and effectuate specific goal-orientated tasks based on collective interpretations of interests.[43]

CCNs can be classified as having "weak" or "strong" degrees of agency, depending on the level of integration, subject matter, level of expertise, financial resources, and issue-area or topic relevance to the more powerful State actors or agents and interests that transect the international community. Whether weak or strong, agents in a CAS are interactive, complex entities whose contacts and engagement go beyond basic or minimal contacts with other agents in the international or global system. The systemic context of anarchy, their being a lack of an accepted, central, global power formally charged with administering the international system for all agents, establishes a shared space and bounded space of engagement.[44] This shared anarchical space, despite its lack of formal ordering mechanism accepted by all agents (e.g., a compulsory global legal code that is applied and enforced uniformly throughout the entire system) provides a basis for shared cooperative rules of engagement that, in turn, help shape the rules of formation vis-à-vis the character and content of relations and interactions, which further creates ties based on shared knowledge and communication.[45] In the case of international organization and the variegated CCNs, interestingly under a CAS, CCN's assumed degrees of agency that helped lay the foundations for, high degrees of global integration absent within a purely System of States paradigm. CCNs, as alternative sites for the possible resolution of conflict and the basis for cooperative, networked interaction, provide alternative infrastructures upon which to base State-to-State interaction. As Flores-Mendez notes, "[i]nfrastructures provide the regulations that agents follow to communicate and to understand each other, thereby enabling knowledge sharing."[46] Infrastructures in the form of networks (e.g., legal regimes) are viable means to integrate States, and give rise to formal mechanisms that can help better effectuate a collective or shared interest. CCNs, as agents helping to facilitate governance, present States with the potential for new social structures, new cultural logics, more centralized and cooperative approaches, solutions to shared problems, new international

43. *See generally* Roberto Flores-Mendez, *Towards the Standardization of Multi-Agent System Architectures: An Overview*, 5.4 ACM CROSSROADS 18 (1999).

44. For a critical discussion of anarchy, *see generally* Pat Moloney, *Hobbes, Savagery, and International Anarchy*, 105 AM. POL. SCI. REV. 189 (2011).

45. ASTRADA & MARTIN, *supra* note 18, at 20.

46. *Id.*

norms, and alternative means to obtain objectives and define purpose and identity.[47]

III. THE LSSN, THE STATE & THE INTERNATIONAL SYSTEM[48]

Soft power based networks, as products of globalization processes, have helped integrate States to an unprecedented degree.[49] The WTO is premised on establishing long-term networks of cooperation in the realm of global trade. Through institutionalized rule-based CCNs, States systemically engage each other through basic, minimal contacts such as trade, with interaction taking place among politically organized units that are "self-conscious and self-regulating entities."[50] A System of States forms when at least two States engage in minimal contacts that impact the respective States' perceptions and conduct, with each State acting in concert with one another in a systemic context.[51] Society develops when States go beyond basic minimal contacts and engage in complex behavior, effectively networking and integrating the agents and interests that form the working parts of systemic interaction. Each social entity, system, and society, is involved in and based upon the nature and degree of interaction among politically organized units. These interactions are based upon overarching ordering principles that guide relations and behavior within an order. Under a society paradigm of global order, "the more states are in contact with one another and agree to the same principles, the more they homogenize."[52] The WTO can be viewed as an expression of this phenomenon.

The traditional System of States has been committed to sovereignty, to preserving the integrity of State supremacy within designated

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47. *See generally* Neil MacCormick, *Beyond the Sovereign State*, 56 MODERN L. REV. 1 (1993); Robert O. Keohane & Joseph S. Nye, Jr., *Transnational Relations and World Politics: An Introduction*, 25 INT'L ORG. 329 (1971).

48. Note: The material that follows in the remainder of this section is drawn from ASTRADA & MARTIN, *supra* note 18.

49. For a discussion of the precursor to this state of affairs as manifested in the present, *see* Louis W. Pauly, *The Institutional Legacy of Bretton Woods: IMF Surveillance, 1973–2007*, *in* ORDERLY CHANGE: INTERNATIONAL MONETARY RELATIONS SINCE BRETTON WOODS 189-210 (David Andrews ed., 2008).

50. Barry Buzan, *From International System to International Society of States: Structural Realism and Regime Theory Meet the English School*, 47 INT'L ORG. 327, 327-31 (1993).

51. ASTRADA & MARTIN, *supra* note 18, at 27; *see also* BULL, *supra* note 21, at 9-10.

52. HELGA TURKU, ISOLATIONIST STATES IN AN INTERDEPENDENT WORLD 37 (2009).

geopolitical borders. Sovereignty has been the preeminent value and ordering principle of international relations since the Peace of Westphalia.[53] A commitment to sovereignty drove the internal and external dimensions of the modern State. Modern States adhered to absolutist notions of sovereignty in their internal policy choices and external policy and military objectives. The Westphalia notion of sovereignty, intricately linked to the nation as a constitutive feature of the State, to welfare as the legitimating drive of the State, and to the balance of powers has been a key structural component of States' external strategy.[54] In the present era of international relations, a structural transformative shift took place, and rigid adherence to notions of geopolitical borders and sovereignty are "gradually losing the central role they played in the modern era."[55] Since the institutionalization of the global, political, and economic order after WWII, the organization and management of world affairs were premised on an intimately networked, integrated global liberal-economic system. Globalization has become a product as well as producer of the complex super-network and sub-networks emerging on the world stage that, in turn, fomented a Society of States. Society indicates a substantive transformation of international order that involves grafting societal notions onto the preexisting System of States.

Sovereignty and security have been jointly and severally impacted by law as manifested in the rise of CCNs and their impact on inter-State relations. The use of CCNs to obtain strategic interests contributes to the complexity of State perception and behavior, as an analysis of the rare earths dispute illustrates. CCNs have become more and more relevant to statecraft, and provide viable alternatives to (sometimes) counterproductive use of resources and negative effects of employing force to obtain a State's goals. Continued use of trade, investment, and cooperative ventures in all aspects of relations has informed the "learning" of States and other agents in the system. This learning involves embracing values and conduct not always in line with a purely States system view of international order, as is the case in the rare earths dispute. Indeed, universal notions of human rights, justice, and the renunciation of war as a tool of foreign policy (e.g., the Kellogg-Briand Act) constitute examples of the type of values expressed in CCNs and take hold in the present

53. For a discussion of the significance of the Peace of Westphalia for international relations, *see generally* Derek Croxton, *The Peace of Westphalia of 1648 and the Origins of Sovereignty*, 21 INTL. HISTORY REV. 569 (1999).

54. Ari Afilalo & Dennis Patterson, *Statecraft, Trade and the Order of States*, 6 CHICAGO J. INT'L L. 725, 730 (2006).

55. *Id.* at 731.

configuration of international order and inter-State relations.[56] The high degrees of "intensification of worldwide social relations, which link distant localities in such a way that local happenings are shaped by events occurring miles away, and vice versa,"[57] are comprised of a CAS that is itself the product of the innumerable fusions that are taking place among and between various CCN sub-systems.[58]

Trade dramatically affects the fabric of the State's system. Global economic ties have been established through intense and intertwined CCNs, such as the WTO. Because CCNs possess this potential, they pose challenges to a States system conception of international order. Challenges, however, do not imply incompatibility or irreconcilable differences. Indeed, it seems that States "learned" how to harness the power of CCNs for obtaining strategic interests and other non-security-related goals. The social principles that animate and underlie CCNs, namely cooperation, have political, social, and ideological implications for the conduct of international affairs from a State's system perspective.[59]

CCNs represent an emergent shift from "government" to "governance," effectuating a "significant erosion of the boundaries separating what lies inside a government and its administration and what lies outside them."[60] The use and primacy of force, and a sovereign's decision to employ force in international relations, certainly does not become effaced from inter-State relations, but various complexities and externalities based on intimately and inextricably integrated networks now come into play in addition to the use of force and the accumulation and projection of material power.[61] Machiavelli's notion that gold does not win wars, for example, perhaps represents an antiquated concept due to a globalized economy, wherein the power of CCNs to significantly impact and contour international affairs through soft power has become a viable proposition.[62]

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56. *See, e.g.*, INTERNATIONAL CRIME & JUSTICE (Mangai Natarajan ed., 2010).

57. ANTHONY GIDDENS, THE CONSEQUENCES OF MODERNITY 64 (1990).

58. ASTRADA & MARTIN, *supra* note 18, at 30.

59. *See generally* Anne-Marie Slaughter, *International Law in a World of Liberal States*, 6 EUR. J. INTL. L. 503 (1995); Anne-Marie Slaughter, Andrew S. Tulumello, & Stepan Wood, *International Law and International Relations Theory: A New Generation of Interdisciplinary Scholarship*, 92 AM. J. OF INTL. L. 367 (1998).

60. Martin Shapiro, *Administrative Law Unbounded: Reflections on Government and Governance*, 8 IND. J. GLOBAL LEGAL STUD. 369, 369 (2001); *see generally* Roy J. Eidelson, *Complex Adaptive Systems in the Behavioral and Social Sciences*, 1 REV. OF GEN. PSYCHOL. 42 (1997).

61. ASTRADA & MARTIN, *supra* note 18, at 39.

62. *See generally* RICHARD K. BETTS, CONFLICT AFTER THE COLD WAR, ARGUMENTS ON CAUSES OF WAR AND PEACE (2nd ed. 2004).

Accordingly, a CAS perspective provides a conceptual framework for critically analyzing the changes that came about in the LSSN nexus due, in part, to the rise of complex CCNs, such as the WTO. The WTO is part of a networked system that enables "'[n]ew ways of seeing' that 'lead to new ways of being . . . [In a global economy, CCNs] are our lenses, our looking glasses, and our tools. They can refashion more than the way we see . . . [they] can reshape reality."[63] One need not to subscribe to idealism to observe the possibility for concepts and ideas to substantively and substantially impact thought and practice. New ways of perceiving international actors, State relations, non-State actors in global governance, the use of soft power strategies and technologies, as well as the very fabric of order on the world stage, are integrated into "new" rules of formation under a Society of States ethos.[64] International affairs thus comprise "a domain of interlocked (intercalated and mutually triggering) sequences of States, established and determined through . . . interactions between structurally-plastic state-determined systems."[65] Basic, minimal contacts provide the basis for the evolution of more complex, intricate, and inextricable ties that transcend mere self-interest or minimal basic contact. In the case of the dispute, China attempted to employ the traditional states system lens to claim its sovereign right to reject WTO members' complaint regarding its economic and strategic policies pertaining to rare earths. The WTO's ruling, as well as China's acquiescence, illuminates a reconfiguration of the LSSN from a purely sovereignty-based perception of international relations generally, and international trade specifically.

As discussed below, China casted its argument against the complaint in terms of sovereignty as understood in the traditional sense of the term, such as the one posited by Jean Bodin. For Bodin, "sovereignty is the most high, absolute, and perpetual power over the citizens and subjects in a Commonwealth, which the Latins call *Majestas*."[66] Furthermore, for Bodin,

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63. ASTRADA & MARTIN, *supra* note 18, at 39 (quoting BLOOM, *supra* note 41, at 373).

64. *See* MICHEL FOUCAULT, ARCHAEOLOGY OF KNOWLEDGE AND DISCOURSE ON LANGUAGE 38 (1972); *see also* Francisco J. Varela, *Autonomy and Autopoiesis*, *in* SELF-ORGANIZING SYSTEMS: AN INTERDISCIPLINARY APPROACH 15 (Gerhard Roth & Helmut Schwegler eds., 1981).

65. Humberto R. Maturana, *The Organization of the Living: A Theory of the Living Organization*, 7 INT'L J. OF MAN-MACHINE STUD. 313, 316 (1975).

66. *Jean Bodin,* STAN. ENCYCLOPEDIA PHIL. (July 30, 2018), *available at* http://plato.stanford.edu/entries/bodin/#4 (last visited Nov. 9, 2018).

> a sovereign is one who is exempt from obedience to the laws of his predecessors and more importantly, those issued by himself. Sovereignty rests in being above, beyond or exempted from the law . . . exception from being subject to the law is the quintessential condition of sovereignty.[67]

A State exercising supreme power and authority over a geopolitical and legally defined, recognized territory, while possessing a monopoly over the use of force to compel obedience, under-girded the notion of sovereignty employed by China in its counter-argument. Sovereignty enables a State to take actions that always place its weal at the apex of competing interests.[68] Military capacity, natural resources, geographic considerations, technological capacity, level of economic development, the projection of force and coercive power—these factors are inextricably linked with the perpetuation and augmentation of sovereign State power in a System of States.

Conflict, violence, and war—mainstays on the world stage—have, among several other reasons, been waged by the State to protect basic territorial integrity, which are inextricably linked with sovereignty. In turn, these mainstays are intimately associated with other key System of States ordering precepts, namely balance of power, rational/strategic thought and interests, and military power as the *sine qua non* of State power.[69] Societal notions of order, premised on soft power, such as the institutionalization of diplomacy, cooperation, and the instauration and connectivity of States via CCNs result in complex networks that have the effect of hard wiring State and non-State actors in unprecedented ways, and are antithetical to rigid and static notions of a territoriality and a singular focus on traditional notions of an LSSN based in a Systems of States view of world order. In a Society of States, CCNs thus become nodes of connectivity, fostering the proliferation of sophisticated, interactive,

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67. Erik Empson, *Jean Bodin on Sovereignty*, GENERATION ONLINE, *available at* http://www.generation-online.org/p/fpbodin1.htm (last visited Nov. 13, 2018).

68. The discussion that follows about strategic thought and interests is drawn from MARVIN L. ASTRADA, STRATEGIC CULTURE: CONCEPT AND APPLICATION 5-6 (2010).

