ARTICLE

The Harmon Doctrine is Dead, Long Live the Harmon Doctrine!

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INTRODUCTION

How states ought to share water crossing their boundaries has long been disputed in both American and international water law. Legal principles governing the shared use of interstate watercourses in the United States and internationally were once rooted in an extreme absolute territorial sovereignty theory, also known as the "Harmon doctrine." In modern American and international water law, the Harmon doctrine is widely considered to be defunct and debunked, with more cooperative and equitable approaches to interstate water sharing taking its place. This Article challenges this conventional wisdom and argues that territorial sovereignty—the foundation of the Harmon doctrine—in fact continues to permeate states' claims to interstate waters both in the United States and internationally.

In the United States, "[i]nterstate waters have been a font of controversy since the founding of the Nation."[1] Indeed, the United States Supreme Court (Supreme Court) decided two interstate water disputes in 2021 alone.[2] The frequency with which interstate water disputes concerning "'consumptive'" or "non-navigational" uses[3]—such as irrigation, drinking, and hydropower production—arise is hardly surprising. Approximately 95% of surface water in the United States is shared by two or more states,[4] and there are many interstate groundwater aquifers as well.[5] The situation is similar at the international level. There are hundreds of watercourses that traverse nation states' political boundaries,[6] giving rise to interstate non-navigational disputes concerning, for instance, dam construction, diversions, and pollution.

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1. Arkansas v. Oklahoma, 503 U.S. 91, 98 (1992).

2. Florida v. Georgia, 141 S. Ct. 1175 (2021) and Mississippi v. Tennessee, 142 S. Ct. 31 (2021). This Article uses the terms "interstate" and "transboundary" water disputes interchangeably.

3. STEPHEN C. MCCAFFREY, THE LAW OF INTERNATIONAL WATERCOURSES 75 (3rd ed. 2019).

4. ROBIN KUNDIS CRAIG, ROBERT W. ADLER & NOAH D. HALL, WATER LAW 169 (1st ed. 2017). The Mississippi River, for instance, is shared by ten states and the Colorado River is shared by seven states. *Id.*

5. *See* CRAIG, ADLER & HALL, *id.* at 62; JAMES A. MILLER, GROUND WATER ATLAS OF THE UNITED STATES: INTRODUCTION AND NATIONAL SUMMARY (1999), https://pubs.er.usgs.gov/publication/ha730A (expanding upon the twenty-four principal interstate aquifers in the United States).

6. As of 2018 there were reportedly 310 river basins globally. *Register of International River Basins*, OREGON STATE UNIVERSITY, https://transboundarywaters.science.oregonstate.edu/content/register-international-river-basins. The Danube and the Nile River basins, for instance, are shared by nineteen and eleven states, respectively. Annika Kramer et al, *The Key to Managing Conflict and Cooperation over Water*, 11 A WORLD OF SCIENCE, Jan.–Mar. 2013, at 4.

In order to prevent and peacefully resolve interstate water disputes, both American and international water law[7] have developed cooperative water-sharing doctrines. In the United States, competing non-navigational uses of interstate waters are governed by the "equitable apportionment" doctrine established by the Supreme Court.[8] The equitable apportionment doctrine grants American states an "equal right" to use shared watercourses[9] and prohibits them from causing harm of "serious magnitude" to the rights of other states sharing the watercourses.[10] Similarly, non-navigational uses of shared watercourses at the international level are governed by the doctrine of "limited territorial sovereignty" in international water law. According to this doctrine, the sovereignty of a state over a watercourse located partially in its territory is limited by two principal obligations—to use such a watercourse "equitably and reasonably" vis-à-vis other states sharing it and not to use it in a way that causes "significant harm" to other states or the environment.[11]

The cooperative water law doctrines of equitable apportionment and limited territorial sovereignty evolved in the shadow of a more extreme theory of interstate water relations—"absolute territorial sovereignty," also known as the "Harmon doctrine."[12] This doctrine permits a state to use waters passing within its territory as it sees fit and without regard to the interests of other states sharing those waters.[13] In other words, "the doctrine is a brutal assertion of the unfettered right of a territorial sovereign to do as

7. Also known as the "law of international watercourses." This body of law is distinguished from the body of law governing navigational uses of interstate rivers, as well as the law governing maritime and the High Seas. "Limited territorial sovereignty" is considered as the "prevailing theory of international watercourse rights and obligations today." MCCAFFREY, *supra* note 3, at 125. *See also* Nadia Sánchez Castillo, *Differentiating between Sovereignty over Exclusive and Shared Resources in the Light of Future Discussions on the Law of Transboundary Aquifers*, 24 REV. EUR. COMPAR. & INT'L ENV'T L. 4, 5 (2015) (noting that "the principle of limited territorial sovereignty . . . is currently the norm in international water law.").

8. Kansas v. Colorado, 206 U.S. 46, 118 (1907); Florida v. Georgia, 138 S. Ct. 2502 (2018).

9. Mississippi v. Tennessee, 142 S. Ct. 31, 39 (2021) (quoting Florida v. Georgia, 141 S. Ct. 1175, 1180 (2021)).

10. Florida v. Georgia, 138 S. Ct. 2502, 2506 (2018) (quoting Washington v. Oregon, 297 U.S. 517, 522 (1936)).

11. "In other words, a state has a right to an equitable and reasonable share in the beneficial uses of the waters of the basin, yet that state should not use these waters in such a way as to unreasonably interfere with the legitimate interests of other states." ARIEL DINAR ET AL., BRIDGES OVER WATER: UNDERSTANDING TRANSBOUNDARY WATER CONFLICT, NEGOTIATION AND COOPERATION 184 (2d ed. 2013). These principles of international water law are set out in international instruments such as the Convention on the Law of the Non-Navigational Uses of International Watercourses arts. 5, 7, May 21, 1997, 2999 U.N.T.S. 77. Another principle enshrined in the Convention is the duty to cooperate on shared waters generally as well as with respect to planned measures, *id.* at arts. 8–9, 11–12.

12. MCCAFFREY, *supra* note 3, at 99 ("The theory of 'absolute territorial sovereignty' is associated chiefly with the 'Harmon Doctrine.'").

13. Castillo, *supra* note 7, at 11 n.90; Peter Beaumont, *The 1997 UN Convention on the Law of Nonnavigational Uses of International Watercourses: Its Strengths and Weaknesses from a Water Management Perspective and the Need for New Workable Guidelines*, 16(4) INT'L J. WATER RES. DEV. 475, 476 (2000).

it pleases."[14] The Harmon doctrine is named after United States Attorney General Judson Harmon who is credited (or faulted) with creating it in 1895.[15] It has typically been viewed as serving the interests of states that are located upstream on a transboundary watercourse because it allows such states to use the shared waters without regard for the interests of downstream states.[16] While the doctrine has been considered by some to reflect "'settled international law'" at one point in history,[17] it is now widely considered as defunct.[18] Some scholars also argue that the Harmon doctrine never actually represented American, nor international, transboundary water policy and that it has been "rarely asserted . . . as the basis of non-navigational rights."[19] One scholar has even declared the doctrine to be "dead."[20]

Against this apparent consensus that the Harmon doctrine no longer exists, if it ever did, in interstate water law and policy, this Article argues that the ghost of the doctrine in fact continues to haunt interstate water relations both in the United States and internationally. The Article shows that in the United States, some states have continued to rely on "Harmon-like" arguments in transboundary water disputes submitted to the Supreme Court, including in the most recent dispute decided by the Court in 2021 between Mississippi and Tennessee. A similar practice exists at the international level as evident from arguments made by some nation states before international courts, including in the pending water dispute between

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14. C. B. Bourne, *International Law and Pollution of International Rivers and Lakes*, 6 U. BRIT. COLUM. L. REV. 115, 119 (1971).

15. Judson Harmon, Treaty of Guadalupe Hidalgo—International Law, 21 U.S. Op. Att'y Gen. 274 (1895) [*Harmon Opinion*]. *See* Stephen C. McCaffrey, *The Harmon Doctrine One Hundred Years Later: Buried, Not Praised*, 36 NAT. RES. J. 965, 967 (1996) ("This opinion has become so synonymous with the doctrine of absolute territorial sovereignty that it now stands as the doctrine's cornerstone, if not its entire foundation.").

16. Aaron T. Wolf, *Criteria for Equitable Allocations: The Heart of International Water Conflict*, 23 NAT. RES. FORUM 3, 6 (1999) ("The 'doctrine of absolute sovereignty' is often initially claimed by an upstream riparian.").

17. Jerome Lipper, *Equitable Utilization*, *in* THE LAW OF INTERNATIONAL DRAINAGE BASINS 15, 21 (A. H. Garretson et al. eds., 1967). *See also* Minn. Canal & Power Co. v. Pratt, 101 Minn. 197, 230 (1907) (noting that "[t]he United States . . . recognizes no international comity which prevents it from exercising full control over the waters which lie within its geographical boundaries.").

18. *See* sources cited *infra* note 58.