69. For discussions of how each of the aforementioned concepts impact sovereignty in a system of states paradigm, *see generally* JEAN BODIN, ON SOVEREIGNTY: FOUR CHAPTERS FROM THE SIX BOOKS OF THE COMMONWEALTH (Julian H. Franklin ed., 1992); J. A. HALL, STATES IN HISTORY (1986); JOSEPH R. STAYER, ON THE MEDIEVAL ORIGINS OF THE MODERN STATE (1970); F. H. HINSLEY, SOVEREIGNTY (2nd ed., 1986); NICHOLAS G. ONUF, *Sovereignty: Outline of a Conceptual History*, 16 ALTERNATIVES: GLOB., LOC., POL. 425 (1991); Janice Thomson, *State Sovereignty in International Relations: Bridging the Gap Between Theory and Empirical Research*, 39 INTL. STUD. Q. 213 (1995); Andreas Osiander, *Sovereignty, International Relations, and the Westphalian Myth*, 55 INT'L ORG. 251 (2001).

mutually dependent and supportive networks. In the modern States system, CCNs function as data connectors, based primarily on reciprocity, contracts (rules), economic and rational self-interest, creating global governance structures such as the WTO. Global governance "includes international rules or laws, norms or 'soft law,' and structures such as formal international organizations (IGOs), as well as improvised arrangements that provides decision-making processes, information gathering and analytic functions, dispute settlement procedures, operational capabilities for managing technical and development assistance programs, relief aid and force deployments."[70]

IV. THE RARE EARTHS DISPUTE: CONTEXTUALIZING THE LSSN IN A COMPLEX, NETWORKED WORLD

Rare earth elements ("REE"):

> [have been on] the list of strategic mineral stock for the US and other western governments. Many years ago the US closed its own Mountain Pass mines of rare earths in California, and had long relied on China's supply to meet domestic demand. The reasons for the US to choose this approach were sound: cheap international price, domestic protest over mining pollution, and apparently, strategic resource conservation.[71]

The REE dispute, for all of the parties involved, stemmed from access: complainants demand greater access to China's REE supply of processed minerals, and China sought to restrict access to its supply and production of processed REEs because its environmental interests take priority over complainants' collective economic interest(s). China accounts for approximately 97 percent of world output of REEs.[72]

What is it, then, about REEs that make them so invaluable to all the parties involved in the dispute? REEs are comprised of minerals with magnetic and conductive properties used in a multitude of industries—from missile technology to smart phones.[73] They contain 17 chemical elements in the periodic table: the 15 lanthanides (lanthanum, cerium, praseodymium, neodymium, promethium, samarium, europium,

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70. MARGARET P. KARNS & KAREN A. MINGST, INTERNATIONAL ORGANIZATIONS: THE POLITICS AND PROCESSES OF GLOBAL GOVERNANCE 4 (2004).

71. Gu Bin & Xu Chengjin, *What If WTO Appellate Body Makes Mistakes: A Critique of Raw Materials and Rare Earths*, 3 CHINA LEGAL SCI. 123, 124 (2015).

72. Marc Humphries, Cong. Res. Serv., R41347, *Rare Earth Elements: The Global Supply Chain* 14 (2013).

73. *See* Claire L. McLeod & Mark. P. S. Krekeler, *Sources of Extraterrestrial Rare Earth Elements: To the Moon and Beyond*, *in* CRITICALITY OF THE RARE EARTH ELEMENTS: CURRENT AND FUTURE SOURCES AND RECYCLING 110-37 (Simon M. Jowitt ed., 2018).

gadolinium, terbium, dysprosium, holmium, erbium, thulium, ytterbium, and lutetium) plus the elements scandium and yttrium.[74] REEs also include tungsten and molybdenum.[75]

> Tungsten, for example, is used in electronics, automotive, aerospace and medical technologies. China produces 91% of the world's tungsten. Molybdenum is a metallic element used for filaments in light bulbs. China produces 36% of the world's molybdenum. [These elements] are not actually 'rare,' and can be found in other countries — including the U.S. — but they are [notoriously] difficult to mine [and process] safely. About a third of the world's rare earth deposits are in China but the country controls around 97% of production, in part due to its lower labor costs and less stringent environmental regulations.[76]

The significance of REEs revolves around their vital use in various industries and products deemed crucial for global commerce and national defense—in particular, industries engaged in weapons technology R&D, electronics, and renewable-energy sources. In the realm of and military ordnance, REEs are sought after because "of their unique magnetic and electrochemical properties[.] REEs help DOD [(U.S. Department of Defense)] weapons systems perform with reduced weight and energy consumption; or give them greater efficiency, performance, miniaturization, durability, and thermal stability."[77] The Office of the Inspector General for the DOD found that REEs directly affect U.S. national security.[78]

> For example, dysprosium and neodymium are used in the targeting capabilities of the Joint Direct Attack Munition. The Joint Direct Attack Munition is a low-cost guidance kit that converts existing unguided "dumb" bombs into accurately guided, near-precision, "smart" weapons. The munition's tail fin assembly control motor actuators contain neodymium-iron-boron magnets that direct the bomb precisely to its target.

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74. *EU Challenges China's Export Restrictions on Rare Earths*, EUROPA (Mar. 13, 2012), *available at* http://europa.eu/rapid/pressReleasesAction.do?reference=MEMO/12/182&format=HTML&aged=0&language=EN&guiLanguage=en (last visited Nov. 5, 2018); *see also* Peter Lloyd, *The WTO, China and Rare Earths: Where to From Here?*, THE CONVERSATION (Mar. 28, 2012), *available at* http://theconversation.edu.au/the-wto-china-and-rare-earths-where-to-from-here-5921 (last visited Nov. 5, 2018).

75. *See generally* MOLYBDENUM AND TUNGSTEN ENZYMES: BIOCHEMISTRY (Russ Hille, Carola Schulzke, & Martin L Kirk, eds., 2017).

76. Irene Chapple, *Why Minerals Dispute Threatens Electronics Industry*, CNN (Mar. 14, 2012), *available at* https://www.cnn.com/2012/03/13/business/rare-earths-china-u-s-/index.html (last visited Nov. 5, 2018).

77. PROCEDURES TO ENSURE SUFFICIENT RARE EARTH ELEMENTS, *supra* note 2, at 1.

78. *See id.* at 2.

> Dysprosium is added to enhance the ability of the magnets to maintain their magnetic properties at high temperatures.[79]

Additionally,

> [REEs] feature unique magnetic, heat-resistance and phosphorescence properties. They are used to directly produce highly efficient magnets, metal alloys, phosphors, optical material, battery material, ceramics, [and] special abrasive powders . . . While rare earths often constitute a small share of the finished product, most of the time they are non-substitutable (and even if so, with consequences in the form of redesigned and/or more costly final product). Their non-availability can lead to the disruption of whole value chains.[80]

A multitude of mass-produced products crucial for commerce employ REEs, including computers, smart phones, tablets, disk drives, solar panels, hybrid car batteries, energy-efficient lighting, LCD screens, cars and engines, petroleum, medical equipment, jet engines, and wind turbines.[81]

In a formal complaint filed with the WTO in March 2012, the United States, EU, and Japan accused China of violating WTO trade rules by improperly manipulating the rare earths market to distort global market prices of REEs.[82] The joint complaint embodied an unprecedented concerted cooperative action based on shared interests articulated and implemented via a formal legal mechanism (the WTO).[83] China, however,

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79. *Id.*

80. Mamta Badkar, *China's Rare Earth Export Restrictions Might Be Violating International Trade Rules*, BUS. INSIDER (Mar. 14, 2012), *available at* http://www.businessinsider.com/china-rare-earth-exports-wto-complaint-2012-3 (last visited Nov. 5, 2018).

81. Doug Palmer & Sebastian Moffett, *U.S., EU, Japan Take on China at WTO Over Rare Earths*, REUTERS (Mar. 13, 2012), *available at* http://www.reuters.com/article/2012/03/13/us-china-trade-eu-idUSBRE8 2C0JU20120313 (last visited Nov. 5, 2018); *see also* Request for Consultations by the United States, *China–Measures Related to the Exportation of Rare Earths, Tungsten and Molybdenum*, WTO Doc. WT/DS431/1 (Mar. 15, 2012); Elisa Baroncini, *The China-Rare Earths WTO Dispute: A Precious Chance to Revise the China-Raw Materials Conclusions on the Applicability of GATT Article XX to China's WTO Accession Protocol*, 4 CUADERNOS DERECHO TRANSNACIONAL 49, 51 (2012).

82. *See generally* Request for Consultations by the United States, *China—Measures Related to the Exportation of Rare Earths, Tungsten and Molybdenum*, WTO Doc. WT/DS431/1_G/L/982 (Mar. 15, 2012); Request for Consultations by Japan, *China—Measures Related to the Exportation of Rare Earths, Tungsten and Molybdenum*, WTO Doc. WT/DS433/1_G/L/984 (Mar. 15, 2012); Request for Consultations by the European Union, *China—Measures Related to the Exportation of Rare Earths, Tungsten and Molybdenum*, WT/DS432/1_G/L/983 (Mar. 15 2012).

83. *See generally* Request for Consultations by the United States, *China—Measures Related to the Exportation of Rare Earths, Tungsten and Molybdenum*, *supra* note 82; Request for Consultations by Japan, *China—Measures Related to the Exportation of Rare Earths, Tungsten and Molybdenum*, *supra* note 82; R Request

defended its restrictive REE production regime and trade practices on the sovereign and security basis of preventing harm to its people and domestic environmental degradation; such claims, if found valid, would haven fall under the General Exceptions of General Agreement on Tariffs and Trade ("GATT") Article XX. The Exceptions can be viewed as a legal mechanism to preserve the sovereign power of the State to exercise its police powers independently of oversight from other States in an international law context. The complainants alleged that: (1) China's restrictive export controls on REEs purposefully benefited its domestic manufacturers, negatively impacting WTO trade partners; (2) the measures distorted and hindered competitive free trade; (3) China exercised an unfair trade advantage; and (4) the measures served to exert pressure on international firms to move their operations to China through export curbs violating WTO trade rules.[84]

The REE dispute raised several questions pertaining to the interpretation of sovereignty and security in China's decision to implement restrictive measures based on its sovereign authority. China's response to the complaint found its basis in Article XX, which provides a legal policy space for articulating arguments for a sovereign right to regulate a State's internal affairs of an economic, environmental, security, and strategic nature. By interpreting the LSSN from a System of States perspective, China felt it had the discretion to implement environmental protection measures by restricting international trade in REEs to, among other concerns, "promote the conservation of environmental resources harmed by production of those goods."[85]

China appeared to have a prima facie Article XX defense.[86] However, considering prior rulings in similar cases, the overarching trade interests of WTO member States served to displace the sovereign right to address environmental concerns, thus negating a successful Article XX defense. In short, sovereignty was not found to be at the apex of ordering principles and concepts. The trade priorities of WTO Member States

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for Consultations by the European Union, *China—Measures Related to the Exportation of Rare Earths, Tungsten and Molybdenum*, *supra* note 82.

84. Palmer & Moffett, *supra* note 81.

85. Sanford Gaines, *The WTO's Reading of the GATT Article XX Chapeau: A Disguised Restriction on Environmental Measures*, 22 U. PA. J. INT'L ECON. L. 739, 741 (2001).

86. *See generally* Danielle Spiegel Feld & Stephanie Switzer, *Whither Article XX? Regulatory Autonomy Under Non-Gatt Agreements After China-Raw Materials*, 38 YALE J. INTL. L. ONLINE 16 (2012), *available at* https://cpb-us-w2.wpmucdn.com/campuspress.yale.edu/dist/8/1581/files/2017/01/o-38-feld-switzer-whither-article-xx-2lbtpe9.pdf (last visited Nov. 4, 2018).

superseded the sovereign rights and interests of China. In its final report, the WTO Panel (equivalent to a trial court), in light of GATT Art. XI (quantitative restrictions) and GATT Art. XX(g) (general exceptions—exhaustible natural resources), found that:

> China's export quotas on rare earths, tungsten, and molybdenum were inconsistent with GATT Art. XI. The Panel also concluded that the export quotas were not justified under the exception in GATT Art. XX(g), which allows WTO Members to implement GATT-inconsistent measures 'relating to the conservation of exhaustible natural resources.'[87]

The Appellate Body (equivalent to a court of appeals) upheld the Panel's findings, stating,

> [the] panel rightly considered that it should focus on the measures' design and structure rather than on their effects in the marketplace, although it was not required to consider market effects [and] further concluded that the burden of conservation did not have to be evenly distributed, for example, between foreign consumers, on the one hand, and domestic producers or consumers, on the other hand.[88]

China asserted its sovereign right to environmental regulation and national production quotas as being unassailable.[89] However, the Panel found China's trade measures inconsistent with WTO rules.[90] As interpreted and implemented in the REE dispute, WTO rules, as a form of international law and regulation, an expression of soft power, and reflective of collective interests, are exemplary of a changing international landscape. Such changes are directly impacting traditional interpretations of the LSSN. The REE dispute represents a case study that highlights how soft power manifests in CCNs, and the role it assumes in complicating traditional notions of international order and relations where sovereignty once reigned supreme.

The complainants alleged that China "hoarded" REEs, which illegally increased the global prices of REE while lowering prices domestically, essentially creating massive and unfair trade advantages in China's favor that violate the legal obligations imposed by the GATT on China.[91] By filing the complaint, the complainants attempted to exert pressure on China to abolish its restrictive export limits on REE production (mining

87. Panel Report, *China—Measures Related to the Exportation of Rare Earths, Tungsten and Molybdenum*, WTO Doc. WT/DS431 (adopted Dec. 3, 2015).

88. *Id.*

89. Charles Kilby, *China's Rare Earth Trade: Health and the Environment*, 218 CHINA Q. 540, 540 (2014).

90. *Id.*

91. Chapple, *supra* note 76.

and refining of REE products destined for the global market).[92] China, however, claimed exemption from WTO regulations because the restrictions primarily consisted of, or rather were based on, domestic environmental and security concerns. China therefore invoked GATT Article XX's Exceptions Clause. The complainants, on the other hand, framed the issue as strictly trade-based (protectionist), whereas China framed the issue through the lens of a sovereign as an environmental protection concern.