19. MCCAFFREY, *supra* note 3, at 100, 174 (positing that the Harmon doctrine was not actually adopted by the United States or other states and that it "never enjoyed wide support as the basic, governing principle in the field."). *See also* Lipper, *supra* note 17, at 22. *But see* C. B. Bourne, *The Right to Utilize the Waters of International Rivers*, 3 CAN. Y.B. INT'L L. 187, 204 (1965) ("even today it is doubtful whether the doctrine has been abandoned by the United States; the statements of its governmental officers in the Senate hearings on the 1944 United States-Mexico Treaty are equivocal, and in proceedings before the International Joint Commission as late as 1950 and 1951 counsel for the United States was still invoking it.").

20. Robert D. Scott, *Kansas v. Colorado Revisited*, 52 AM. J. INT'L L. 432, 432 (1958). *But see* Brahma Chellaney, *Water, Power, and Competition in Asia*, 54(4) ASIAN SURVEY 621, 629 (2014) ("the Harmon Doctrine may be dead in the country of its birth but is alive and kicking in China.").

Bolivia and Chile before the International Court of Justice.[21] These "Harmonian" claims and arguments advanced by states do not necessarily reference the Harmon doctrine explicitly. Nor are they limited to states' claims that purport to exert complete control over an entire shared watercourse. Rather, this Article considers "Harmonian" or "Harmon-like" claims to include any claim advanced by a state with respect to any portion or use of a shared watercourse that is grounded in territorial sovereignty. For instance, State A might argue that it has an exclusive sovereign right to use that portion of a transboundary watercourse that flows through its territory, regardless of resulting impacts on State B. Conversely, State A might attempt to limit the use of a transboundary watercourse by State B in State B's territory on the ground that such use violates State A's territorial sovereignty over its own part of the watercourse. While traditionally these two diametrically opposite arguments have been treated separately,[22] for present purposes they are both considered to be "Harmonian" in nature because they are rooted in territorial sovereignty rather than cooperative principles such as equitable use and harm reduction. Ultimately, American and international transboundary water jurisprudence reveals a range of Harmonian rhetoric, whether explicit or implicit, indicating that the sovereignty-centered heart of the Harmon doctrine continues to beat almost 130 years after its birth.

This Article is not intended to suggest that the Harmon doctrine provides a valid or appropriate foundation for domestic or international transboundary water relations. Indeed, the Harmon doctrine is "an anachronism that has no place in today's interdependent, water-scarce world"[23] because it defies basic principles of hydrology and well-established principles of cooperative management of transboundary watercourses.[24]

21. At the international level, states have reportedly adopted similar positions in negotiations and diplomatic exchanges. *See generally* MCCAFFREY, *supra* note 3, at 103-10 (surveying the practices in various states). *See also* Bourne, *supra* note 19, at 205 (referring to Austria and India); Chellaney, *supra* note 20, at 629 (referring to China); Obja Borah Hazarika, *Riparian Relations between India and China: Exploring Interactions on Transboundary Rivers*, 6(1) INT'L J. CHINA STUDIES 63, 74 (2015) (referring to India and China); G.E. Gruen, *Turkish Waters: Source of Regional Conflict or Catalyst for Peace?*, 123 WATER, AIR, AND SOIL POLLUTION 565, 572 (2000) (referring to Turkey); Murat Metin Hakki, *Turkey, Water and the Middle East: Some Issues Lying Ahead*, 5 CHINESE J. INT'L L. 441, 447 (2006) (referring to Turkey); Joseph MacKay, *Running Dry: International Law and the Management of Aral Sea Depletion*, 28(1) CENT. ASIAN SURV. 17, 25 (2009) (referring to Kyrgyzstan). A discussion of these examples is beyond the scope of the present Article, which focuses on arguments made by states in judicial proceedings.

22. While the first argument is typically considered to reflect the Harmon doctrine, the second is typically said to reflect a contrary, yet equally extreme, doctrine that is also widely viewed as defunct—"absolute territorial integrity." According to this doctrine, no state sharing a watercourse may make any changes to it that restrict the supply of water to another state. Castillo, *supra* note 7, at 11 n.90; Beaumont, *supra* note 13, at 477.

23. MCCAFFREY, *supra* note 3, at 100.

24. David Grey & Dustin Garrick, *Water Security, Perceptions and Politics: The Context for International Watercourse Negotiations*, *in* INTERNATIONAL LAW AND FRESHWATER: THE MULTIPLE CHALLENGES

Quite the contrary, the goal of demonstrating that the Harmon doctrine continues to beset transboundary water disputes is to place domestic and international water law in a better position to truly eradicate it. To achieve this goal, buy-in from governments and a commitment not to further legitimize the doctrine by invoking or relying on it is required. But in order to engender such a commitment we must first acknowledge that the Harmon doctrine lives on and understand how and why this is so. The importance of recognizing and understanding states' use of Harmonian sovereignty-based arguments in interstate disputes extends beyond the specific context of transboundary watercourses. With nationalistic sentiments on the rise,[25] states may resort to such arguments also in the context of environmental disputes concerning air pollution and climate change, in which interstate cooperation is crucial and unilateral sovereignty-based claims are counterproductive. Therefore, insights gained from state practice in the adjudication of transboundary water disputes may prove useful in a broader range of current and future interstate disputes, both in the United States and internationally.

Part I of the Article introduces the Harmon doctrine and discusses the literature that has long announced its demise. Part II examines five American transboundary water cases submitted to the Supreme Court in which Harmonian arguments, as defined above, were advanced by at least one of the state parties.[26] A similar analysis of transboundary water cases at

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37, 44–45 (Laurence Boisson de Chazournes, Christina Leb & Mara Tignino eds., 2013) ("[s]overeignty is no longer capable of providing the primary foundation for freshwater policy, management and law" due to global "interdependencies.").

25. The Harmon doctrine has been said to be "especially popular in an age of strong nationalism." C. B. Bourne, *The Development of International Water Resources: The "Drainage Basin Approach*," 47 CAN. B. REV. 62, 86 (1969).

26. Two of these cases concerned the same dispute between Colorado and Kansas, which was the subject of two decisions of the Supreme Court. There are two other American transboundary water disputes worth mentioning in which Harmonian arguments were advanced by the state parties. The first dispute arose between South Carolina and North Carolina concerning the Catawba River. South Carolina v. North Carolina, 558 U.S. 256 (2010). South Carolina complained of North Carolina's "interbasin transfer statute," which authorized the transfer of large volumes of water between river basins in North Carolina, including the Catawba River. Motion of the State of South Carolina for Leave to File Complaint, Complaint, and Brief in Support of Its Motion for Leave to File Complaint, South Carolina v. North Carolina, 558 U.S. 256 (2010) (No. 138), 2007 WL 3283683, at *10. South Carolina presented North Carolina's statute as implicitly standing for the Harmonian principle that "a state rightfully may divert and use, as she may choose, the waters flowing within her boundaries in an interstate stream, regardless of any prejudice that this may work to others having rights in the stream below her boundary." Motion of the State of South Carolina for Leave to File Complaint, Complaint, and Brief in Support of Its Motion for Leave to File Complaint, South Carolina v. North Carolina, 558 U.S. 256 (2010) (No. 138), 2007 WL 3283683, at *12 (citation omitted). North Carolina agreed that the equitable apportionment principle governed the dispute but defended its statute by arguing that "[e]quitable apportionment only addresses each State's entitlement to a portion of the flow of the river and leaves to each State the right to determine the most beneficial use of that water. Thus, the Application inappropriately intrudes upon the sovereign prerogatives of a sister State." Response of

the international level is conducted in Part III of the Article, which examines five disputes submitted to the Permanent Court of International Justice ("PCIJ") and its successor, the International Court of Justice ("ICJ").[27] These American and international cases illustrate the Harmonian backdrop against which the equitable apportionment and limited territorial sovereignty doctrines have developed, and the challenges that these modern doctrines continue to face in the resolution of transboundary water disputes in the United States and internationally.[28]

Two important caveats should be noted. First, the functions of the Supreme Court and of international courts in the resolution of transboundary water disputes is not always comparable:

> The Supreme Court was never called upon to adjudicate questions of an international character where the alternative to accepting the decision of the court might be war. What it was called upon to do was to balance interests within a federal system, and one based on

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the State of North Carolina to South Carolina's Application for a Preliminary Injunction, South Carolina v. North Carolina, 558 U.S. 256 (2010) (No. 138), 2007 WL 7766428, at *11 n.9. The Supreme Court did not have occasion to decide on the merits of the dispute because the parties settled it by agreement. N.C. GEN. STAT. ANN. § 143-215.22L(v)(2)(j) (West 2015).