With respect to REEs (as well as tungsten and molybdenum), the complainants alleged that China violated the following WTO trade provisions: the imposition of export duties; the imposition of export quotas and other quantitative restrictions; the imposition of other restrictions such as the right to export based on licenses, prior export experience, minimum capital requirements, and "other conditions that appear to treat foreign invested entities differently from domestic entities"; the maintenance of minimum export prices, through the examination and approval of contracts and offered prices, and through the administration and collection of the export duties, "in a manner that is not uniform, impartial, reasonable, or transparent"; and the imposition and administration of restrictions through unpublished measures.[93]

China's restrictive REE export regime allegedly violated the following under the GATT: (1) GATT Article VII: "Valuation for Customs Purposes"; (2) GATT Article VIII: "Fees and Formalities connected with Importation and Exportation"; (3) GATT Article X: "Publication and Administration of Trade Regulations"; (4) GATT Article XI: "General Elimination of Quantitative Restrictions"; (5) various commitments within the Protocol on the Accession of the People's Republic of China (specifically Paragraph 11.3); and (6) various commitments within the Report of the Working Party on the Accession of China.[94]

The complainants alleged unfair treatment under GATT because non-Chinese entities (i.e., WTO member States) suffered undue economic detriment due to illegal "export restrictions, discriminatory commercial operating rules within China, the setting of unofficial minimum

92. *See* Mayuko Yatsu, *Revisiting Rare Earths: The Ongoing Efforts to Challenge China's Monopoly*, THE DIPLOMAT (Aug. 29, 2017), *available at* https://thediplomat.com/2017/08/revisiting-rare-earths-the-ongoing-efforts-to-challenge-chinas-monopoly/ (last visited Nov. 4, 2018).

93. Gareth Hatch, *The WTO Rare Earths Trade Dispute: An Initial Analysis*, TECH. METALS RES. (Mar. 28, 2012), *available at* http://www.technetalsresearch.com/the-wto-rare-earths-trade-dispute-an-initial-analysis/ (last visited Nov. 4, 2018).

94. *Id.*

export prices (what some might call price fixing) and an overall lack of transparency concerning the implementation of the measures in question."[95] According to then-U.S. Trade Representative Ron Kirk, China made "export restraints more restrictive, resulting in massive distortions and harmful disruptions in supply chains for these materials throughout the global marketplace."[96] Furthermore, Mr. Kirk alleged that "[b]ecause China is a top global producer for these key inputs [(REEs)] its harmful policies artificially increase prices for the inputs outside of China while lowering prices in China."[97] Because some REEs "can be purchased inside China at about 10 percent of global market prices, the United States, EU, and Japan are claiming that China is giving preferential treatment to domestic companies," and China's steep export tax (up to 25 percent) and quotas placed on REEs exports are very "problematic" if free and fair trade transpires between China and its WTO trading partners.[98]

The EU alleged in 2012 that China's REE quota announcements:

> are further tightening [restrictions,] and are a clear signal in the wrong direction' . . . Foreign companies pay up to twice as much as Chinese firms for rare earth metals . . . The EU directly imports 350 million Euros worth of rare earths from China each year, and also brings in products of far greater value containing rare earths from Japan and elsewhere. The damage done to European manufacturing runs into billions of Euros . . . because it was [and remains] nearly impossible to diversify away from Chinese supply.[99]

According to the EU and other sources, in 2012 China produced 97 percent of all rare earths for the global market.[100] This figure, for the most part, was accepted by the community-at-large (i.e., member States and the REE industry) as an accurate estimate of China's global production

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95. *Id.*

96. Palmer & Moffett, *supra* note 81.

97. *EU, US, Japan Take 'Rare Earth' Dispute With China to WTO*, NEWS AU (Mar. 14, 2012), *available at* http://www.news.com.au/technology/eu-us-japan-take-rare-earth-dispute-with-china-to-wto/news-story/1a7fb7e54d256caf207c760d0cc57a94 (last visited Nov. 5, 2018).

98. *Rare Earths Dispute Now Before WTO,* JAPAN TIMES (Mar. 27, 2012), *available at* https://www.japantimes.co.jp/opinion/2012/03/27/editorials/rare-earths-dispute-now-before-wto/#.WwcPf9PwZL4 (last visited Nov. 5, 2018); *see also* Tom Miles & Doug Palmer, *Analysis: Grow By the Rules, Rare Earth Rivals Tell China*, REUTERS UK (Mar. 19, 2012), *available at* https://uk.reuters.com/article/us-trade-rareearths/analysis-grow-by-the-rules-rare-earth-rivals-tell-china-idUKBRE82I0B020120319 (last visited Nov. 5, 2018).

99. Palmer & Moffett, *supra* note 81.

100. *US, EU, Japan Challenge China on Rare Earths*, INT'L CTR. FOR TRADE & DEV. (Mar. 15, 2012), *available at* https://www.ictsd.org/bridges-news/bio-res/news/us-eu-japan-challenge-china-on-rare-earths (last visited Nov. 5, 2018).

output. This state of affairs was viewed as problematic from a fair-trade perspective because China had a virtual monopoly on producing REE, and it could engage in "price fixing" if it wanted to protect its domestic industry from free and fair trade to the detriment of China's global trading partners.

> Most of the time, rare earths cannot be substituted without resulting in a redesigned and more costly product . . . 'Their non-availability can lead to the disruption of whole value chains.' China has gradually tightened export restrictions on the materials through raising export taxes and 'drastically reducing the export quota' . . . In 2010, China reduced the quota by 32% for domestic companies and 54% for foreign-invested companies.[101]

In light of the virtual Chinese monopoly,

> [Japan also] expressed a sense of urgency to secure new non-Chinese supplies of REEs since [a] September 2010 maritime incident with China and the claim of a Chinese supply embargo of REEs and other materials. Japan's primary end-use application of REEs includes polishing (20%), metal alloys (18%), magnets (14%), and catalysts (12%) — much different than that of the United States. Japan receives 82% of its REEs from China. Forty percent of China's REE exports go to Japan and 18% to the United States.102

Japan's concerns were reasonable because REEs are virtually indispensable to Japan's manufacturing industry, and China made no visible effort to increase Japan's access to REEs at what Japan considered fair market prices. Additionally,

> [i]n 2010, China slashed rare earths exports by 40 percent. It also temporarily suspended such exports to Japan after bilateral relations deteriorated following a September 2010 incident in which a Chinese trawler rammed into two Japan Coast Guard patrol ships inside Japanese territorial waters near the Senkaku Islands in the East China Sea.[103]

In sum, Japan felt vulnerable because of China's near-monopoly on REE production and joined the United States and EU in demanding the dismantlement of China's restrictive export regime.

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101. *Obama Announces WTO Case Against China Over Rare Earths*, CNN (Mar. 13, 2012), *available at* http://www.cnn.com/2012/03/13/world/asia/china-rare-earths-case/index.html (last visited Nov. 5, 2018).

102. Humphries, *supra* note 72, at 19; *see also Rare Earths Dispute Now Before WTO*, *supra* note 98.

103. *Rare Earths Dispute Now Before WTO, supra* note 98; *see also* Roland Buerk, *Japan Seeks New Options on Rare Earths*, BBC (Nov. 10, 2010), *available at* http://www.bbc.co.uk/news/world-asia-pacific-11677802 (last visited Nov. 5, 2018); Cecilia Jamasmie, *U.S., Japan and the E.U. Dispute China's Decision on Rare Earths at the WTO*, MINING (Mar. 13, 2012), *available at* http://www.mining.com/u-s-japan-and-the-e-u-dispute-chinas-decision-on-rare-earths-at-the-wto/ (last visited Nov. 5, 2018).

V. The WTO & GATT ARTICLE XX—RECONFIGURING THE LSSN (?)

The REE dispute highlights the deep complexity of the LSSN in international relations by documenting the role of the WTO in negotiating the complex interactions between collective trade interests, members' sovereignty, and members' security priorities as they relate to environment and population—and the indelible effects that trade and development practices have and will continue to have on the environment and States' interpretation of sovereign power.[104] Prior to the WTO, the GATT's founding purpose consisted of facilitating free trade on a global scale; the two remain viable legal regimes that States employ to ameliorate the effects of anarchy on the conduct of global trade.

> Driven by the philosophy of a market economy, [GATT's] main objective was economic growth, to be achieved by providing trade rules and a framework for trade liberalization. GATT also provides for environmental exceptions in Article XX . . . [although] GATT was negotiated [primarily] to combat protectionist trade barriers . . . Obligatory upon member states, GATT essentially forbids any country to discriminate between like products of other countries.[105]

The GATT, at the most basic level, is comprised of three foundational principles: (1) most favored nation status (Article I); (2) the national treatment obligation (Article III); and (3) the obligation of States elimination of quantitative restrictions on trade (Article XI).[106] The incorporation of Article XX's environmental exceptions, however, creates a potential viable policy space and legal instrument to prevent trade from riding roughshod over a State's sovereign power to designate environmental issues and concerns as security issues. Article XX can be viewed as a collective acknowledgment that trade does not occur in a vacuum. Indeed, the Preamble of the WTO "recognizes that trade is not an end in itself, but rather that sustained economic growth must be pursued in the broader context

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104. For a discussion on networks, international organizations, and law, *see generally* Kal Raustiala, *The Architecture of International Cooperation: Trans-governmental Networks & the Future of International Law*, 43 V.A. J. OF INT'L L. 1 (2002).

105. Shawkat Alam, *Trade-Environment Nexus in GATT Jurisprudence: Pressing Issues for Developing Countries*, 17 BOND L. REV. 1, 1-2 (2005); *see generally* THE WTO & GLOBAL GOVERNANCE: FUTURE DIRECTIONS (Gary P. Sampson ed., 2008).

106. Alam, *supra* note 105, at 6-8.

of sustainable development and protection of the environment."[107] Moreover,

> [t]he WTO has formally established the Committee on Trade and Environment to identify the relationship between trade and environmental measures and to make recommendations for modifications of the rules of the multilateral trading system . . . [the] WTO acknowledges that trade liberalization has implications for the environment and recognizes the need to preserve the environment, something the old GATT did not.[108]

So what exceptions does Article XX provide? Article XX states, in pertinent part, that,

> [s]ubject to the requirement that such measures are not applied in a manner which would constitute a means of arbitrary or unjustifiable discrimination between countries where the same countries prevail, or a disguised restriction on international trade, nothing in this Agreement shall be construed to prevent the adoption or enforcement by any contracting party of measures: . . . *(b) necessary to protect human, animal or plant life or health; . . . [or] (g) relating to the conservation of exhaustible natural resources if such measures are made effective in conjunction with restrictions on domestic production or consumption* (emphasis added).[109]

It is important to note that Article XX's exceptions are just that—exceptions, not positive rules whereby States can opt out of legal obligations imposed by the GATT. When considering exceptions, one must keep in mind that the WTO/GATT, when analyzing disputes, focuses on *how a product is produced*, or the mode of production. Mode of production is key to any exceptions analysis.

> How the product was made is usually *not* relevant. In GATT jurisprudence . . . lumber is lumber, whether or not it was made from trees harvested in an environmentally sound manner; and a strawberry is a strawberry, whether or not it was grown in fields treated with methyl bromide. *In contrast, the production process is very important from an environmental protection point of view. Thus, proper treatment of PPMs [Processes or Production Methods] under GATT is one of the core issues in the trade and environment debate* (emphasis added).[110]

The terms "environment" or "environmental" are not explicitly stated in Article XX. However, environmental concerns and issues—as a basis for exemption from WTO regulatory measures—can be

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107. Bruce Neuling, *The Shrimp-Turtle Case: Implications for Article XX of GATT and the Trade and Environment Debate*, 22 LOY. L.A. INT'L & COMP. L. REV. 1, 1 (1999).

108. Alam, *supra* note 105, at 3.

109. *Article XX: General Exceptions*, WTO (2012), *available at* https://www.wto.org/english/res_e/booksp_e/gatt_ai_e/art20_e.pdf (last visited Nov. 4, 2018).

110. Neuling, *supra* note 107, at 7-8.

extrapolated from the protection of flora and fauna and preservation of exhaustible natural resources. Security interests are certainly implicated in the exercise of a State's sovereign power to protect its environment, broadly construed, to preserve its integrity, borders, and effectuate public safety.[111] Does the fact that Article XX fails to explicitly incorporate "environment" attenuate its effectiveness? Generally speaking, the drafting and legislative history of Article XX suggest that Article XX purpose for enactment did not include providing a safe haven for (securitized) environmental issues/concerns.[112] "Despite the current recognition, the original GATT agreement . . . did not consider the environmental effects of its trade rules on the production of goods. Rather, environmental protectionism was treated as a non-tariff trade barrier."[113] The intent of the initial drafters was thus meant to construe Article XX narrowly, limiting it to protecting member States from unsanitary products (tainted foodstuffs), and allowing States to preserve exhaustible natural "stock" resources (oil).[114] Thus, Article XX was not "intended to shield environmental measures from basic GATT disciplines."[115]

Article XX's negotiation and legislative history, however, does not control its modern interpretation. More specifically, under Article 31(1) of the Vienna Convention, a "treaty shall be interpreted in good faith in accordance with the ordinary meaning to be given to the terms of the treaty in their context and in the light of its object and purpose."[116] The language of Article XX, while not written with broad environmental protection purposes, contains some degree of flexibility; for example, one may query what exactly constitutes "necessary" measures, what are "exhaustible" resources exactly, and what does the term "natural resources" encompass?[117] However, the WTO has interpreted Article XX beyond the legislative and negotiating history. The WTO stated,

> the phrase 'exhaustible natural resources' under Article XX(g) has been interpreted [by various Panels and the Appellate Body] broadly to include not only 'mineral' or 'non-living' resources but also living species which may be susceptible to depletion, such as sea turtles. To support this interpretation, the Appellate Body noted, in the *US — Shrimp* case,

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111. *See* Michael Ming Du, *The Rise of National Regulatory Autonomy in the GATT/WTO Regime*, 14 J. INT'L ECON. L. 639, 639 (2011).

112. Steve Charnovitz, *Exploring the Environmental Exceptions in GATT Article XX*, 25 J. WORLD TRADE 37, 38-47 (1991).

113. Alam, *supra* note 105, at 2.

114. Charnovitz, *supra* note 112, at 44-46.

115. Neuling, *supra* note 107, at 15.

116. Vienna Convention on the Law of Treaties art. 31, May 23, 1969, U.N.T.S. 1155.

117. *See* Neuling, *supra* note 107, at 16-18.