The second dispute was a 400-year-old dispute between Virginia and Maryland concerning the Potomac River. In 1878, the two states agreed that Maryland would have ownership of the entire bed of the river, while Virginia would own the soil up to the low-water mark on the south shore of the Potomac and have a right to use the river beyond that line "as may be necessary to the full enjoyment of her riparian ownership." Virginia v. Maryland, 540 U.S. 56, 62-63 (2003) (citation omitted). In 1997, Maryland refused to allow Virginia to construct a water intake structure extending beyond the Virginia shore of the Potomac River. *Id.* at 64. Virginia petitioned the Supreme Court for a declaration that it had the sovereign right to withdraw water from the Potomac as well as to construct improvements upon it without having to obtain Maryland's approval. *Id.* Maryland, for its part, requested a declaration that its "territorial sovereignty includes the right to regulate the activities of Virginia entities that take place in the bed and waters of the Potomac River lying within Maryland and extending to the low water mark on the Virginia side." Report of the Special Master, Virginia v. Maryland, 540 U.S. 56 (2003) (No. 129), 2002 WL 34538021, at *10. According to Maryland, it "is and has been the owner of the river, and it has never relinquished the sovereign authority that its title to the river gives it to regulate what takes place on and over the bed." Oral Argument of Baida ex rel. Plaintiff, Virginia v. Maryland, 540 U.S. 56 (2003) (No. 129), 2003 WL 22335915, at *3-*4. Since "Maryland owns this river, Maryland does have sovereign authority over it," *id.* at *21, while Virginia only has a "right of use" which is "not dominion, it's not title, it's not sovereignty," *id.* at *17. The Supreme Court rejected Maryland's Harmonian sovereignty arguments, holding that Virginia had a sovereign right over the Potomac River equal to Maryland's "to build improvements appurtenant to her own shore and to withdraw water, without interfering with the 'proper use of' the River by the other," in accordance with the equitable apportionment doctrine. Virginia v. Maryland, 540 U.S. 56, 74, 92 n.9 (2003).

27. There are also at least two freshwater disputes between nation states that have been submitted to arbitration, namely Lake Lanoux Arbitration (Fr. v. Spain), 12 R.I.A.A. 281 (Arbitral Trib. 1957) and Indus Waters Kishenganga Arbitration (Pak. v. Ind.), Final Award and Partial Award, 31 R.I.A.A 1 (Perm. Ct. Arb. 2013). The pleadings and submissions of the state parties in these cases are not as readily available publicly, unlike disputes submitted to the PCIJ and ICJ, and as such they are not analyzed in the present Article.

28. For a similar analysis of the strict liability rule for regulating transboundary pollution in the United States and internationally, see Thomas W. Merrill, *Golden Rules for Transboundary Pollution*, 46 DUKE L.J. 931 (1997).

> principles of law and politics not necessarily similar to those rules of international law and international life which guide the family of nations.[29]

Nonetheless, when resolving transboundary water disputes the Supreme Court is "working out rules of law for problems in economics and politics not unsimilar to those found in international law."[30] Moreover, useful parallels may be drawn between interstate water disputes in the United States and internationally because the Supreme Court's jurisprudence in this area has both drawn from international law[31] and guided it.[32]

The second caveat is that, given the small number of disputes both in the American and the international context, it is difficult to make generalizations. However, this Article does not purport to show that *all* states raise Harmonian arguments *all* of the time. It has a more modest goal—to demonstrate that *some* states have, and continue to, raise Harmonian arguments *sometimes*. This finding is important in itself, because it establishes, at the very least, that the Harmon doctrine is not in fact "dead" but continues to plague both domestic and international transboundary water disputes.

Part IV of the Article explores possible reasons for the continued invocation of Harmonian arguments by states in the United States and at the international level. It first examines, and rejects, the suggestion that the lingering presence of the Harmon doctrine reflects states' belief that it actually forms part of American or international water law. This suggestion is negated by the uncertain legal status of the Harmon doctrine as well as its consistent rejection by the Supreme Court and the PCIJ/ICJ. Another potential reason for states' invocation of Harmonian arguments might be their belief that the Harmon doctrine *should* form part of American and/or international water law. The Article rejects this possibility as well given the existence of a multitude of cooperative interstate arrangements such as water compacts in the United States and water treaties at the international

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29. Jacob Austin, *Canadian-United States Practice and Theory Respecting the International Law of International Rivers: A Study of the History and Influence of the Harmon Doctrine*, 37 CAN. BAR REV. 393, 434 (1959).

30. *Id.*

31. *Id.* at 431 ("[I]n the disputes between the states we have a problem not unlike international disputes, and indeed the Supreme Court of the United States has often taken the position that it could apply international law to these domestic disputes.").

32. *Trail Smelter Arbitral Decision*, 35 AM. J. INT'L L. 684, 714 (1941) (noting that with respect to "both air pollution and water pollution, [there are] certain decisions of the Supreme Court of the United States which may legitimately be taken as a guide in this field of international law, for it is reasonable to follow by analogy, in international cases, precedents established by that court in dealing with controversies between States of the Union or with other controversies concerning the quasi-sovereign rights of such States."). *See also* MCCAFFREY, *supra* note 3, at 291 ("The decisions of the U.S. Supreme Court in apportionment disputes between U.S. states comprise what is probably the richest body of practice in the field of equitable utilization that exists on either the national or the international level.").

level. These cooperative arrangements belie the suggestion that states aspire to absolute sovereignty over transboundary watercourses as a matter of law. Instead, the Article argues that Harmonian rhetoric used by state parties in transboundary water disputes serves political, rather than legal, purposes. The Article uses a Prisoners' Dilemma model to demonstrate how collective action challenges in the judicial resolution of transboundary water disputes may encourage resort to Harmonian claims. The Article cautions that continuing to employ the extreme and outdated Harmon doctrine risks eroding interstate cooperation, undermining modern water law doctrines, and arresting the development of much needed principles to govern other transboundary environmental problems. Part V of the Article concludes that, both in the United States and internationally, states do not stand to benefit from weakening cooperative water law principles in the face of climate change and increased water scarcity. In order to truly get rid of the ghost of the Harmon doctrine, Harmon-like claims and Harmonian rhetoric must be recognized as such and eradicated.

I. THE HARMON DOCTRINE—INTRODUCTION

In both American and international law, the starting point in any discussion of the rights of states to use their natural resources is territorial sovereignty.[33] Territorial sovereignty in international law is "the notion that a state occupies a definite part of the surface of the earth, within which it normally exercises, subject to the limitations imposed by international law, jurisdiction over persons and things to the exclusion of the jurisdiction of other states."[34] While American states are generally regarded as "quasi-sovereigns" because they form part of a federal union, in the context of rights to transboundary watercourses the Supreme Court has treated the states as sovereigns.[35]

Generally, states' territorial sovereignty applies to watercourses that are located entirely within the territory of a single state.[36] As to watercourses

33. MCCAFFREY, *supra* note 3, at 75 ("It is axiomatic that a state is sovereign within its territory.").

34. ANDREW CLAPHAM, BRIERLY'S LAW OF NATIONS: AN INTRODUCTION TO THE ROLE OF INTERNATIONAL LAW IN INTERNATIONAL RELATIONS 168 (Oxford University Press ed., 7th ed. 2012).

35. Colorado v. New Mexico, 467 U.S. 310, 316 (1984) (referring to the "unique interests involved in water rights disputes between sovereigns."); Florida v. Georgia, 138 S. Ct. 2502, 2515 (2018) (referring to "the sovereign status of the States."). *See also* Austin, *supra* note 29, at 431 ("One of the constitutional theories of the United States is that each state of the Union is a sovereign entity which has conceded certain powers to a federal union but retains residuary powers.").

36. Austen L. Parrish, *Sovereignty's Continuing Importance: Traces of Trail Smelter in the International Law Governing Hazardous Waste Transport*, *in* TRANSBOUNDARY HARM IN INTERNATIONAL LAW: LESSONS FROM THE TRAIL SMELTER ARBITRATION 185 (Rebecca M. Bratspies & Russell A. Miller eds., 2006) ("[T]he concept of permanent sovereignty over a nation's own natural resources . . . is now a firmly

that straddle the boundary between two or more states, the question becomes "whether each of the riparian states has in law full control of its own part of the river, or whether it is limited by the fact that the river is useful or even necessary to other states."[37] In the context of navigational uses of transboundary watercourses, the principle of free navigation in international law has been enshrined in treaties for centuries.[38] In the United States, the federal government controls navigable waterways that are or could be "used as part of a continuous interstate waterway for commercial purposes"[39] and is empowered to remove "unreasonable obstructions to the free navigation of the water ways of the United States."[40]

Issues concerning the non-navigational uses of transboundary watercourses, with which this Article is chiefly concerned, only emerged in the 19th and early 20th centuries, and, at least internationally, were initially subjected to the familiar and fundamental principle of territorial sovereignty.[41] The general consensus was that "in the absence of agreement, international law placed no restrictions upon the diversion or even pollution of [transboundary] waters."[42] Nowadays, however, the limited territorial sovereignty doctrine and its two main principles—equitable and reasonable utilization and no significant harm—are widely considered as customary international law that restricts states' freedom to use transboundary watercourses as they please.[43] In the United States, absolute territorial sovereignty was arguably "[n]ever accepted as a rule of domestic United

entrenched principle of international law."); L. OPPENHEIM, INTERNATIONAL LAW: A TREATISE 460-61 (H. Lauterpacht ed., 7th ed. 1955) (noting that "[n]ational waters," such as lakes, canals, and rivers, are "legally though not physically[] equivalent to national land." Therefore, "the local State is absolutely unhindered in the utilization of the flow" of national rivers. *Id.* at 474).

37. CLAPHAM, *supra* note 34, at 207.

38. MCCAFFREY, *supra* note 3, at 67-68; CLAPHAM, *supra* note 34, at 208-09; OPPENHEIM, *supra* note 36, at 466-74.

39. WILLIAM GOLDFARB, WATER LAW 74 (2d ed. 1988). In addition to the Commerce Clause, there are two other sources of federal authority over "navigable" waters: federal admiralty jurisdiction and federal navigation servitude. CRAIG, ADLER & HALL, *supra* note 4, at 107-15.

40. Union Bridge Co. v. U.S., 204 U.S. 364, 385 (1907).

41. MCCAFFREY, *supra* note 3, at 77; Lipper, *supra* note 17, at 22.

42. MCCAFFREY, *supra* note 3, at 78 and sources cited therein. *Id.* n.95.

43. *See, e.g.*, Stephen C. McCaffrey, *International Water Cooperation in the 21st Century: Recent Developments in the Law of International Watercourses*, 23 REV. EUR. COMP. & INT'L ENVT'L. L. 4, 5 (2014) (referring to these principles as "general principles that may be regarded as reflecting customary international law."); Gabriel Eckstein, *Water Scarcity, Conflict, and Security in a Climate Change World: Challenges and Opportunities for International Law and Policy*, 27 WIS. INT'L L.J. 409, 434 (2009–2010) ("Customary international law applicable to transboundary water resources offers a number of principles that are applicable to cross-border water issues," including equitable and reasonable utilization and no significant harm); Richard Paisley, *Adversaries into Partners: International Water Law and the Equitable Sharing of Downstream Benefits*, 3 MELB. J. INT'L L. 280, 283 (2002) (viewing equitable utilization as "the basic governing principle of customary international water law."); Indus Waters Kishenganga Arbitration (Pak. v. Ind.), Final Award and Partial Award, 31 R.I.A.A. 1, ¶¶ 87, 112 (Perm. Ct. Arb. 2013) (the arbitral tribunal noted the "customary international law requirements of avoiding or mitigating trans-boundary harm.").

States law,"[44] and today the equitable apportionment doctrine developed by the Supreme Court places similar limits on states' control over transboundary watercourses as its international equivalent, the limited territorial sovereignty doctrine. Such limits are necessary because freshwater scarcity and pollution increasingly threaten lives and livelihoods both in the United States[45] and internationally.[46] Nonetheless, the extreme absolute territorial sovereignty doctrine—the Harmon doctrine—continues to lurk in the shadows.

The Harmon doctrine originated in a legal opinion issued by United States Attorney General Judson Harmon in 1895, in which he stated that: "The fundamental principle of international law is the absolute sovereignty of every nation, as against all others, within its own territory."[47] Harmon made this statement in the context of a dispute between the United States and Mexico concerning the use of the waters of the transboundary Rio Grande river, which was governed by the 1848 treaty of Guadalupe Hidalgo.[48] Mexico complained that the use of the waters by Colorado and New Mexico for irrigation purposes reduced the water supply that the Mexican city of El Paso del Norte had used for centuries for irrigation.[49] According to Mexico, the new uses on the American portion of the river fell within the treaty's prohibition of "any work that may impede or interrupt, in whole or in part, the exercise" of the parties' right of navigation.[50]

Harmon labeled the dispute—which he viewed as arising from the fact that the river was "simply insufficient to supply the needs of" the two countries—as "novel."[51] He rejected Mexico's arguments that the treaty

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44. Austin, *supra* note 29, at 434.

45. Robert Glennon, *Interstate Water Wars are Heating Up Along with the Climate*, THE CONVERSATION (April 19, 2021, 8:28 AM EDT), https://theconversation.com/interstate-water-wars-are-heating-up-along-with-the-climate-159092 (discussing current interstate freshwater disputes pending before the Supreme Court as well as the increased likelihood of more disputes arising in the future, particularly in the west).

46. Claire Felter & Kali Robinson, *Water Stress: A Global Problem That's Getting Worse*, COUNCIL ON FOREIGN REL.'S (April 22, 2021, 10:25 AM EDT), https://www.cfr.org/backgrounder/water-stress-global-problem-thats-getting-worse (discussing water scarcity worldwide and the negative impacts of climate change); Alberto Boretti & Lorenzo Rosa, *Reassessing the projections of the World Water Development Report*, 2 NPJ CLEAN WATER 15 (2019) (arguing that prediction of future water scarcity are underestimated).

47. *Harmon Opinion*, *supra* note 15, at 281. As authority for this statement, Harmon relied on the Supreme Court's decision in The Schooner Exchange v. McFaddon, 11 U.S. 116, 136 (1812), in which the Court held in the context of sovereign immunity from judicial jurisdiction that "[t]he jurisdiction of the nation within its own territory is necessarily exclusive and absolute." Commentators have noted that "neither the [Schooner Exchange] decision nor its rationale supports the conclusion reached by Attorney General Harmon." McCaffrey, *supra* note 15, at 985.

48. *Harmon Opinion*, *supra* note 15, at 275.

49. *Id.* at 276.

50. *Id.* at 276-77.

51. *Id.* at 283.

restricted the use of the river in the United States' territory[52] and that it applied to non-navigational uses.[53] He opined that while the treaty governed navigation in the river,

> [a]bove the head of navigation, where the river would be wholly within the United States, different rules would apply and private rights exist which the Government could not control or take away save by the exercise of the power of eminent domain, so that clear and explicit language would be required to impose upon the United States such obligations as would result from the construction of the treaty now suggested.[54]

According to Harmon, international law did not impose any obligations on the United States to ensure that the use of the Rio Grande flowing within its territory would not result in a reduced flow to Mexico.[55] Moreover, to impose such limits in these circumstances would subject the United States "to the burden of arresting its development and denying to its inhabitants the use of a provision which nature has supplied entirely within its own territory"[56] and would thus be "inconsistent with the sovereignty of the United States over its national domain."[57]

Harmon's view of the principle of absolute sovereignty has long been rejected in the context of transboundary water governance.[58] Indeed, it

52. *Id.* at 277 ("Article VII is limited in terms to 'the part of the Rio Brovo del Norte lying below the southern boundary of New Mexico' . . . It is that part alone which is made free and common to the navigation of both countries, and to which the various prohibitions apply.").

53. *Id.* at 278 ("the only right the treaty professed to create or protect with respect to the Rio Grande was that of navigation.").

54. *Id.* at 277-78.

55. *Id.* at 283 ("the rules, principles, and precedents of international law impose no liability or obligation upon the United States.").

56. *Id.* at 281.

57. *Id.* at 282.

58. *See, e.g.*, HERBERT ARTHUR SMITH, THE ECONOMIC USES OF INTERNATIONAL RIVERS 8, 145 (1931) (referring to the Harmon doctrine as "intolerable," "radically unsound," and "obviously absurd."); Clyde Eagleton, *Use of the Waters of International Rivers*, 33 CAN. BAR REV. 1018, 1021 (1955) (stating "as a general principle of international law that, while each state has sovereign control within its own boundaries, in so far as international rivers are concerned, a state may not exercise that control without taking into account the effects upon other riparian states."); C. B. Bourne, *The Columbia River Controversy*, 37 CAN. BAR REV. 444, 459 (1959) ("The great majority of text writers emphatically reject the 'territorial sovereignty' theory (the Harmon doctrine)."); Samuel O. Ezediaro, *Review of the Legal Aspects of International Water Pollution Control*, 17 HOW. L.J. 69, 72 (1971) ("diplomats and commentators have repudiated the Harmon doctrine as an untenable conduct regulator for nations that comprise the world community."); Günther Handl, *Territorial Sovereignty and the Problem of Transnational Pollution*, 69 AM. J. INT'L L. 50, 55 (1975) (noting the "rejection of the absolute view of sovereignty"); Wolf, *supra* note 16, at 6 ("the Harmon Doctrine is wildly over-emphasized as a principle of international law."); Sanford E. Gaines, *Fresh Water: Environment or Trade?*, 28 CAN.-U.S. L.J. 157, 159 (2002) (noting that the Harmon doctrine is "held in disrepute by modern-day international water lawyers."); Beaumont, *supra* note 13, at 487 (noting that absolute territorial sovereignty "no longer finds favour amongst

seems that "[n]o support for the Harmon Doctrine of absolute territorial sovereignty can be found in contemporary literature."[59] This wholesale rejection of the Harmon doctrine is not surprising. Harmon's opinion did not seem to represent the official position of the United States, either before or after it was issued.[60] For instance, Harmon's position conflicted with an earlier statement made by then-Secretary of State William Evarts in 1880 concerning complaints by Texas residents of reduced water flow in the Rio Grande resulting from its use by Mexico residents. Evarts reportedly asserted that such a reduction "would be in direct opposition to the recognized rights of riparian owners."[61] Harmon's position was also contrary to a later statement made in 1945 by Frank Clayton, counsel for the United States section of the International Joint Boundary Commission with Mexico, in which he asserted that "Attorney-General Harmon's opinion has never been followed either by the United States or by any other country of which I am aware."[62] Indeed, the very dispute in relation to which Harmon issued his opinion was ultimately resolved by way of negotiations and the conclusion of a treaty equitably distributing the waters of the Rio Grande between the United States and Mexico.[63] Even if Harmon's opinion did reflect international water law at the end of the 19th century, it arguably merely reflected the "undeveloped state of the law at that time."[64]