> that modern international conventions and declarations made frequent references to natural resources as embracing both living and non-living resources . . . [T]o demonstrate the exhaustible character of sea turtles, the Appellate Body noted that sea turtles were included in Appendix 1 on species threatened with extinction of the Convention on International Trade in Endangered Species of Wild Fauna and Flora.[118]

A. WTO Case Law: Interpretation of Article Xx's Exceptions Vis-À-Vis Environmental Security Concerns

According to the WTO, the Appellate Body's (hereinafter "AB") and Panels' jurisprudence vis-à-vis Article XX embodies a recognition by the WTO of the necessity for States to maintain a balance between the right of a member State to invoke an environmental exception and the trade rights of other member States under the GATT.[119] "The Appellate Body's GATT Article XX jurisprudence has done much to reassure members that, at least with respect to measures falling within the scope of the GATT, there is sufficient regulatory space at the domestic level for states to enact measures that, though trade-restrictive, serve pressing public policy goals."[120] According to the WTO,

> members' autonomy to determine their own environmental objectives has been reaffirmed on a number of occasions (e.g. in *US — Gasoline*, *Brazil — Retreaded Tires*). The Appellate Body also noted, in the *US — Shrimp* case, that conditioning market access on whether exporting members comply with a policy unilaterally prescribed by the importing member [—under certain limited conditions discussed below—] was a common aspect of measures falling within the scope of one or other of the exceptions of Article XX. In past cases, a number of policies have been found to fall within the realm of these two exceptions: policies aimed at reducing the consumption of cigarettes, protecting dolphins, reducing risks to human health posed by asbestos, reducing risks to human, animal and plant life and health arising from the accumulation of waste tires (under Article XX(b)); and policies aimed at the conservation of tuna, salmon, herring, dolphins, turtles, clean air (under Article XX(g)).[121]

The AB "established early on in its jurisprudence that two prerequisites must be satisfied for an Article XX defense to succeed[:]" (1) the

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118. *WTO Rules and Environmental Policies: GATT Exceptions*, WTO, *available at* http://www.wto.org/english/tratop_e/envir_e/envt_rules_exceptions_e.htm (last visited Nov. 5, 2018).

119. *Id.* For a discussion on the negative effects of attenuating WTO regulatory power in favor of State autonomy, *see generally* Joost Pauwelyn, *Squaring Free Trade in Cultural Goods and Services with Chinese Censorship: The WTO Appellate Body Report on China—Audiovisuals*, 11 MELB. J. INT'L L. 119 (2008).

120. Spiegel Feld & Switzer, *supra* note 86, at 18.

121. *Id.*

measure in question must fall under a sub-paragraph of Article XX; and (2) must also "satisfy the chapeau of Article XX. To pass that bar, a measure must not result in 'arbitrary or unjustifiable discrimination between countries where the same conditions prevail' or be a 'disguised restriction on international trade.'"[122] In the case of *U.S.–Standards for Reformulated and Conventional Gasoline*, the AB found that in "order [for] the justifying protection of Article XX [to] be extended . . . the measure at issue must not only come under one or another of the particular exceptions—paragraphs (a) to (j)—listed under Article XX; it must also satisfy the requirements imposed by the opening clauses of Article XX."[123] Furthermore, in the case of *U.S.–Import Prohibition of Certain Shrimp and Shrimp Products*, the AB found that Article XX's Preamble provides an effective check for measures that are, or may be, provisionally permissible under the Article XX's subparagraphs.[124]

While not common, member States that unilaterally "impose export restrictions while tackling the uncontrolled exploitation of natural resources may [legally] violate their GATT obligations under Article XI."[125] The WTO's rulings in:

> the Tuna-Dolphin case, the Thai Cigarettes case, the Canadian Fisheries case, the Danish Beer Bottle case and the Reformulated Gasoline case have all indicated that discriminatory trade practices will not be tolerated under GATT, even if there is some justification for them on environmental, health or conservation grounds. The non-discrimination principle, with its narrow scope, [generally] does not permit parties to impose import or export restrictions for the sake of environmental protection (emphasis added.)[126]

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122. *Id.* at 16.

123. Appellate Body Report, *United States—Standards for Reformulated and Conventional Gasoline,* ¶ 22, WTO Doc. WT/DS2/AB/R (adopted May 20, 1996).

124. *See* Appellate Body Report, *United States—Import Prohibition of Certain Shrimp and Shrimp Products*, ¶ 118-19, WTO Doc. WT/DS58/AB/R (adopted Nov. 21, 2001).

125. Alam, *supra* note 105, at 8; *see also* Panel Report, *Canada—Measures Affecting Exports of Unprocessed Herring and Salmon*, ¶ 5, WTO Doc. L/6268 - 35S/98 (adopted Mar. 22, 1988) (noting that under the 1976 Canadian Fisheries Act, Canada maintained regulations prohibiting the exportation or sale for export of certain unprocessed herring and salmon. The U.S. claimed that the measures were inconsistent with GATT Article XI. Canada responded that the measures were part of a system of fishery resource management aimed at preserving fish stocks, and that the end goals or motivators of enacting the measures fell under the environmental exception of Article XX(g). The Panel Report found that the measures were not covered by Article XX(g).).

126. Alam, *supra* note 105, at 11-12; *see also* Panel Report, *United States—Restrictions on Imports of Tuna,* WTO Doc. WT/DS29/R (adopted June 16, 1994); Panel Report, *United States—Restrictions on Imports of Tuna*, ¶ 5.15, WTO Doc.

Such rulings are in line with privileging the collective economic interests of WTO Members over the sovereign and security interests of a single State. Environment logically falls under the umbrella of security because it constitutes a State's geophysical sovereign territory. Environmental degradation at the expense of collective economic interests in the free flow of trade is indicative of how CCNs, such as the WTO, have impacted traditional notions of sovereignty and security. CCNs directly affect the LSSN in present global politics and international relations. In the case of the WTO, the balance between facilitation of trade, a collective interest, and preservation of State regulatory autonomy over economic-related security concerns is tilted in favor of the former.

Under the GATT, six dispute proceedings addressing environmental measures or human health-related measures vis-à-vis Article XX took place: *U.S.–Canadian Tuna*, *Canada–Salmon and Herring*, *Thailand–Cigarettes*, *U.S.–Tuna* (Mexico), *U.S.–Tuna* (EC) and *U.S.–Automobiles*. "Out of the six reports, three remained un-adopted (*U.S.–Tuna* (Mexico), *U.S.–Tuna* (EEC) and *U.S.–Automobiles*). So far, under the WTO, three disputes led to the adoption of panel and Appellate Body reports (*U.S.–Gasoline*, *U.S.–Shrimp* and *EC–Asbestos*)."[127] The three major cases

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WT/DS21/R-39S/155 (adopted Sept. 3, 1991); Panel Report, *Thailand—Restriction on Importation of and Internal Taxes on Cigarettes*, WTO Doc. WT/DS10/R-37S/200 (adopted Oct. 5, 1990); Panel Report, *United States—Prohibition of Imports of Tuna and Tuna Products from Canada*, WTO Doc. WT/L/5198-29S/91 (adopted Dec. 22, 1981); Appellate Body Report, *United States—Standards for Reformulated and Conventional Gasoline*, WTO Doc. WT/DS2/AB/R (adopted Aug. 26, 1997); Case C-47/88, Comm'n v. Kingdom of Den., 1990 E.C.R. I-04509.

127. WTO Comm. on Trade and Env't, *Note by the Secretariat: GATT/WTO Dispute Settlement Practice Relating To GATT Article XX, Paragraphs (b), (d) AND (g)*, ¶ 3, WTO Doc. WT/CTE/W/203 (adopted Mar. 8, 2002) [hereinafter *Note by the Secretariat*]; *see also* Panel Report, *Prohibition of Imports of Tuna Fish and Tuna Products from Canada*, WTO Doc. WT/L/5198-29S/91 (adopted Dec. 22, 1981); Panel Report, *Canada—Measures Affecting Exports of Unprocessed Herring and Salmon*, *supra* note 125; Panel Report, *Thailand—Restrictions on Importation of and Internal Taxes on Cigarettes*, WTO Doc. WT/DS10/R-37S/200 (adopted Oct. 5, 1990); Panel Report, *United States—Restrictions on Imports of Tuna*, WTO Doc. WT/DS29/R (adopted June 16, 1994); Panel Report, *United States—Taxes on Automobiles*, WTO Doc. WT/DS31/R (adopted Oct. 11, 1994); Appellate Body Report, *United States—Standards for Reformulated and Conventional Gasoline*, WTO Doc. WT/DS2/AB/R (adopted May 20, 1996); Panel Report, *United States—Standards for Reformulated and Conventional Gasoline*, WTO Doc. WT/DS2/R (adopted May 20, 1996); Appellate Body Report, *United States—Import Prohibition of Certain Shrimp and Shrimp Products*, WTO Doc. WT/DS58/23 (adopted Nov. 26, 2001); Panel Report, *United States—Import Prohibition of Certain Shrimp and Shrimp Products*, WTO Doc. WT/DS58/23 (adopted Nov. 26, 2001); Appellate Body Report, *European Communities—Measures Affecting Asbestos and Asbestos-Containing Products*, WTO Doc. WT/DS135/AB/R (adopted Mar. 12, 2001); Panel Report,

decided (discussed below) by the AB interpreting Article XX exceptions pertaining to environment are: *European Communities–Measures Affecting Asbestos and Asbestos-Containing Products*; *U.S.–Import Prohibition of Certain Shrimp and Shrimp Products* (Shrimp-Turtle case); and *United States–Standards for Reformulated and Conventional Gasoline*.[128]

It is important to reiterate that Article XX has not been interpreted as providing positive legal rules, but rather limited legal exceptions. This distinction is important, as it affects, or rather limits, the ability of States to issue legally valid unilateral measures based on environmental protection measures rooted in security concerns. In the case of *U.S.–Wool Shirts and Blouses*, the AB stated that Article XX contains, "limited exceptions from obligations under certain other provisions of the GATT 1994, not positive rules establishing obligations in themselves."[129] Defenses are limited to a narrow range of exceptions. According to the WTO, when examining the relationship between an environmental measure that restricts trade and Article XX defenses,

> [t]o determine whether a measure is "necessary" to protect human, animal or plant life or health under Article XX(b), a process of weighing and balancing a series of factors has been used . . . including the contribution made by the environmental measure to the policy objective, the importance of the common interests or values protected by the measure and the impact of the measure on international trade. If this analysis yields a preliminary conclusion that the measure is necessary, this result must be confirmed by comparing the measure with its possible alternatives, which may be less trade restrictive while providing an equivalent contribution to the achievement of the objective pursued.[130]

For instance, in the *Brazil–Retreaded Tyres* case, the AB found that environmental protection remained the actual motive behind Brazil's import ban on retreaded tires.[131] The AB found that although the import ban

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European Communities—Measures Affecting Asbestos and Asbestos-Containing Products, WTO Doc. WT/DS135/AB/R (adopted Mar. 12, 2001).

128. Appellate Body Report, *European Communities—Measures Affecting Asbestos and Asbestos-Containing Products*, WTO Doc. WT/DS135/AB/R (adopted Mar. 12, 2001); Appellate Body Report, *United States—Import Prohibition of Certain Shrimp and Shrimp Products*, WTO Doc. WT/DS58/AB/R (adopted Oct. 12, 1998); Appellate Body Report, *United States—Standards for Reformulated and Conventional Gasoline*, WTO Doc. WT/DS2/9 (adopted May 20, 1996).

129. Appellate Body Report, *United States—Measure Affecting Imports of Woven Wool Shirts and Blouses from India*, WTO Doc. WT/DS33/AB/R (adopted Apr. 25, 1997); *see also Note by the Secretariat*, *supra* note 127, ¶ 7.

130. *WTO Rules and Environmental Policies: GATT Exceptions*, *supra* note 118.

131. Appellate Body Report, *Brazil—Measures Affecting Imports of Retreaded Tyres*, ¶ 151, WTO Doc. WT/DS332/AB/R (adopted Dec. 3, 2007).

measure enacted affected trade obligations, it nonetheless "apt[ed] to produce a material contribution to the achievement of its objective," or rather to obtain an appreciable reduction in the volume of waste tires in Brazil.[132] The AB found that the measure in question directly addressed Brazil's overarching policy to protect the environment by reducing tire waste, and proposed remedial alternatives did not constitute genuine alternatives to Brazil's import ban because they failed to contribute to reducing the accumulation of waste tires in Brazil.[133] The AB also noted and emphasized that:

> certain complex environmental problems may be tackled only with a comprehensive policy comprising a multiplicity of interacting measures. The [AB] pointed out that the results obtained from certain actions—for instance, measures adopted in order to address global warming and climate change—can only be evaluated with the benefit of time.[134]

In the *EC–Asbestos* case, the AB found that no reasonably available alternative existed to the trade prohibition in question.[135] The measure, according to the AB, clearly constituted a design to maintain and protect health and wellbeing as defined by the EC. The AB regarded the measure to be "both vital and important in the highest degree" vis-à-vis protection of health, and it "made the point that the more vital or important the common interests or values pursued, the easier it was to accept as necessary measures designed to achieve those ends."[136] The AB also expounded upon when a trade measure relates to the protection of natural resources: it relates when a "substantial relationship between the measure and the conservation of exhaustible natural resources" has been established.[137] A member State must establish that the measure enacted "reasonably relates" to Article XX(b) and/or (g). Additionally, to show justification under Article XX(g), a measure affecting imports must be applied "in conjunction with restrictions on domestic production or consumption."[138]

In the *U.S.–Gasoline* case, the United States enacted a measure to regulate the composition and emission effects of gasoline with the

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132. *Id.*

133. *WTO Rules and Environmental Policies: GATT Exceptions*, *supra* note 118.

134. *Id; see generally* Thomas J. Schoenbaum, *International Trade and Protection of the Environment: The Continuing Search for Reconciliation*, 9 AM. J. INT'L L. 268 (1997).

135. *WTO Rules and Environmental Policies: GATT Exceptions*, *supra* note 118.

136. *Id.*

137. *Id.*

138. *Id.*

express purpose of reducing its domestic air pollution.[139] The AB held that a defending party:

> must demonstrate that the measure (i) falls under at least one of the ten exceptions—paragraphs (a) to (j)—listed under Article XX, and (ii) satisfies the requirements of the preamble, i.e. is not applied in a manner which would constitute 'a means of arbitrary or unjustifiable discrimination between countries where the same conditions prevail,' and is not 'a disguised restriction on international trade.' These are cumulative requirements.[140]

The AB found that the measure in place was "primarily aimed at" the policy goal of conservation of clean air "and thus fell within the scope of paragraph (g) of Article XX. As far as the second requirement of paragraph (g) is concerned, the AB ruled that the measure met the 'even-handedness' requirement, as it affected both imported and domestic products."[141] This case is particularly relevant for analyzing Article XX defenses because the AB set forth a two-tier test for interpreting when an Article XX defense can be successfully invoked. The AB found that to justify an Article XX defense:

> the measure at issue must not only come under one or another of the particular exceptions—paragraphs (a) to (j)—listed under Article XX; it must also satisfy the requirements imposed by the opening clauses of Article XX. The analysis is, in other words, two-tiered: first, provisional justification by reason of characterization of the measure under [one of the exceptions]; second, further appraisal of the same measure under the introductory clauses of Article XX.[142]

In short, the AB acknowledged the viability of Article XX and its invocation as a justification for granting an environmental exception based on the integrity of geophysical territory of a Member State. The AB found that Article XX:

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139. Appellate Body Report, *United States—Standards for Reformulated and Conventional Gasoline* 20-21, WTO Doc. WT/DS2/AB/R (adopted May 20, 1996).

140. *Note by the Secretariat*, *supra* note 127, ¶¶ 9. The Panel Report in *U.S.–Gasoline* ¶ 6.20, states that under Article XX(b):

> (1) [T]hat the *policy* in respect of the measures for which the provision was invoked fell within the range of policies designed to protect human, animal or plant life or health; (2) that the inconsistent measures for which the exception was being invoked were *necessary* to fulfill the policy objective; and (3) that the measures were applied in conformity with the requirements of the *introductory clause* of Article XX.

Id. at ¶ 13.

141. *WTO Rules and Environmental Policies: GATT Exceptions*, *supra* note 118; *see also*, Appellate Body Report, *United States—Standards for Reformulated and Conventional Gasoline*, *supra* note 139.

142. Appellate Body Report, *United States—Standards for Reformulated and Conventional Gasoline*, *supra* note 139.

> contains provisions designed to permit important state interests— including the protection of human health, as well as the conservation of exhaustible natural resources—to find expression . . . Indeed, in the preamble to the WTO Agreement and in the Decision on Trade and Environment . . . there is specific acknowledgement to be found about the importance of coordinating policies on trade and the environment. WTO Members have a large measure of autonomy to determine their own policies on the environment (including its relationship with trade), their environmental objectives and the environmental legislation they enact and implement. So far as concerns the WTO, that autonomy is circumscribed only by the need to respect the requirements of the General Agreement and the other covered agreements.[143]

The AB:

> held that the baseline establishment rules contained in the Gasoline Rule fell within the terms of Article XX(g), but failed to meet the requirements of the chapeau of Article XX. It noted that the chapeau addressed not so much the questioned measure or its specific contents as such, but rather the manner in which that measure is applied. Accordingly, the chapeau is animated by the principle that while Members have a *legal right* to invoke the exceptions of Article XX, they should not be so *applied* as to lead to an abuse or misuse.[144]

In the *U.S.–Shrimp* case, the AB considered the trade-restrictive measure in question "fairly narrowly focused" and did not consist of a blanket prohibition of:

> [the] importation of shrimp imposed without regard to the consequences to sea turtles; thus, the Appellate Body concluded that the regulation in question was a measure 'relating to' the conservation of an exhaustible natural resource within the meaning of Article XX(g). The Appellate Body also found that the measure in question had been made effective in conjunction with the restrictions on domestic harvesting of shrimp, as required by Article XX(g).[145]

The AB followed a three-step analysis in interpreting Article XX(g): (1) "a measure concerned with the conservation of 'exhaustible natural resources' within the meaning of Article XX(g)"; (2) "Article XX(g) requires that the measure sought to be justified be one which 'relat[es] to' the conservation of exhaustible natural resources"; and (3) "a measure made effective in conjunction with restrictions on domestic production or consumption."[146]

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143. *Id.* at 30.

144. *Note by the Secretariat*, *supra* note 127, ¶ 40.

145. *WTO Rules and Environmental Policies: GATT Exceptions*, *supra* note 118, at 3.

146. *Note by the Secretariat*, *supra* note 127 (citing Appellate Body Report, *US—Shrimp*, ¶¶ 127, 135, & 143-45).

When interpreting Article XX, the AB determined that an exception qualifies as discrimination:

> not only when countries in which the same conditions prevail were treated differently, but also when the application of the measure at issue [does] not allow for any inquiry into the appropriateness of the regulatory program for the conditions prevailing in the exporting countries. [The AB also found that in interpreting Article XX exceptions] *the failure of the United States to engage the appellees, as well as other Members exporting shrimp to the United States, in serious, across-the-board negotiations with the objective of concluding bilateral or multilateral agreements for the protection and conservation of sea turtles, before unilaterally enforcing the import prohibition against the shrimp exports of those Members, was also taken into account* (emphasis added).[147]

The AB concluded that measures enacted by member states that treat WTO members "differently"—in the *Shrimp* case (initially), by the United States adopting a cooperative approach vis-à-vis protection of sea turtles with some member States but not with others—render such measures applied in an unjustifiable discriminatory manner.[148] Serious, or rather actual, multi/bilateral negotiation in the common undertaking of these terms between member States is thus considered to be requisite for a measure to qualify under Article XX.[149] In the context of the REE dispute, it is questionable whether China's unilateral action was conducted with any degree of serious multi/bilateral negotiations with the United States and other aggrieved Members, or that its measures were the only viable means of protecting China's security interests regarding environmental degradation. China chose to ignore the complexity of inter-State relations under a networked cooperative framework, seeking traditional ordering precepts to insulate itself from its (cooperative) treaty obligations.

VI. CHINA'S RESPONSE: SOVEREIGNTY & SECURITY

China's response to the WTO complaint framed the issue of restrictive exports in terms of environmental protection and resource conversation measures that are (or should be) exempt from WTO regulatory

147. *Note by the Secretariat*, *supra* note 127, ¶ 49.

148. *See* Jayati Srivastava & Rajeev Ahuja, *Working Paper No. 78—Mainstreaming Environment Through Jurisprudence: Implications of the Shrimp-Turtle Decision in the WTO for India and Other Developing Countries*, INDIAN COUNCIL FOR RES. ON INTL. ECON. REL. (April 2002), *available at* http://icrier.org/pdf/jaya-rajeev.pdf (last visited Nov. 8, 2018).

149. *Id.*

oversight.[150] China countered the complaint, stating that export curbs were necessary to control the very serious environmental damage stemming from REE mining and production, as well as the need to conserve supplies of an exhaustible natural resource.[151] The basis of each of these concerns rests on sovereign and security interests of the State as traditionally understood. According to Foreign Ministry spokesman Liu Weimin, "based on environmental protection and in order to achieve sustainable development, China carries out management policies over the export of rare earths."[152] China contended that, under Article XX, it should be allowed to maintain its restrictive export regime.[153] China claims that since its deposits of REE account for approximately 36 percent of global deposits, the demand of producing 90+ percent of global supply is simply not sustainable, and it is not in China's best interests, from a security and resource-conversation perspective, to provide unrestricted access to its REE supply.[154] According to Su Bo, a Chinese Industry Vice Minister, "Beijing is looking to further tighten its policies for the sector. 'China will continue to clean up the rare-earth industry, expand rare earth environmental controls, strengthen environmental checks, and implement stricter rare earth environmental policies.'"[155] In sum, Article XX (b) and (g) should apply because China seeks to curb exports based on direct and immediate threats to its environment, and seeks to preserve its supply of an exhaustible natural resource while protecting its people from the miasmic effects of REE mining and refining. These claims are in line with a sovereignty-based perception of international order. Although the WTO has a place in the conduct of States' affairs, it nonetheless should not and cannot supersede the basal ordering principles of the Westphalia-inspired modern System of States.

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150. *See generally China—Measures Related to the Exportation of Rare Earths, Tungsten, and Molybdenum-Notification of Another Appeal by China*, WTO Doc. WT/DS431/10 (Apr. 24, 2014); Romi Jain, *China: Enmeshed in or Escaping the WTO?*, 21 AM. J. OF CHINESE STUD. 185 (2014).

151. *See generally* Brigid Gavin, *China's Growing Conflict with the WTO: The Case of Export Restrictions on Rare Earth Resources*, 48 INTERECONOMICS REV. OF EUR. ECON. POL'Y 254 (2013).

152. *EU, US, Japan Take 'Rare Earth' Dispute With China to WTO*, *supra* note 97.

153. *See generally* Mitsuo Matsushita, *Export Control of Natural Resources: WTO Panel Ruling on the Chinese Export Restrictions of Natural Resources*, 3 TRADE, L. & DEV. 267 (2011).

154. *Rare Earths Dispute Now Before WTO*, *supra* note 98; *see also China Sets Up Rare Earth Body to Streamline the Sector*, BBC UK (Apr. 8, 2012), *available at* http://www.bbc.co.uk/news/business-17655146 (last visited Nov. 3, 2018).

155. *China Sets Up Rare Earth Body to Streamline the Sector*, *supra* note 154.

China claimed that Article XX (b) and (g) applied to the REE dispute because of the severe damage REE mining and refining imposes on the environment—damage so severe that it raises security concerns regarding public safety and geophysical integrity of territory.[156] Traditionally, these concerns are left to the sole discretion of a State exercising its sovereign right to decide for itself its best interests. In the REE dispute, it can be observed how the WTO's legal ruling directly impacted the traditional principles that have undergirded States' reasoning and behavior because it has provided a mechanism by which to effectuate "global administrative law" and governance over certain State conduct.[157]

> The associated radioactive elements of light rare-earth minerals [and] ores pose major problems for the environment. Most of China's light rare-earth deposits ores can be . . . mined for large-scale industrial exploitation, but as thorium (Th) and other radioactive elements are difficult to treat, . . . more attention [] should be paid to its impact on people's health and the ecology [in terms of mining, smelting, and separating out REE from the earth].[158]

The processes of extricating and refining REEs have deleterious environmental consequences; for example, REEs "are absorbed in the soil in the form of ions."[159] According to an official report issued by the Chinese government, the REE industry, while undergoing rapid and profitable development, nonetheless resulted in very serious environmental damage due to the excessive exploitation of REE that, in turn, resulted in profound damage to China's ecological environment.[160] Such massive environmental damage is part of a macroscopic problem facing China in other sectors of its energy development and economy.[161]

China declared in 2012 that, after 50+ years of excessive exploitation of REEs, its reserves rapidly declined. As a result, China's

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156. Matsushita, *supra* note 153, at 276-82.

157. *See generally* Andrew D. Mitchell & Elizabeth Sheargold, *Global Governance: The World Trade Organization's Contribution*, 46 ALTA. L. REV. 1061 (2008-2009).

158. INFO. OFF. OF THE ST. COUNCIL, PEOPLES REPUBLIC OF CHINA, SITUATION AND POLICIES OF CHINA'S RARE EARTH INDUSTRY 4 (2012), *available at* http://www.rareearthassociation.org/Official%20China%20MIIT%20White%20Paper%20on%20Rare%20Earths%20-%20English.pdf (last visited Nov. 7, 2018).

159. *Id.*

160. *See* Wayne M. Morrison & Rachel Tang, Cong. Resarch Serv., R42510, *China's Rare Earth Industry and Export Regime: Economic and Trade Implications for the United States* 11 (2012).

161. *See* Eleanor Albert & Beina Xu, *China's Environmental Crisis*, COUNCIL ON FOR. REL. (Jan. 18, 2016), *available a*t https://www.cfr.org/backgrounder/chinas-environmental-crisis (last visited Nov. 4, 2018).

exhaustible REE supply became unfairly depleted.[162] "In Baotou, only one-third of the original volume of rare-earth resources is available in the main mining areas, and the reserve-extraction ratio of ion-absorption-rare-earth mines in China's southern provinces has declined from 50 two decades ago to the present 15."[163] Baotou (located in Inner Mongolia), one of the largest reserves of REEs,

> [is] essential to advanced technology, from smartphones to GPS receivers, but also to wind farms and, above all, electric cars. The minerals are mined at Bayan Obo, 120km farther north, then brought to Baotou for processing. The concentration of rare earths in the ore is very low, so they must be separated and purified, using hydro-metallurgical techniques and acid baths. China accounts for 97% of global output of these precious substances, with two-thirds produced in Baotou. The foul waters of the tailings pond contain all sorts of toxic chemicals, but also radioactive elements such as thorium which, if ingested, cause cancers of the pancreas and lungs, and leukemia.[164]

Furthermore,

> [a] study by the [Chinese] municipal environmental protection agency showed that rare-earth minerals . . . themselves caused pollution, but [so too did] the dozens of new factories that had sprung up around the processing facilities and a fossil-fuel power station feeding Baotou's new industrial fabric. Residents of what was now known as the 'rare-earth capital of the world' were inhaling solvent vapor, particularly sulphuric acid, as well as coal dust, clearly visible in the air between houses.[165]

Additionally, China contends with illegal mining,

> [which] has severely depleted local resources, and mines rich in reserves and easy to exploit [] were favored over the others . . . the recovery rate of the rare-earth resources is relatively low. Less [than] 50 percent of such resources are recovered in ion-absorption-rare-earth mines in Southern China, and only ten percent of the Baotou reserves are dressed ore is selected and utilized-for use.[166]

China contended that under Article XX (subparagraph (g) in particular), current levels of mining and refining production process related to

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162. *See generally* Morrison & Tang, *supra* note 160, at 7.

163. INFO. OFF. OF THE ST. COUNCIL, PEOPLES REPUBLIC OF CHINA, *supra* note 158, at 3.

164. Cécile Bontron, *Rare Earth Mining in China Comes at a Heavy Cost for Local Villages*, THE GUARDIAN (Aug. 7, 2012), *available at* http://m.guardianews.com/environment/2012/aug/07/china-rare-earth-village-pollution (last visited Nov. 5, 2018).