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international lawyers."); LAUTERPACHT, *supra* note 36, at 474 ("the flow of not-national, boundary, and international rivers is not within the arbitrary power of one of the riparian States."). *But see, e.g.*, CHARLES CHENEY HYDE, INTERNATIONAL LAW CHIEFLY AS INTERPRETED AND APPLIED BY THE UNITED STATES 567 (2d rev. ed. 1947) (asserting that "a State may divert for its own purposes waters of a river within or passing through its territory."); Robert D. Hayton, *Observations on the International Law Commission's Draft Rules on the Non-Navigational Uses of International Watercourses: Articles 1-4*, 3 COLO. J. INT'L ENVTL. L. & POL'Y 31, 35 (1992) ("the attitude that 'the river is mine' is still common and deeply held."); Erik Ansink & Hans-Peter Weikard, *Composition Properties in the River Claims Problem*, 44 SOC. CHOICE WELF. 807, 823 (2015) (arguing that in the context of variability and uncertainty of river flow, "the Harmon rule has several attractive features.").

59. MCCAFFREY, *supra* note 3, at 111. *See also* Hakki, *supra* note 21, at 449 ("very little support for the Harmon Doctrine exists in contemporary literature or authoritative legal scholarship.").

60. For a contrary view, see Austin, *supra* note 29, at 408 (asserting that "the United States firmly adhered to the principles of the Harmon doctrine as firmly established international law and the doctrine played a very full role in protecting the interests of the United States . . . It may be that this doctrine still expresses the views of the United States.").

61. Brief on Behalf of the Plaintiff at 123, Wyoming v. Colorado, 259 U.S. 419 (1922) (No. 03) (quoting 1 JOHN BASSETT MOORE, A DIGEST OF INTERNATIONAL LAW 653 (1906)).

62. MCCAFFREY, *supra* note 3, at 116 (quoting *U.S. Senate*, *Hearings Before the Comm. on Foreign Relations on Treaty with Mexico relating to the Utilization of the Waters of Certain Rivers*, 79th Cong. 97 (1945)). *See also* Lipper, *supra* note 17, at 26-27 (referring, among others, to a statement made by the State Department in 1958 denying that the Harmon doctrine "had *ever* been a part of international law.").

63. MCCAFFREY, *supra* note 3, at 103 (referring to the Convention concerning the Equitable Distribution of the Waters of the Rio Grande for Irrigation Purposes, Mex-U.S., May 21, 1906, 34 Stat. 2953).

64. *Id.* at 99-100. *See also* Austin, *supra* note 29, at 404 (noting that "there is no general agreement on what are the relevant international-law principles [relating to the international law of international rivers]" but also that "as practiced by states they were probably, and still may be, the 'territorial sovereignty' theory, otherwise known as the Harmon doctrine.").

Regardless of the validity of its historical roots, both American and international water law ultimately grew unreceptive to the Harmon doctrine. In the United States, the Supreme Court rejected the notion of absolute sovereignty by states over transboundary watercourses as early as 1907. International legal instruments and decisions of the PCIJ and ICJ have also squarely rejected absolute territorial sovereignty. Indeed, scholars and courts have come to distinguish between a state's sovereignty over land and its sovereignty over water—a transitory natural element—crossing its boundaries, equating it to "clouds, winds, and migratory birds."[65] Yet, notwithstanding the clear American and global shift away from the Harmon doctrine, states have continued to raise Harmon-like sovereignty-based arguments in transboundary water disputes submitted to judicial resolution, both in the United States and internationally.

II. THE HARMON DOCTRINE IN TRANSBOUNDARY WATER DISPUTES BETWEEN AMERICAN STATES

Transboundary water disputes between American states are subject to the Supreme Court's original jurisdiction.[66] In a series of cases beginning with its 1907 decision in *Kansas v. Colorado*,[67] the Supreme Court developed the rule of equitable apportionment. By doing so, it effectively rejected absolute sovereignty claims to transboundary watercourses based on the Harmon doctrine.[68] This Part of the Article traces the development of the equitable apportionment doctrine in the Supreme Court's jurisprudence, illustrating how its evolution was—at least in part—a response to states' Harmonian claims of absolute sovereignty over transboundary waters.[69]

A. Kansas v. Colorado (1907)[70]

The dispute between Kansas and Colorado was first heard by the Court in 1902, when Kansas complained that Colorado's diversion of water from

65. MCCAFFREY, *supra* note 3, at 76-77 (quoting F.J. BERBER, RIVERS IN INTERNATIONAL LAW 4-5 (1959), who refers to Missouri v. Holland, 252 U.S. 416 (1920)).

66. U.S. CONST. art. III, § 2 (giving the Supreme Court original jurisdiction over disputes "between two or more states.").

67. Kansas v. Colorado, 206 U.S. 46 (1907).

68. For a critique of the equitable apportionment rule, see, for example, Charles J. Meyers, *The Colorado River*, 19 STAN. L. REV. 1, 50 (1966) (arguing that equitable apportionment is a "vague, if not meaningless, standard" that renders the Supreme Court incapable of dealing with "the mass of technical data introduced into evidence . . . litigation."); George W. Sherk, *Equitable Apportionment After Vermejo: The Demise of a Doctrine*, 29 NAT. RES. J. 565, 583 (1989) ("equitable apportionment actions are no longer viable alternatives by which interstate water conflicts may be resolved.").

69. This discussion does not include all interstate freshwater disputes submitted to the Supreme Court, but rather focuses on examples of disputes in which Harmonian arguments were advanced by the disputing states and rejected by the Court on equitable apportionment grounds.

70. Kansas v. Colorado, 206 U.S. 46, 98 (1907).

the Arkansas River for irrigation purposes was threatening Kansas' right to use the river in its territory and therefore violated the "fundamental principle that one must use his own so as not to destroy the legal rights of another."[71] In its complaint, Kansas asserted that its long-standing use of the river and its prior settlement on the lands surrounding it entitled it "to the full natural flow of the water of the Arkansas river [*sic*]."[72] Therefore, Kansas requested the Supreme Court to prohibit Colorado from diverting, or allowing any person to divert, "any of the waters of the Arkansas river [*sic*] or of any of its trbutaries [*sic*] from their natural beds, courses, and channels within the state of Colorado" or to construct and operate "canals, ditches, branches, laterals, or reservoirs" for irrigation purposes.[73]

Colorado, for its part, argued that its relationship with Kansas should be treated as one between "foreign states" governed by the "law of nations."[74] According to this law, Colorado asserted it "has dominion over all things within her territory, including all bodies of water, standing or running, within her boundary lines."[75] Therefore,

> as a sovereign and independent state, [Colorado] is justified, if her geographical situation and material welfare demand it in her judgment, in consuming for beneficial purposes all the waters within her boundaries; and that, as the sources of the Arkansas river are in Colorado, she may absolutely and wholly deprive Kansas and her citizens of any use of or share in the waters of that river.[76]

The question presented to the Supreme Court was whether a state has the power "to wholly deprive another of the benefit of water from a river rising in the former and, by nature, flowing into and through the latter."[77] In other words, the Court decided whether American states had absolute sovereignty over transboundary waters flowing in their territory, which would allow them to use those waters as they pleased and/or to prevent other states from using their portion of the waters. After the Court concluded that it had jurisdiction to answer this question, it reserved judgment until more evidence was submitted by the parties concerning the actual impact of Colorado's diversion on Kansas' use of the river.[78]

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71. Kansas v. Colorado, 185 U.S. 125, 146 (1902).
72. *Id.* at 131, 135 (arguing that Kansas has "the right to the uninterrupted and unimpeded flow of all the waters of the river into and across the state of Kansas; which rights accrued prior to any of the diversions by or in Colorado.").
73. *Id.* at 137.
74. *Id.* at 143.
75. Kansas v. Colorado, 185 U.S. 125, 143 (1902).
76. *Id.*
77. *Id.* at 145.
78. *Id.* at 147.

In its 1907 decision on the merits of the case, the Supreme Court rejected both parties' extreme sovereignty-based positions—Kansas' contention that "the flowing water in the Arkansas must . . . be left to flow as it was wont to flow, no portion of it being appropriated in Colorado for the purposes of irrigation" as well as Colorado's contention that "it has a right to appropriate all the waters of this stream for the purposes of irrigating its soil and making more valuable its own territory."[79] Instead, the Court adopted a more balanced rule of "equitable apportionment"[80] in order to secure "to Colorado the benefits of irrigation without depriving Kansas of the like beneficial effects of a flowing stream."[81]

The fundamental principle underlying the equitable apportionment rule is states' "equality of right."[82] Applying this principle to the Kansas-Colorado dispute, the Supreme Court found that

> the diminution of the flow of water in the river by the irrigation of Colorado has worked some detriment to . . . Kansas, and yet, when we compare the amount of this detriment with the great benefit which has obviously resulted to the counties in Colorado, it would seem that equality of right and equity between the two states forbids any interference with the present withdrawal of water in Colorado for purposes of irrigation.[83]

At the same time, the Court cautioned that "if the depletion of the waters of the river by Colorado continues to increase there will come a time when Kansas may justly say that there is no longer an equitable division of benefits."[84]

B. Wyoming v. Colorado (1922)[85]

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79. Kansas v. Colorado, 206 U.S. 46, 98 (1907). Some have argued that the Supreme Court in fact upheld the Harmon doctrine as a rule of international law while applying equitable apportionment only to disputes between American states. *See* Robert D. Scott, *Kansas v. Colorado Revisited*, 52 AM. J. INT'L L. 432, 433 (1958) (suggesting that "the Supreme Court, in working out the doctrine of equitable apportionment for application to *interstate* cases, has [not] questioned the Harmon doctrine as a rule of international law applicable to disputes between sovereign independent nations. On the contrary, it will be shown that the *dicta* of the Supreme Court are to the opposite effect.").

80. Kansas v. Colorado, 206 U.S. 46, 118 (1907).

81. *Id.* at 100. The Court thereby also rejected the domestic doctrines governing water rights in each state. Kansas subscribed to the "the common-law rule of riparian rights" while Colorado "recognized the right of appropriating the flowing waters to the purposes of irrigation." *Id.* at 95. A discussion of these state doctrines is beyond the scope of the present Article, which focuses on the law governing transboundary rather than domestic waters in the United States.

82. *Id.* at 97.

83. *Id.* at 113-14.

84. *Id.* at 117.

85. Wyoming v. Colorado, 259 U.S. 419 (1922).

Another transboundary water case involving Colorado came before the Supreme Court in 1922. Wyoming petitioned the Court to prevent Colorado from proceeding with a planned diversion of the waters of the Laramie River for irrigation purposes. Similarly to Kansas in *Kansas v. Colorado*, Wyoming argued that "the waters of this interstate stream cannot rightfully be taken from its watershed and carried into another, where she never can receive any benefit from them."[86] Colorado, for its part, remained true to form with its sovereignty-based arguments, claiming that it possessed the right "as a state to dispose, as she may choose, of any part or all of the waters flowing in the portion of the river within her borders, 'regardless of the prejudice that it may work' to Wyoming."[87] Colorado explicitly referred to Harmon's legal opinion, arguing that it should guide the Court's resolution of its dispute with Wyoming since in both cases there was not "enough water at times for irrigation in both states" and the question was "which state shall yield to the other."[88]

The Supreme Court rejected Colorado's position, holding that

> The river throughout its course in both states is but a single stream, wherein each state has an interest which should be respected by the other. A like contention was set up by Colorado in her answer in *Kansas v. Colorado* and was adjudged untenable. Further consideration satisfies us that the ruling was right.[89]

The Court further clarified that the equitable apportionment rule it had established in 1907 in *Kansas v. Colorado* did not refer to "an equal division of the water, but to the equal level or plane on which all the states stand, in point of power and right, under our constitutional system."[90] It then proceeded to apportion the water between Wyoming and Colorado according to their respective needs and existing uses.[91]

86. *Id.* at 456-57.

87. *Id.* at 457. As an alternative argument, however, Colorado claimed that it is "entitled to an equitable division of the waters of the river, and that the proposed diversion . . . does not exceed her share." *Id.*

88. Brief of Defendants on Demurrer at 22-23, Wyoming v. Colorado, 259 U.S. 419 (1922) (No. 03).

89. *Id.* at 466.

90. *Id.* at 465.

91. The Court found that it would be "just and equitable" to determine this apportionment on the basis of the prior appropriation doctrine which, unlike in *Kansas v. Colorado*, was accepted by both parties in *Wyoming v. Colorado*. Wyoming v. Colorado, 259 U.S. 419, 470 (1922). According to this doctrine, "the waters of the streams were regarded as open to appropriation for irrigation, mining, and other beneficial purposes" and "[a]s between different appropriations from the same stream, the one first in time was deemed superior in right." *Id.* at 459. This decree was vacated in 1957 pursuant to an agreement between the parties. Wyoming v. Colorado, 353 U.S. 953 (1957).

C. Colorado v. Kansas (1943)[92]

By 1943, both Colorado and Kansas accepted that the equitable apportionment doctrine established by the Supreme Court governed their respective uses of the Arkansas River. When their dispute over the use of the river returned to the Supreme Court, Kansas recognized that its "right to the beneficial use of water from the Arkansas River [was] based upon her equality of right as a sovereign state," and argued that this right entitled it to an equal amount of the water as Colorado regardless of any previous limited use of such water passing through its territory.[93] Colorado, for its part, acknowledged that American states were merely "quasi-sovereigns" and that "each is entitled only to its equitable share of the benefits of the flow of [a shared] stream."[94] Nonetheless, Colorado did not entirely relinquish its Harmonian claims. Rather, it asserted that "the jurisdiction of each state within its own territory is necessarily exclusive and absolute. It is susceptible of no limitation not imposed by itself."[95] Referring once again to Harmon's legal opinion, Colorado further asserted that "[i]f Kansas and Colorado were independent sovereignties, Colorado would not be obligated by any principle of international law to permit any part of the flow to pass to Kansas."[96]

Therefore, while recognizing that as a member of a federal union it was merely a "quasi-sovereign," Colorado nonetheless continued to rely on Harmonian sovereignty arguments. It submitted that "restrictions or limitations may not be forcibly imposed by a decree of [the Supreme] Court in the absence of a clear showing of serious and substantial injury" because such restrictions and limitations "constitute an actual infringement on the quasi-sovereign powers of the state."[97] Accordingly, Colorado urged the Court to reject Kansas' claim that, since the Court's 1907 decision, Colorado had "increased depletion of the water supply to the material damage of Kansas' substantial interests."[98]

Once again, the Supreme Court rejected Colorado's sovereignty-based arguments and instead applied a cost-benefit analysis to balance one state's beneficial use of the river against the injury to the other state resulting from depriving it of a similar beneficial use.[99] In doing so, the Court also rejected

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92. Colorado v. Kansas, 320 U.S. 328 (1943).

93. Brief for Defendants, Colorado v. Kansas, 320 U.S. 328 (1943) (No. 05), 1943 WL 71754, at *147.

94. Brief for Complainant, The State of Colorado, Colorado v. Kansas, 320 U.S. 328 (1943) (No. 05), 1943 WL 71753, at *53.

95. *Id.*

96. *Id.* (referring to *Harmon Opinion*).

97. *Id.* at 53-54. (citing Connecticut v. Massachusetts, 282 U.S. 600, 669 (1931)).

98. Colorado v. Kansas, 320 U.S. 328, 393 (1943).

99. *Id.*

Kansas' argument that a state is "entitled to have the stream flow as it would in nature regardless of need or use."[100] Taking into account all of the relevant circumstances surrounding the use of the Arkansas River by both states, the Court held that Kansas "has not sustained her allegations that Colorado's use has materially increased, and that the increase has worked a serious detriment to the substantial interests of Kansas."[101]

D. New Jersey v. Delaware (2008)[102]

This interstate water dispute involved the respective regulatory authority of New Jersey and Delaware over a portion of the Delaware River, which forms their boundary.[103] In 1905, New Jersey and Delaware concluded an agreement that permitted each state "on its own side of the river, [to] continue to exercise riparian jurisdiction of every kind and nature."[104] The agreement, however, did not settle the parties' long-standing dispute over the location of their boundary. This issue was resolved by the Supreme Court in 1934, when the Court held that, in the disputed portion of the boundary, Delaware owned "the river and the subaqueous soil up to the low water mark on the New Jersey side."[105]

In 2005, New Jersey complained to the Court that Delaware had refused to allow it to construct a natural gas plant onshore in New Jersey that would have extended 2,000 feet into territory that the Supreme Court had determined belonged to Delaware in its 1934 decision.[106] The Court appointed a Special Master, who determined that Delaware had "authority to regulate the proposed construction, concurrently with New Jersey, to the extent that the project reached beyond New Jersey's border and extended into Delaware's domain."[107] New Jersey challenged the Special Master's recommendation before the Court.

Both states advanced Harmon-like arguments to support their respective positions. Relying on the use of the term "riparian jurisdiction" in the parties' 1905 agreement, New Jersey argued that "it had exclusive jurisdiction over all projects appurtenant to its shores, including wharves extending past the low-water mark on New Jersey's side into Delaware

100. *Id.* at 180.

101. *Id.* at 184.

102. New Jersey v. Delaware, 552 U.S. 597 (2008).

103. *Id.* at 601-02.

104. *Id.* at 602 (quoting the Act of Jan. 24, 1907, 34 Stat. 860).

105. *Id.* at 605 (quoting New Jersey v. Delaware, 291 U.S. 361, 385 (1934)).