165. *Id.*

166. INFO. OFF. OF THE ST. COUNCIL, PEOPLES REPUBLIC OF CHINA, *supra* note 158, at 3.

its REE industry resulted in severe and irreparable damage to the ecological environment that merited an exception to its trade obligations.[167]

> Outdated production processes and techniques in the mining, selecting dressing, [sic] smelting and separating of rare-earth ores have severely damaged surface vegetation, caused water loss, soil erosion, pollution, and acidification, and reduced or even eliminated food crop output. In the past, the outmoded tank leaching and heap leaching techniques were employed at ion-absorption middle and heavy rare-earth mines, creating 2,000 tons of tailings for the production of every ton of REO (rare earth oxide). Although the more advanced in-situ leaching method has been widely adopted, large quantities of ammonium nitrogen, heavy metal and other pollutants are being produced, resulting in the destruction of vegetation and severe pollution of surface water, ground water and farmland. Light-rare-earth mines usually contain many associated metals, and large quantities of toxic and hazardous gases, wastewater with high concentration of ammonium nitrogen and radioactive residues are generated during the processes of smelting and separating.[168]

China argued that Article XX (b) and (g) should apply because the excessive exploitation of REE concomitantly resulted in severe environmental degradation, accelerated exhaustion of non-renewable resources, and immediate and long-term danger to the health and overall wellbeing of the Chinese State and People. In other words, the severe environmental damage resulting from unfettered REE production—especially unchecked foreign access to China's REEs—posed a direct threat to the State's and People's wellbeing,[169] and the restrictive export regime should fall under Article XX (b) and (g). The "excessive rare earth mining exploitation of rare earth ores has resulted in landslides, clogged rivers, environmental pollution emergencies, and even major accidents and disasters, causing great damage to people's safety and health, and the ecological environment."[170]

Interestingly, the legal basis for an Article XX defense involves more than the letter of the law, so to speak. The legal argument also contains the implication that, because environmental issues play such a profound role in a State's overall security, a balance must be sought between trade, open markets, and environmental health and sustainability. "In May 2011, the [Chinese] State Council issued Guidelines on

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167. *See generally id. at* 3-9.

168. *Id.*

169. *See generally* Jonathan Kaiman, *Rare Earth Mining in China: The Bleak Social and Environmental Costs*, THE GUARDIAN (Mar. 20, 2014), *available at* https://www.theguardian.com/sustainable-business/rare-earth-mining-china-social-environmental-costs (last visited Nov. 9, 2018).

170. INFO. OFF. OF THE ST. COUNCIL, PEOPLES REPUBLIC OF CHINA, *supra* note 158, at 3.

Promoting the Sustainable and Healthy Development of the Rare-Earth Metals Industry . . . attaching more importance to the protection of resources and the environment, and the realization of sustainable development" than unrestrained development to bolster trade and commercial weal.[171] A fundamental principle guiding China's approach to REEs includes, "adhering to environmental protection and resource conservation. The State will implement stricter standards for ecological protection and protective exploitation policies concerning rare-earth resources, improve relevant laws and regulations on the industry's administration, and crack down on all violations of laws and regulations according to law."[172]

Although China's environmental argument may encompass geo-political, national security, and strategic considerations, this does not in and of itself dilute the validity and efficacy of the environmental dimension of the Chinese effort to avoid WTO regulatory oversight over its REE mining and processing. It is a fact that REEs are non-renewable resources and that the extraction and processing of REEs have deleterious environmental effects. China officially declared that REEs "as a non-renewable natural resources [sic], need to be effectively protected and rationally utilized. As part of its drive to ensure the sustainable use of resources, China has been practicing protective exploitation of its [REEs]."[173] China also stated that, "out of the need . . . to better protect[] the environment . . . the state has adopted a series of . . . measures to better coordinate [REE] development and utilization with environmental protection. China will never develop the [REE] industry at the expense of its environment."[174]

> In view of the needs of protecting the environment and resources and developing in a sustainable way, and after giving overall considerations to the domestic and international markets, the carrying capacity of resources and environments, as well as domestic production conditions, China strictly controls the total volumes of rare-earth mining and production, and takes restrictive measures on the mining, production, consumption and export of rare-earth products metals simultaneously.[175]

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171. *Id.*

172. *Policies of China's Rare Earth Industry*, CHINA DAILY (June 20, 2012), *available at* http://usa.chinadaily.com.cn/china/2012-06/20/content_15515783_3.htm (last visited Nov. 8, 2018).

173. INFO. OFF. OF THE ST. COUNCIL, PEOPLES REPUBLIC OF CHINA, *supra* note 158, at 1.

174. *Id.*

175. Jason Miks, *China's Rare Earth Warning*, THE DIPLOMAT (June 20, 2012), *available at* https://thediplomat.com/2012/06/chinas-rare-earth-warning/ (last visited Nov 5, 2018).

The WTO allows for exceptions to its regulatory oversight, which are based on the Article XX General Exceptions.[176] Yet, in the present LSSN, trade reigns as a preeminent value that undergirds the WTO/GATT.

VII. THE LSSN, TRADE, ENVIRONMENT, & ARTICLE XX

The GATT exemplifies a legal product of statecraft that embodies and propagates a free market economic system of trade. Law and economy find powerful expression in the WTO. The GATT recognizes the value that the environment holds for States, providing an exemption from WTO regulatory oversight if a particular trade practice threatens environmental degradation. Yet, this recognition does not privilege a State's security concerns with environmental degradation.

> Driven by the philosophy of a market economy, [with] its main objective [being] economic growth . . . GATT was [specifically] negotiated to combat protectionist trade barriers which were believed to have contributed to the economic crises of the 1920s and 1930s. Obligatory upon member states, GATT essentially forbids any country to discriminate between like products of other countries.[177]

According to some commentators, the basis of China's response(s) rested on allowable exceptions within the GATT that allow WTO members to put restrictive measures in place to control certain types of exports.[178] As discussed above, China seemed to have recourse to support its export regime within GATT Article XX (b) and (g), in the sense that:

> [s]ubject to the requirement that such measures are not applied in a manner which would constitute a means of arbitrary or unjustifiable discrimination between countries where the same conditions prevail, or a disguised restriction on international trade, nothing in [the GATT] shall be construed to prevent the adoption or enforcement by any contracting party of measures.[179]

China stated that it specifically designed restrictive export controls to address environmental pollution and degradation.[180] A plausible case stands for upholding the export control measures based on Article XX

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176. *See, e.g.,* Hal S. Shapiro, *The Rules That Swallowed The Exceptions: The WTO SPS Agreement And Its Relationship To GATT Articles XX And XXI–The Threat of the EU-GMO Dispute,* 24 AZ. J. INT. & COMP. L. 199 (2007).

177. Alam, *supra* note 105, at 1-2.

178. Hatch, *supra* note 93.

179. *Id; see also* General Agreement on Tariffs and Trade art. XX, Oct. 30, 1947, 55 U.N.T.S. 188.

180. Jim Zarroli, *U.S., WTO Pressure China on Rare Earth Minerals*, NPR (Mar. 13, 2012), *available at* http://www.npr.org/2012/03/13/148536622/u-s-wto-pressure-china-on-rare-earth-minerals (last visited Nov. 5, 2018).

(b)'s allowance for protecting the environment and mitigating noxious pollution to protect "human, animal or plant life or health." Sources—Chinese and non-Chinese—cited severe and extensive environmental damage and toxic by-products that result from rare earth mining and processing as possible "reason[s] for restricting the export of rare earths. There is certainly significant evidence to suggest that rare earth operations have previously caused widespread pollution and damage to local ecosystems, have contaminated water sources and have caused health problems in local populations, livestock and plant life."[181] Studies conducted in China demonstrate that:

> thorium radiation emitted during the refining process and by plant waste can cause cancer, leukemia, birth defects and chronic lung diseases. The government says the whole sector has been producing more than 20 million metric tonnes (22.05 million tons) of poisonous waste water a year, and in the major Chinese production regions of Inner Mongolia in the northeast and Jiangxi in the east, mining has created bubbling streams of toxic tailings that contaminate water supplies and render farmland worthless for decades.[182]

Other commentators contend, however,

> [that given the fact that] approximately 65-70% of demand for rare earths comes from end users within China [itself, a] more persuasive argument could be made if overall production levels of rare earths were reduced, as a means of reducing the environmental impact of rare-earth mining, instead of restricting their export. However, overall production levels of rare-earth ores have remained steady or have actually increased in recent years.[183]

Thus, China had a difficult time justifying an Article XX exception because it was not applying restrictions on mining and processing to its domestic industries. Yet, "China may . . . be able to . . . successfully justify the export quotas and licensing processes, even if non-domestic customers are disadvantaged by them, if they can demonstrate that such actions are not a 'disguised restriction on international trade,' as stated in the preamble for Article XX."[184] A problem China faced in putting forth an

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181. Hatch, *supra* note 93; *see also* Justin Paul & Gwenette Campbell, *Investigating Rare Earth Element Mine Development in EPA Region 8 and Potential Environmental Impacts*, U.S. ENVTL. PROT. AGENCY (Aug. 15, 2011), *available at* https://nepis.epa.gov/Exe/ZyPDF.cgi/P100FHSY.PDF?Dockey=P100FHSY.PDF (last visited Nov. 5, 2018).

182. David Stanway & James Regan, *Pollution the Big Barrier to Freer Trade in Rare Earths*, REUTERS (Mar. 19, 2012), *available at* http://www.reuters.com/article/2012/03/19/us-china-rareearth-idUSBRE82I08I20120319 (last visited Nov. 5, 2018).

183. Hatch, *supra* note 93.

184. *Id.*

Article XX defense was that the measures it took were construed by the WTO as a "disguised restriction on international trade" because of the immense windfall China's domestic industry would receive if the import measures were to be upheld under Article XX.[185]

Another justification for an exception that China may invoke from Article XX falls under subparagraph "(g) relating to the conservation of exhaustible natural resources if such measures are made effective in conjunction with restrictions on domestic production or consumption."[186] China stated that it cannot and should not be asked to sustain 90+ percent of the proportion of global REE production when it only has 30+ percent of actual rare earth resources within its territory.[187] China's position—that WTO Members, in attempting to bypass Article XX protections designed to preserve a State's sovereign right to posit environmental security regulations were being unreasonable—refused to meet exorbitant global demand for REE out of proportion with its resources, which are finite in nature.[188] Perhaps the most problematic issue with a subparagraph (g) defense is:

> the explicit expectation that any measures taken with respect to foreign consumers, will only be deemed valid if those measures are also applied to domestic consumers as well . . . this [may be] the single biggest flaw in any attempt by the Chinese authorities to use the 'conservation of exhaustible natural resources' argument to justify export restrictions, since by their very definition, they apply only to foreign consumers. It may smack of a technicality, but it's a pretty significant one, and frankly [may] undermine any attempt by China to use clause (g).[189]

China's mining and refining of REE, however, do in fact implicate the exhaustion of natural resources that are finite in nature. The pollution resulting from REE mining and refining may possibly fall under Article XX(b), along with depletion of China's REE supply, given its disproportionate role in providing REE for the global market. This does seem to

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185. Sanford Gaines, *The WTO's Reading of the Gatt Article XX Chapeau: A Disguised Restriction on Environmental Measures*, 22 U. PA. J. INT'L L. 739, 740 (2001); *see generally* JUDGING THE STATE IN INTERNATIONAL TRADE AND INVESTMENT LAW: SOVEREIGNTY MODERN, THE LAW AND THE ECONOMICS (Leïla Choukroune ed., 2016) [hereinafter JUDGING THE STATE IN INTERNATIONAL TRADE AND INVESTMENT LAW].

186. *See generally* JUDGING THE STATE IN INTERNATIONAL TRADE AND INVESTMENT LAW, *supra* note 185.

187. *See* Joseph A. Giacalone, *Can China's Monopoly of the Rare Earth Minerals Market Be Broken?*, 19 PROCEEDINGS OF ASBBS, 385, 385 (2012).

188. For a discussion of the various problems with this argument, *see* Hatch, *supra* note 93.

189. *Id.*

provide a legitimate basis for an Article XX (g) defense, although the WTO rejected China's argument.

> Instead of stripping the earth bare to supply raw materials to the world, Beijing wants to move up the value chain and dominate downstream sectors. By letting domestic manufacturers buy rare earths at a significant discount, it is seeking to attract foreign firms to relocate to China and help China move up the value chain. 'There have been plenty of instances where companies reliant on Chinese rare earths have had to send their manufacturing business into China, which, from a Chinese economic perspective, is a strong result' . . . Beijing uses export controls and its monopolistic position as producer . . . as the basis of a strategy to build world-class companies that create jobs' . . . Chinese officials insist the country's dominance is no longer anything to celebrate. Despite having only a third of global reserves, it has damaged its environment in order to supply the bulk of the world's rare earth needs . . . [Chinese officials] have said they are happy for other countries to 'share the burden' of production, and Beijing's supply restrictions have already encouraged other sources to emerge.[190]

A. Article XX: Trade v. Environmental Security—Analyzing China's Environmental Defense

Critics of Chinese REE export policies in place before the AB's final ruling dismissed China's environmental claims and contended that China's strategy, quite explicitly, "aimed at driving up global prices of the metals and forcing foreign firms to relocate to the country to access them. [Critics reject China's claims that] the restrictions are necessary to conserve the highly sought-after natural resource, limit harm to the environment from excessive mining and meet domestic demand."[191] These complainants—with the United States in particular—accused China of purposefully and illegally harming:

> [non-Chinese] workers and manufacturers . . . in both established and budding industrial sectors by [its] policies. China continues to make its export restraints more restrictive, resulting in massive distortions and harmful disruptions in supply chains [in] the global marketplace . . . The launch of this case against China[,] along with [U.S.] President [Obama's] creation of the Interagency Trade Enforcement Center, reflects the [U.S.'s] commitment to make all . . . trading partners play by the rules. [The U.S.] will continue fighting for a level playing field for

190. *Id.*; *see also* Reinhard Bütikofer, *China and Raw Materials: Conflict or Co-Operation?*, EUR. VOICE (Mar. 29, 2012), *available at* http://www.europeanvoice.com/article/imported/china-and-raw-materials-conflict-or-co-operation-/74015.aspx (last visited Nov. 4, 2018); Stanway & Regan, *supra* note 182.