106. *Id.* at 602-03. Delaware's refusal led to New Jersey threatening to "withdraw state pension funds from Delaware banks, and Delaware consider[ing] authorizing the National Guard to protect its border from encroachment." A New Jersey legislator even "looked into recommissioning the museum-piece battleship *U.S.S. New Jersey*, in the event that the vessel might be needed to repel an armed invasion by Delaware." *Id.* at 607-08.

107. New Jersey v. Delaware, 552 U.S. 597, 603 (2008).

territory"[108] and that its power to regulate such projects was "to the exclusion of Delaware."[109] In other words, New Jersey asserted that it had absolute territorial sovereignty to construct on its side of the Delaware River, even if such construction encroached upon Delaware's portion of the river. Delaware, for its part, was "equally uncompromising" in its claims.[110] It relied on the Supreme Court's 1934 boundary determination to argue that "the entire River is on Delaware's 'own side,' and New Jersey consequently ha[d] no 'side' of the River on which to exercise any riparian rights or riparian jurisdiction."[111]

The Supreme Court rejected both states' extreme sovereignty-based positions. It held that the parties' 1905 agreement "did not secure to New Jersey *exclusive* jurisdiction over all riparian improvements commencing on its shores"[112] since the term "riparian jurisdiction" was not "tantamount to an express cession by Delaware of its entire 'territorial . . . jurisdiction . . . over the Delaware River.'"[113] But the Court also did not heed Delaware's claims of complete sovereignty over the river, holding that "Delaware may not impede ordinary and usual exercises of the right of riparian owners to wharf out from New Jersey's shore."[114] Rather, the Court agreed with the Special Master that "New Jersey and Delaware have overlapping authority to regulate riparian structures and operations of extraordinary character extending outshore of New Jersey's domain into territory over which Delaware is sovereign."[115] The Court concluded that, because the natural gas plant proposed by New Jersey went "well beyond the ordinary or usual," it was "within Delaware's authority to prohibit construction of the facility within its domain."[116] Once again, therefore, the Court rejected extreme Harmonian claims over shared watercourses in favor of limited state sovereignty and a cooperative solution to a transboundary water dispute.

E. Mississippi v. Tennessee (2021)[117]

The most recent Supreme Court decision involving an interstate water dispute reflects the continuing influence of the Harmon doctrine. In this dispute concerning the transboundary Middle Claiborne Aquifer, Mississippi complained that Tennessee was unlawfully pumping

108. *Id.*
109. *Id.* at 613.
110. *Id.* at 615.
111. New Jersey v. Delaware, 552 U.S. 597 (2008).
112. *Id.* at 603.
113. *Id.* at 611-12.
114. *Id.* at 622.
115. *Id.* at 603.
116. *Id.* at 622-23.
117. Mississippi v. Tennessee, 142 S. Ct. 31 (2021).

groundwater that rightfully belonged to Mississippi.[118] Rather than arguing that Tennessee's pumping violated the equitable apportionment rule,[119] Mississippi's main contention was Harmonian in nature—that Tennessee had "invaded Mississippi's sovereign territory."[120] According to Mississippi, notwithstanding Tennessee pumping the water on its side of the interstate border,[121] the groundwater was a "confined intrastate natural resource over which Mississippi [was] sovereign."[122] This was so because "groundwater taken by [Tennessee] from within Mississippi's borders would have never under normal, natural circumstances been drawn into Tennessee."[123]

A Special Master appointed by the Supreme Court disagreed, concluding that the aquifer at issue was an interstate water resource subject to the equitable apportionment doctrine.[124] The Special Master recognized that Mississippi has "control over waters within [Mississippi's] own territories" but emphasized that the Supreme Court has never "allowed one state's sovereignty to subsume an entire interstate resource."[125] According to the Special Master, Mississippi was espousing a concept of sovereignty that was too "rigid."[126] Mississippi objected to the Special Master's findings, insisting that the groundwater pumped by Tennessee was "located in Mississippi and subject to Mississippi's exclusive authority and control as a sovereign under the United States Constitution."[127]

The Supreme Court's decision in this case was the first to address the applicability of the equitable apportionment doctrine to interstate groundwater.[128] While the Court seemed hesitant to establish general

118. The State of Mississippi's Motion for Leave to File Bill of Complaint in Original Action, Complaint, and Brief in Support of Motion at 5, Mississippi v. Tennessee, 142 S. Ct. 31 (2021) (No. 143).

119. *Id.* at 17 ("The fundamental premise of this Court's equitable apportionment jurisprudence —that each of the opposing States has an equality of right to use the waters at issue—does not apply to this dispute.").

120. *Id.* at 5.

121. Mississippi v. Tennessee, 142 S. Ct. 31, 37 (2021) (noting that some of the wells drilled by Tennessee "are located just a few miles from the Mississippi-Tennessee border, though all are drilled straight down such that none crosses the physical border between the States.").

122. The State of Mississippi's Motion for Leave to File Bill of Complaint in Original Action, Complaint, and Brief in Support of Motion at 6, Mississippi v. Tennessee, 142 S. Ct. 31 (2021) (No. 143).

123. *Id.* at 9.

124. Report of the Special Master at 2, Mississippi v. Tennessee, 142 S. Ct. 31 (2020) (No. 143).

125. *Id.* at 29.

126. *Id.* at 30.

127. Exceptions to Report of the Special Master by Plaintiff State of Mississippi and Brief in Support of Exceptions at 1, Mississippi v. Tennessee, 142 S. Ct. 31 (2021) (No. 143).

128. Mississippi v. Tennessee, 142 S. Ct. 31, 37 (2021) ("This Court has never before held that an interstate aquifer is subject to equitable apportionment, so Mississippi's suit implicate[s] a question of first impression."). For commentary on the decision, see Gabriel Eckstein, *U.S. Supreme Court Issues Decision in First Ever Dispute Over Interstate Groundwater—Implications for International Law*, INTERNATIONAL WATER LAW PROJECT BLOG (Dec. 13, 2021), https://www.internationalwaterlaw.org/blog/2021/12/13/u-s-supreme-court-issues-decision-in-first-ever-dispute-over-interstate-groundwater-the-case-of-mississippi-vs-tennessee/.

principles applicable to all groundwater resources,[129] it found that in this particular case "equitable apportionment of the Middle Claiborne Aquifer would be 'sufficiently similar' to past applications of the doctrine to warrant the same treatment."[130] This was so because of the aquifer's "multistate character," the fact that its water "flows naturally between the States" even if "extremely slow[ly]," and the fact that Tennessee's actions naturally affected the aquifer in Mississippi's territory.[131] Reiterating its previous holdings in *Kansas v. Colorado* and *Wyoming v. Colorado*, the Court noted that while "each State has full jurisdiction over the lands within its borders, including the beds of streams and other waters," such jurisdiction "does not confer unfettered 'ownership or control' of flowing interstate waters themselves."[132] Indeed, the Court recalled that it has "'consistently denied' the proposition that a State may exercise exclusive ownership or control of interstate 'waters flowing within her boundaries.'"[133] The Court therefore rejected Mississippi's claim of "an absolute 'ownership' right to all groundwater beneath its surface—even after that water has crossed its borders."[134]

As these transboundary water disputes demonstrate, the Supreme Court has developed and applied the equitable apportionment doctrine at least partially in response to states' Harmonian sovereignty claims over interstate watercourses, whether asserting the right to use such watercourses as they please or to prevent other states from using them. The Supreme Court has made it clear that states' rights to transboundary watercourses reflect their status as "quasi-sovereigns" rather than sovereigns, thereby limiting the role that absolute territorial sovereignty plays in interstate water disputes.[135] Nonetheless, some American states have continued to raise Harmonian sovereignty-based claims in such disputes, evidencing the lingering effects of the Harmon doctrine.

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129. *Id.* at 39 ("we resist general propositions.").

130. *Id.*

131. Mississippi v. Tennessee, 142 S. Ct. 31, 39-40 (2021).

132. *Id.* at 40. (first quoting Kansas v. Colorado, 206 U.S., at 93; then quoting Wyoming v. Colorado, 259 U.S., at 464).

133. *Id.* (quoting Hinderlider v. La Plata River & Cherry Creek Ditch Co., 304 U.S. 92, 102 (1938)).

134. *Id.* at 38.

135. The Supreme Court has distinguished "quasi-sovereign" interests from "sovereign interests," "proprietary interests," and "private interests pursued by the State as a nominal party," and held that they "consist of a set of interests that the State has in the well-being of its populace." Alfred L. Snapp & Son, Inc. v. Puerto Rico, ex rel., Barez, 458 U.S. 592, 602 (1982).

III. THE HARMON DOCTRINE IN TRANSBOUNDARY WATER DISPUTES BETWEEN NATION STATES

There are fundamental differences in water relations between American states and among nation states as well as in the nature of state sovereignty in federal countries and at the international level. Nevertheless, there are also similarities in the way American interstate water law and international water law have evolved. Both bodies of law have moved away from extreme doctrines such as the Harmon doctrine and toward more cooperative theories such as equitable apportionment and limited territorial sovereignty. The development of equitable apportionment in the American context was discussed in Part II. A similar shift has taken place in international water law.