191. *EU, US, Japan Take 'Rare Earth' Dispute With China to WTO*, *supra* note 97.

> American workers and manufacturers in order to grow our economy, and ensure open markets for products made in America.[192]

China's Minister of Industry and Information Technology, Miao Wei, stated that he regrets the "'decision to complain to the WTO' . . . 'In the meantime, we are actively preparing to defend ourselves.' China's export quotas [are] not trade protectionism and did not target any specific country."[193] According to Liu Weimin, a spokesman for the Chinese Ministry of Foreign Affairs,

> 'China has worked out its own policy on managing rare earths, which is in line with WTO regulations'. . . 'Our policies tackle not only the export of rare earth but also its production and exploration.' The United States accuses China of hoarding the valuable minerals for its own use. But . . . restrictions are motivated by environmental concerns.[194]

Zhang Anwen, Deputy Secretary for the Chinese Society of Rare Earths, said WTO members' requests for unrestricted access to the Chinese supply of rare earths were "unreasonable," and that rare earth commodities' increasing prices do in fact reflect market conditions, in that global prices must eventually consider the possibility and costs of environmental degradation.[195]

An economic-environment perspective counters the economic-protectionist argument put forth by the complainants that appears on its face to be in line with Article XX (b) and (g) because China's restrictive measures, to some degree, do attempt to preserve health, flora, and fauna from an economic-environmental perspective. After all, the WTO itself:

> disavows any competence on environmental policy. In their 1994 Decision on Trade and Environment, the world's trade ministers officially reiterated the common observation that the 'competence of the multilateral trading system . . . is limited to trade policies and those trade-related aspects of environmental policies which may result in significant trade effects for its members.' It is impossible to develop an integrated and

192. Press Release, Office of the U.S. Trade Representative, United States Challenges China's Export Restraints on Rare Earths (Mar. 2012), *available at* https://ustr.gov/about-us/policy-offices/press-office/press-releases/2012/march/united-states-challenges-china%E2%80%99s-export-restraints-r (last visited Nov. 4, 2018).

193. Palmer & Moffett, *supra* note 81.

194. *Obama Announces WTO Case Against China Over Rare Earths*, *supra* note 101.

195. Tuo Yannan, *China Disputes Claims in WTO Rare-Earth Investigation*, CHINA DAILY (Apr. 26, 2012), *available at* http://europe.chinadaily.com.cn/business/2012-04/26/content_15145340.htm (last visited Nov. 4, 2018).

> mutually supportive trade-environment policy by considering only the trade dimension.[196]

Liao Jinqiu, an economist at the Jiangxi University of Finance and Economics and a deputy to the National People's Congress, said that the profoundly negative and significant environmental costs that attach to rare earth mining and processing have not been included in the pricing of rare earth commodities in past years.[197] "'The exploitation of rare earths should be further integrated, and a rare earth industry chain must be forged to ease the environmental pressure created by excessive extraction,' Liao said."[198]

> China's regulations, which include production caps, export quotas and stricter emission standards, were adopted after a full consideration was made regarding 'the ability of the environment to ensure effective supplies of rare-earth metals.' According to the Ministry of Industry and Information Technology, processing one metric ton of rare earths produces about seven tons of strong acid. 'The recovery rate for rare earths is less than 50 percent . . . In some illegal mines, the rate is as low as 20 percent. So if [China] can't control and manage [processing] activities, there will be significant damage to plant life and underground water supplies.'[199]

China contended that:

> [the] disorderly mining of rare earths has long been blamed for the environmental damage in [rare-earths-rich] regions across the country. And experts say it will be costly to repair ecosystems that have been ruined as a result of rare earth mining. Xunwu County in east China's Jiangxi Province is a major production base for ionic rare earths. Lavish exploitation of the metals since the 1970s has not only impeded local economic development, but also posed a threat to drinking water safety in neighboring Guangdong province, said Liao Liping, the county's deputy magistrate . . . 'It would cost about 1 billion yuan ($158.7 million) to restore the ecosystems of those obsolete rare earth mines . . .'[200]

The mining of heavy rare earths, largely unregulated until recently, caused considerable environmental damage, with organized crime playing a role in operations that dump waste in the form of acid into local waterways. The Chinese government took steps in 2010 to try to "limit

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196. Sanford Gaines, *The WTO's Reading of the Gatt Article XX Chapeau: A Disguised Restriction on Environmental Measures*, 22 U. PA. J. INT'L L. 739, 856 (2001), quoting GATT Secretariat, *A Decision on Trade and Environment*, MTN.TNC/MIN (94)/1/Rev. 1 (Apr. 14,1994).

197. *China Responds to Rare Earth WTO Complaint*, BEIJING REV. (Mar. 14, 2012), *available at* http://www.bjreview.com/se/txt/2012-03/14/content_439604.htm (last visited Nov. 4, 2018).

198. *Id.*

199. Yannan, *supra* note 195.

200. *Id.*

production, close illegal mines and consolidate the industry under the control of state-owned enterprises."[201] The Chinese government faces serious challenges to regulating rare earths mining and processing. "China's rare earth industry is so large it is challenging to monitor illegal mining. Smuggling accounts for one-third of the total amount of rare earths leaving China. Illegal exports keep prices low and deplete strategic resources."[202]

Under the WTO's interpretation of Article XX (g), the fact that China provides 97 percent of the global supply of rare earths and yet has only 35 percent of rare earths deposits, the exceptions for health and environment do not take into account that Member States are compelling China to exhaust its resources *and* absorb the bulk of environmental damage due to REE processing.[203] Article XX's exceptions are thus more formal and less substantive in practice, and actually undermine rather than preserve the sovereignty of Member States. One could view the AB's final ruling on the REE dispute as employing law to attain a collective economic interest at the expense of a Member State.

> Most nations with rare earth deposits, including the United States, closed their own mines decades ago and [now demand] cheap supplies from China. Rare-earth mining and processing is notoriously devastating to the environment, making it politically difficult for those countries to reopen the mines, which means China is still expected to contribute tremendously to rare earth supplies. However, those undeniable truths are overlooked as tunnel vision [that] only sees unfair trading practices [at work].[204]

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201. PEACE AND STABILITY IN ASIA-PACIFIC REGION: ASSESSMENT OF THE SECURITY ARCHITECTURE 139-40 (Y.K. Gera ed., 2012); *see also* Keith Bradsher, *China Tries to Clean Up Toxic Legacy of Its Rare Earth Riches*, N.Y. TIMES (Oct. 22, 2013), *available at* https://www.nytimes.com/2013/10/23/business/international/china-tries-to-clean-up-toxic-legacy-of-its-rare-earth-riches.html?rref=collection%2Ftimestopic%2FRare%20Earths&action=click&contentCollection=timestopics&region=stream&module=stream_unit&version=latest&contentPlacement=9&pgtype=collection (last visited Dec. 4, 2018).

202. Lee Levkowitz & Nathan Beauchamp-Mustafaga, *China's Rare Earths Industry and Its Role in the International Market*, U.S.-CHINA ECON. & SEC. REV. COMM'N STAFF BACKGROUNDER (Nov. 3, 2010), *available at* https://www.uscc.gov/sites/default/files/Research/RareEarthsBackgrounderFINAL.pdf (last visited Nov. 4, 2018).

203. *See Environmental Protection in China*, PERMANENT MISSION OF THE PEOPLE'S REPUBLIC OF CHINA TO THE U.N. OFF. AT GENEVA AND OTHER INTL. ORGS. IN SWITZ. (June 1996), *available at* http://www.china-un.ch/eng/bjzl/t176940.htm (last visited Nov 5, 2018).

204. *West's Rare Earth Accusations Against China Unfair*, EMBASSY OF THE PEOPLE'S REPUBLIC OF CHINA IN THE REPUBLIC OF MALTA (Mar. 18, 2012), *available at* http://mt.chineseembassy.org/eng/zyxwdt/t914981.htm (last visited Nov. 8,

According to a U.S. E.P.A. report released last year,

> every ton of rare earth elements produced generates [noxious pollutants, viz.,] approximately 8.5 kilograms of fluorine and 13 kilograms of flue dust. Additionally, sulfuric acid refining techniques used to produce one ton of rare earth elements generates 9,600 to 12,000 cubic meters of [poisonous] gas laden with flue dust concentrate, hydrofluoric acid, sulfur dioxide, and sulfuric acid. Not only are large quantities of harmful gas produced, alarming amounts of liquid and solid waste also resulted from Chinese refining processes.[205]

Deleterious environmental damage combined with exhaustion of natural resources suggests that China's restrictive export regime may indeed qualify for Article XX exceptions. China estimates that:

> at the completion of refining one ton of rare earth elements, approximately 75 cubic meters of acidic waste water and about one ton of radioactive waste residue are produced . . . China produced over 130,000 metric tons of rare earth elements in 2008 alone . . . Extrapolation of the waste generation estimates over total production yields extreme amounts of waste. With little environmental regulation, stories of environmental pollution and human sickness remain frequent in areas near Chinese rare earth element production facilities.[206]

Critics of China's policy point out that the exhaustion of resources contention does not qualify for an Article XX (g) exception; the term "REE" is actually a misnomer because REEs "amount to some 100 million tonnes of rare earth oxides (REO). Based on its present annual consumption (75,000 tonnes REO), the proven reserves of rare earth minerals can serve the world for over 1,000 years."[207]

In the REE dispute before the WTO, the environmental security concerns of a single Member State were at odds with the collective trade and security interests of other Member States.[208] Despite the AB's final ruling in the dispute, it is important to ask the question: does the GATT provide sufficient policy space for States to unilaterally impose restrictive import/export regimes based on environmental security measures? When considering trade and environmental security concerns, one must not lose

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2018); *see also Malaysian Protest Over Rare Earths Refinery Plan*, BBC UK (Feb. 26, 2012), *available at* http://www.bbc.co.uk/news/world-asia-17169601 (last visited Nov. 8, 2018).

205. Paul & Campbell, *supra* note 181, at 14.

206. *Id.*

207. ACAD. OF SCI. MALAY. & NAT'L PROF. COUNCIL, RARE EARTH INDUSTRIES: MOVING MALAYSIA'S GREEN ECONOMY FORWARD 15 (2011).

208. For a discussion of Security interests and membership in IGOs, *see* Christina L. Davis & Tyler Pratt, *The Forces of Attraction: How Security Interests Shape Membership in Economic Institutions*, HARV. SCHOLAR (July 31, 2018), *available at* https://scholar.harvard.edu/files/cldavis/files/davispratt_forces_july2018.pdf (last visited Nov. 8, 2018).

sight of the fact that, despite rhetoric that claims environmental concerns play a profound role in GATT/WTO jurisprudence and the limited exceptions in Article XX, the GATT/WTO are fundamentally legal instruments that place trade at the apex of inter-State relations. This is the case even though REEs have strategic importance for Member States, as the justification for WTO rulings are premised on trade, not security. In the case of the REE dispute, economically, export restrictions created significant disadvantages for foreign consumers/producers by artificially raising China's export prices, thereby driving global market prices up.

> [S]uch restrictions artificially lower China's domestic prices for the raw materials due to significant increases in domestic supply. This gives China's domestic downstream industry significant competitive advantages and puts pressure on foreign producers to move their operations and technologies to China, which in turn results in losses of employment and production capacities[, e.g., in the case of] the EU, [where] Chinese restrictions [have resulted in] losses of employment and production capacities in Europe. These policies stand at odds with the non-discriminatory trade framework that WTO members, including China, have signed up to.[209]

According to the United States,

> Chinese export restraints have a devastating impact on production and jobs [in the U.S.] by limiting or raising the cost of . . . materials to [U.S.] companies which use them to make products . . . Many firms faced with restricted access to these key raw materials have either begun to contract with producers in China or have moved their own operations there. China has used export restraints as a development strategy to advantage their companies and undermine their competitors.[210]

When considering the economic dimensions of the REE dispute, perhaps an overarching concern that underpinned the objections leveled by the complainants includes:

> the issue of competitiveness in world markets. China's exports have been increasing in volume at a rate much faster than that of the exports of the other dominant world suppliers. China has also been running huge annual surpluses in its balance of trade with these countries. China is naturally competitive in a wide range of manufactured goods because of its low labor costs and the scale of its industries.[211]

The United States, EU, and Japan contended that this advantage had been:

> [artificially and significantly] augmented by a number of measures, some of which are subject to WTO discipline and appeals, such as subsidies and dumping, while others are not . . . Whether or not China will have

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209. *EU Challenges China's Export Restrictions on Rare Earths*, *supra* note 74.

210. Gerard, *supra* note 11.

211. Lloyd, *supra* note 74.

> total freedom to continue to restrict its exports of minerals remains to be seen. But there is no doubt that with today's volatile markets and the need for nation-states to increase competitiveness in the global economy, the large trading partners will continue to jostle for market share for the foreseeable future.[212]

Similar issues pertaining to the relationship between trade and environmental security measures were addressed in the case of *China–Measures Related to the Exportation of Various Raw Materials*.[213] In this case, the United States filed a complaint with similar issues involved in the REE dispute.[214] The Panel found (and the AB upheld the Panel's findings) that Chinese export restrictions on (non-critical) minerals such as bauxite, coke, fluorspar, magnesium, manganese, silicon carbide, silicon metal, yellow phosphorus and zinc,[215] of which China leads the world as a producer, stood incompatible with China's trade obligations.

> The Panel found that the wording of China's Protocol of Accession did not allow China to use the general exceptions in Article XX of the GATT 1994 to justify its WTO-inconsistent export duties. The Panel also considered that even if China were able to rely on certain exceptions available in the WTO rules to justify its export duties, it had not complied with the requirements of those exceptions.[216]

Furthermore, the Panel found (and the AB upheld the Panel's finding) that China could not avail itself of Article XX defenses because it could not prove (to the satisfaction of the Panel) that application of its measures, both foreign and domestic production, would be administered in an even-handed manner and that the desired environmental protection would be effectuated.[217] In light of Article XX (b) and (g),

> China argued that some of its export duties and quotas were justified because they related to the conservation of exhaustible natural resources for some of the raw materials. But China was not able to demonstrate that it imposed these restrictions in conjunction with restrictions on domestic production or consumption of the raw materials so as to conserve the raw materials . . . As for other of the raw materials, China had claimed that its export quotas and duties were necessary for the protection of the health of its citizens. China was unable to demonstrate that its export duties and quotas would lead to a reduction of pollution in the

212. *Id.*

213. Panel Report, *China—Measures Related to the Exportation of Various Raw Materials,* WTO Doc. WT/DS394/R/Add.1 (adopted July 5, 2011).

214. *Id; see also* Baroncini, *supra* note 81.

215. Baroncini, *supra* note 81.

216. *Id.*

217. *Id.*

> short—or long—term and therefore contribute towards improving the health of its people.[218]

After the ruling, U.S. Trade Representative Ron Kirk stated that it "was so 'unequivocal' that he hoped China would back down on rare earths and take steps to resolve both cases before the rare earths suit comes before a WTO dispute panel."[219] But the January judgment may have left China enough room to restrict exports in other ways. For example, China may argue that "its efforts to clean up the environment are to blame for its dwindling rare earths exports and not any sinister motives to manipulate prices."[220] Although the AB ruled against China,

> [it may take a few years to] put an end to the offending trade practice. So even if China loses, rare earths could remain scarce for a while, giving China more time to capitalize on its position as the dominant supplier. And dominance in rare earths may just be a route to building companies that lead the most advanced industries. That would suit Chinese politicians who want China to earn a bigger cut from the goods it makes.[221]

China has been able to:

> use its export controls and its monopolistic position as producer of 96 percent of all rare earth minerals as the basis of a strategy to build world-class companies that create jobs . . . In a sense, Beijing is modeling domestic firms after companies like Hitachi, once a mining company but now a massive electronics and infrastructure conglomerate.[222]

While this may attenuate the power of law to effectuate full and immediate compliance, the WTO exists as a forum wherein States seek to settle grievances in an anarchic world. This points to the evolving role and impact of law on inter-State relations, notions of sovereignty, and security. International law levies a substantial and targeted effect (trade) on how States interact and conduct themselves, resulting in a significant development in the history of international relations, whereas the sovereignty of the State was viewed as the singular basis for inter-State relations.

China actively regulated its rare earths resource reserves since 2008, introducing various measures such as high export taxes and, in the case of some products, even prohibiting trade.[223]

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218. Miles & Palmer, *supra* note 98.

219. *Id.*

220. *Id.*

221. *Id.*

222. *Id.*

223. *See generally* Roland Howanietz, *Changes to the Regulatory Framework of the Chinese Rare Earth Industry After the Global Financial Crisis*, 35 COPENHAGEN J. OF ASIAN STUD. ONLINE 32 (2017), *available at*

> Earlier in 2007, China withdrew the 16 per cent refund of value-added tax on exports of unimproved rare earths. The effect of this decision, combined with the export-tax regime, is that non-Chinese rare earth processors such as producers of cerium polishing powder and rare earth magnets, pay 31 per cent more for rare earth raw materials than their Chinese counterparts.[224]

Export restrictions imposed by China on REEs, as well as on tungsten and molybdenum, appear mainly in the form of quotas, export duties, a minimum export price system, and additional requirements and procedures that prove quite burdensome for various foreign entities seeking access to Chinese rare earths.[225]

Prior to the AB's final ruling, China had continued to tighten its export restrictions on rare earths by substantially raising export taxes and considerably reducing the export quota.[226] In June 2010,

> China implemented a drastic reduction of the quota by 32% for domestic companies and 54% for foreign-invested companies. It also caused the supply to the rest of the world to fall behind demand (30.000t of quota destined for export vs. 50-60.000t of demand). Quota figures for 1st semester 2011, showing a further decrease of 35% in allowed exports amounts, compared to the same semester of 2010 (with a slightly deeper cut for foreign invested players than for Chinese exporters). Those restrictions undoubtedly affected the prices. Sharp price increase[s] started for many elements in mid-2010 (first tightening of the quota). This follow[ed] an absolute price peak for all elements in first half of 2011: most prices went up by 500%-1000%.[227]

In mid-2011,

> [market prices on rare earths] corrected downwards because of obstructed demand. Although . . . prices continue to remain significantly higher than in 2009. China['s] export prices are up to 100% higher compared to domestic prices . . . Due to the restrictions and price hikes the EU . . . had to drop manufacturing of some of their products, various businesses had to relocate to China, consumer prices of many [rare

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https://rauli.cbs.dk/index.php/cjas/article/viewFile/5398/5961 (last visited Nov. 8, 2018).

224. Nabeel A. Mancheri, *China Faces WTO Again Over Rare Earth Metals*, E. ASIA F. (May 16, 2012), *available at* http://www.eastasiaforum.org/2012/05/16/china-faces-wto-again-over-rare-earth-metals/ (last visited Nov. 8, 2018); *see generally* Michael G. Pecht et al., RARE EARTH MATERIALS: INSIGHTS AND CONCERNS (Davinder K. Anand et al. eds., 2012).

225. Badkar, *supra* note 80.

226. *See generally* Han-Wei Liu & John Maughan, *China's Rare Earths Export Quotas: Out of The China-Raw Materials Gate, But Past The WTO's Finish Line?*, 15 J. OF INTL. ECON. L. 971 (2012).

227. *EU Challenges China's Export Restrictions on Rare Earths*, *supra* note 74.

> earth]-based goods went up, and uncertainty in downstream sectors on cuts of the supplies [left] the industry unstable.[228]

Despite the AB's final ruling, some analysts contend that any "shortage" of REEs is in fact temporary; rising prices are predicted to have the effect of encouraging governments and private industry to enter the market, thus leading to an increased supply of REEs as well as encouraging innovation for establishing alternative mineral supply chains.[229]

> The U.S., for example, has 13 per cent of the world's known rare-earth reserves and could re-enter the production and refining business. China's efforts to exert price leverage are unintentionally driving a revival of global rare earth production and, over time, China will likely be just one of many global suppliers. China's efforts to monopolize the sector [may] backfire because such high-handed measures have prompted the rest of the world to formulate alternate strategies.[230]

For example, in Japan, a major Tokyo-based trading company, Sojitz Corporation:

> signed a $250 million procurement deal with an Australian mining company . . . Th[is] deal is the latest effort by Japan to diversify its sources of the minerals, known as rare earths, which are vital to the production of a wide range of high-technology products. Sojitz, . . . forged a deal with the Australian mining company Lynas to start shipping 3,000 tons a year of the minerals from a new mine, Mount weld, beginning late next year. Sojitz and Lynas, based in Sydney, aim to increase shipments to more than 9,000 tons a year by early 2013.[231]

Businesses as well as policy makers were "concerned about the increasingly restrictive and unpredictable environment of international trade in industrial raw materials. Multilateral disciplines governing export restrictions are ambiguous, which creates uncertainty for industries that require these materials and raises the risk for investment in both mining and processing facilities worldwide."[232] Such concerns also served to encourage the development of alternate supply chains and/or rare earths replacements, thereby further reducing reliance on Chinese supplies and productive capacity.

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228. *Id.*

229. Mancheri, *supra* note 224.

230. *Id.*

231. Hiroko Tabuchi, *Japanese Firm in Rare Earths Deal with Australian Miner*, N.Y. TIMES (Nov. 24, 2010), *available at* https://www.nytimes.com/2010/11/25/business/global/25rare.html (last visited Nov. 5, 2018).

232. Mancheri, *supra* note 224; *see also EU, US, Japan Launch Rare Earth WTO Case Against China*, REUTERS (Mar. 13, 2012), *available at* https://www.reuters.com/article/china-trade-eu/eu-us-japan-launch-rare-earth-wto-case-against-china-idUSB5E8DS01T20120313 (last visited Nov. 5, 2018).

The negative economic impact of restrictive exports carried over to the shipment, as well as mining and processing, of REEs.[233] Even when rare earths were slated for export, foreign buyers face another serious obstacle to free and fair trade prices.

> China has repeatedly reduced its export quotas for rare earths over the last five years so that they are now well below world demand. [. . .] World demand for Chinese rare earths approaches 50,000 tons a year, according to industry estimates. [. . .] The value of the remaining quotas soared to the point that the right to export a single ton of rare earths from China sold for about $40,000, including special Chinese taxes.[234]

For instance, in March of 2012 neodymium sold for approximately $40,000 a metric ton in China, and almost $80,000 outside of the country because of the export restrictions.[235] "Cerium oxide used as a catalyst and in glass manufacturing, cost $3,100 a ton in 2009. It now costs as much as $110,000 per ton outside of China—four times its price in China."[236] Another example is lanthanum, a rare earth that is vital for the manufacture of catalytic converters that cleans tailpipe emissions of conventional gasoline-powered cars. "Lanthanum, mostly produced here in Baotou . . . sells for less than $4,500 a ton in China and up to 10 times outside of China because of the export restrictions. [This has] created a big incentive for companies to move factories to China, and many already have."[237] For example,

> General Electric has closed its last U.S. light bulb factory and is opening a new factory in China making Compact Fluorescent Lights, which require rare earths. [. . .] [D]espite receiving more than $58 million in grants, loans and tax incentives in 2007 from the state [of Massachusetts] (in addition to federal support), Evergreen Solar decided to close its solar panel plant in Massachusetts and start a joint venture in China. A U.S. specialty lighting manufacturer, Intematix, and Japanese manufacturers Showa Denko and Santoku, have also opened factories in China, specifically to secure access to affordable rare earths.[238]

From an international political economy perspective,

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233. *See Critical Materials Strategy*, U.S. DEPT. OF ENERGY (Dec. 2010), *available at* https://www.osti.gov/servlets/purl/1000846 (last visited Nov. 5, 2018).

234. Keith Bradsher, *China Said to Resume Rare Mineral Shipments*, N.Y. TIMES. (Oct. 28, 2010), *available at* https://www.nytimes.com/2010/10/29/business/energy-environment/29rare.html (last visited Nov. 5, 2018).

235. *Id.*

236. H. Sterling Burnett, *Will Green Energy Make the United States Less Secure?*, NAT'L CTR. FOR POL'Y ANALYSIS (Nov. 1, 2011), *available at* http://www.ncpathinktank.org/pub/ib103 (last visited Nov. 5, 2018).

237. Bradsher, *supra* note 234.

238. Burnett, *supra* note 236.

> [the REE dispute raises] the more general matter of restrictions on national sovereignty and the ability of a WTO member nation to choose trade measures [specifically] to pursue domestic policy objectives. It is certainly true that these choices are restricted in relation to international trade in goods. But it is in the nature of a binding multilateral agreement that all signatories agree to be bound by stated rules on a mutual basis. Moreover, these cases relate to an article of the GATT that has applied since its founding in 1947. There is nothing new about these restraints on national sovereignty.[239]

Yet, the role of international law in directly impacting States' interests, inter-State ordering principles, and State conduct indeed remains a significant development in international relations.

CONCLUSION

Sustainable development of the REE industry, as well as the value of preserving and protecting the environment, seems to have been relegated to the sidelines in the case of the REE dispute. Additionally, the sovereignty and environmental security interests of Member States in the WTO, according to the REE dispute reasoning and ruling, will not automatically take precedence in WTO interpretation of trade rules. Complainant's argument to force China to dismantle its restrictive export regime was thoroughly steeped in the preeminent value underlying the GATT/WTO (elimination of all barriers to free and fair trade). China premised its argument on the principle that environmental interests weigh as heavily, if not more, than free trade interests in a State's security calculus. In other words, the environment inextricably links with trade, and therefore, a State's sovereign integrity and security interests—as defined by the sovereign—should take precedence over trade. Irrespective of the actual or multiple reasons for arguing an Article XX exception to its restrictive REE measures, China's argument suggests that legal interpretations of treaties pertaining to trade must take the environment into account beyond paying lip service to the importance of the environment in the conduct of global trade. How, if at all, are the norms and perceptions governing the relationship of trade and environment, vis-à-vis the REE debate, impacted by the WTO and the GATT's General Exceptions? There is an argument that addressing miasmic environmental effects that result from REE mining and processing takes precedence over ensuring unrestricted free trade. "Tackling pollution, not freeing up trade, is regarded as the solution to a global shortage of rare earths, the metals that are the building blocks of the 21st century."[240]

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239. Lloyd, *supra* note 74.

240. Stanway & Regan, *supra* note 182.

In the end, it seems that in considering previous WTO cases China (and other Member States) will have a difficult time availing itself of Article XX's (b) and (g) exceptions. Due partially to the fact that China had failed to engage in what the WTO considered serious multilateral or bilateral negotiations to resolve the dispute, it may be instructive for Member States to evaluate how they can meet these formal requirements in order to better effectuate measures designed to protect their domestic environments over trade obligations. China struggled to prove that its measures were both (a) not benefitting its domestic industry at the expense of Member States, and (b) that the REE export regime effectively addressed the depletion of exhaustible resources. In the case of even-handedness between domestic and foreign industry,

> Chinese explanations seem to heavily focus on the environmental and sustainable resource development points which are generally protected under WTO rules. Yes, China's dominance of the global rare earth supply has come at a great cost, with serious environmental issues. But many consumer countries feel that China will have to provide a much more satisfactory answer as to why the export quota has been declining while the production quota has been increasing. Also, it's one thing to have the overall level of export quotas unchanged, but it would be quite another to allow exports—in a sufficient amount—of the types of rare earth materials that consumers want.[241]

Trade in the LSSN trumped environment. Despite a seemingly valid prima facie case that REE mining and production produce miasmic effects on the environment, China's unilateral action of imposing a restrictive export regime goes against its international obligations under the WTO. China finds itself renegotiating and compromising its sovereignty and security interests because of its trade obligations. As mentioned above, Article XX provides exceptions, not positive rules, whereby States can exempt themselves from WTO regulatory oversight. Trade and environmental security are inextricably transected in the REE dispute. It will be interesting to see how the WTO continues to manage the tension in the LSSN, and what precedent, if any, the REE decision will set for employing Article XX to preserve and protect the environment.

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241. Clara Gillispie & Stephanie Pfeiffer, *The Debate Over Rare Earths: Recent Developments in Industry and the WTO Case: An Interview with Yufan Hao and Jane Nakano,* NAT'L BUREAU OF ASIAN RES. (July 11, 2012), *available at* http://www.nbr.org/research/activity.aspx?id=261 (last visited Nov. 5, 2018).