In addition to judicial decisions of the PCIJ and ICJ discussed below, several international instruments served to gradually replace absolute territorial sovereignty in international water law with the limited territorial sovereignty doctrine. For instance, the Institute of International Law's 1911 Madrid Resolution purported to prevent states sharing watercourses from using them in such a way as "to seriously interfere with its utilization" by the other riparian states or make "alterations therein detrimental to the bank of the other State."[136] The International Law Association's ("ILA") 1966 Helsinki Rules similarly subjected the use of shared watercourses to the equitable and reasonable utilization principle.[137] In adopting this principle in Article IV, the ILA explicitly rejected the Harmon doctrine:

> This Article reflects the key principle of international law in this area that every basin State in an international drainage basin has the right to the reasonable use of the waters of the drainage basin. It rejects the unlimited sovereignty position, exemplified by the "Harmon Doctrine", which has been cited as supporting the proposition that a State has the unqualified right to utilize and dispose of the waters of an international river flowing through its territory; such a position imports its logical corollary, that a State has no right to demand continued flow from co-basin States.[138]

Moreover, according to the ILA, the Harmon doctrine "has never had a wide following among States and has been rejected by virtually all States,

136. Inst. of Int'l Law, *International Regulation regarding the Use of International Watercourses for Purposes Other Than Navigation – Declaration of Madrid (Apr. 20, 1911)*, 24 ANNUAIRE DE L'INSTITUT DE DROIT INTERNATIONAL 365 (1911).

137. MCCAFFREY, *supra* note 3, at 413, 491.

138. Report of the Committee of the International Law Association on the Uses of the Waters of International Rivers, contained in the Report of the Fifty-Second Conference (1967), p. 477, Commentary to Article IV.

which have had occasion to speak out on the point."[139] Finally, the 1997 Convention on the Law of the Non-Navigational Uses of International Watercourses ("UNWC")[140] codified both the no significant harm principle and equitable and reasonable utilization principle, thereby effectively putting an end to the Harmon doctrine. Indeed, "no state defended [this doctrine] during the negotiation" of the Convention, presumably attesting to the fact that "the overwhelming majority of states reject[ed] the very idea of absolute territorial sovereignty with regard to international watercourses."[141]

Yet, some nation states have continued to raise Harmonian sovereignty claims in interstate water disputes, similar to those that have been raised in disputes between American states. This Part of the Article examines five such disputes submitted to the PCIJ and its successor, the ICJ. Although these courts have uniformly rejected such claims, reinforcing the consensus that the Harmon doctrine is indeed defunct, its continued invocation by state parties to transboundary water disputes suggests that the doctrine has not completely lost its appeal.

A. Territorial Jurisdiction of the International Commission of the River Oder (1929)[142]

The European Oder river, at the time of this dispute, was shared by Poland, the United Kingdom, Czechoslovakia, Denmark, France, Germany, and Sweden. The dispute, submitted to the PCIJ, concerned the territorial jurisdiction of the International Commission of the Oder. According to a treaty concluded by the seven state parties sharing the river, the jurisdiction of the Commission extended to "international" rivers, including the Oder, as well as

> all navigable parts of these river systems which naturally provide more than one State with access to the sea . . . together with lateral canals and channels constructed either to duplicate or to improve naturally navigable sections of the specified river systems, or to connect two naturally navigable sections of the same river.[143]

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139. *Id.*

140. *See* ARIEL DINAR ET AL., *supra* note 11.

141. MCCAFFREY, *supra* note 3, at 459.

142. Territorial Jurisdiction of the Int'l Comm'n of the River Oder (U.K. v Pol.*)*, Judgement, 1929 P.C.I.J. (ser. A) No. 23 (Sept. 10).

143. *Id.* at 24. The treaty at issue was the Treaty of Versailles at article 331. Treaty of Peace with Germany art. 331, June 28, 1919, 2 Bevans 43, 211 [hereinafter Treaty of Versailles].

Poland argued that this definition of "international" rivers in the treaty excluded those sections of the Warthe and the Netze[144]—two tributaries of the Oder river—that were situated exclusively in Polish territory and only provided Poland with access to the sea. Regardless of the navigability of these rivers in Polish territory, Poland asserted that the international Oder regime that was subject to the jurisdiction of the Commission ended "at the last frontier crossed"—Poland's border.[145] One of the main claims advanced by Poland in this regard was that the "international regime of navigation"—which is founded on the principles of freedom of navigation—and the "administrative regime" of the Oder Commission were distinct regimes.[146] According to Poland, the Commission constituted "an exceptional means of watercourse management. Management is normally the responsibility of the riparian states; only an express treaty provision may *limit the sovereignty* of the latter states in this respect."[147] This is because the "administration or management of a watercourse comprises decision-making powers, and sometimes even executive powers, which fall within the attributes of *territorial sovereignty*."[148] Such powers, with their corresponding "restrictions on territorial sovereignty," could not be restricted by international administration without a "formal text."[149] Therefore, while Poland recognized that the "common law of internationalized navigable watercourses" applied to the Oder, it advanced a Harmonian sovereignty-based claim to justify limiting the jurisdiction of the Oder Commission over the domestic portions of the Warthe and the Netze—that the jurisdiction of the Commission over Poland's territory would be "a serious diminishing

144. The Warthe and the Netze "rise in Poland and [] after flowing for a long way through Polish territory, they form the German-Polish frontier for a certain distance, and [] then they pass into German territory, where the Netze [] flows into the Warthe [] before that river joins the Oder." Territorial Jurisdiction of the Int'l Comm'n of the River Oder (U.K. v Pol.), Judgment, 1929 P.C.I.J. (ser. A) No. 23, at 25 (Sept. 10).

145. Territorial Jurisdiction of the Int'l Comm'n of the River Oder (U.K. v Pol.), 1929 P.C.I.J. (ser. A) No. 23 (Sept. 10), Part III-Other Documents, at 246.

146. *Id.* at 451 [translation by the author: "le régime international de la navigation" and "l'administration de la voie d'eau"].

147. *Id.* (emphasis added) [translation by the author: "Le régime international de la navigation est pour certaines voies d'eau du continent européen l'expression d'un droit international commun; il en résulte que les notions de liberté de navigation et d'égalité de traitement que ce régime implique sont applicables à toute voie d'eau. Au contraire, l'administration international est restée jusqu'à présent un mode exceptionnel de gestion des voies d'eau. Cette gestion incombe normalement aux Etats riverains; seule une disposition conventionnelle expresse limitant dans cet ordre d'idées la souveraineté de ces Etats peut l'instituer."].

148. Territorial Jurisdiction of the Int'l Comm'n of the River Oder (U.K. v Pol.), 1929 P.C.I.J. (ser. A) No. 23 (Sept. 10), Part II-Speeches made in Court, at 162 (emphasis added) [translation by the author: "l'administration ou la gestion d'une voie d'eau comporte des pouvoirs de décision, parfois même d'exécution, qui rentrent dans les attributs de la souveraineté territoriale."].

149. *Id.* at 181 [translation by the author: "Pas de restrictions à la souveraineté territoriale, telles que celles que comporte l'administration internationale, sans un texte formel."].

of its sovereignty."[150] It accordingly requested the PCIJ to interpret the treaty in a way that placed "the fewest restrictions on the sovereignty of states over a portion of their territory."[151]

The other six state parties to the treaty argued that the definition of "international" rivers in the treaty applied generally to the River Oder system.[152] Therefore, those portions of the Warthe and the Netze rivers that were entirely within Polish territory were nonetheless "international" because they formed part of the Oder "system," which provided more than one state with access to the sea.[153] If Poland's definition of "international" were to apply, the six governments contended that the result would be "inequitable" because "the upstream State gets the benefit of internationalization on the territory of the States lower down, but gives nothing in return on the navigable sections of the river in her own territory. The benefits are entirely one-sided."[154] Such a result would betray the "international community of interests" that exists with respect to interstate rivers.[155]

The PCIJ rejected Poland's sovereignty-based contention that "the text being doubtful, the solution should be adopted which imposes the least restriction on the freedom of States."[156] The court held that the determination of whether a particular tributary was "international" in accordance with the treaty's definition should be guided by the notion of a "community of interest of riparian States."[157] This "community of interest" is in turn

> the basis of a common legal right, the essential features of which are the perfect equality of all riparian States in the user of the whole

150. *Id.* at 463 [translation by the author: "tandis que l'interprétation des six Gouvernements conduit à imposer à l'une des Parties signataires du Traité la juridiction sur son territoire d'une Commission internationale, c'est-à-dire une grave diminution de sa souveraineté, celle défendue par le Gouvernement polonais n'entraîne que l'application éventuelle du régime international de la navigation, c'est-à-dire de principes qui constituent le droit commun des voies navigables internationalisées."].

151. Territorial Jurisdiction of the Int'l Comm'n of the River Oder (U.K. v. Pol.), 1929 P.C.I.J. (ser. A) No. 23 (Sept. 10), Part II-Speeches made in Court, at 182 [translation by the author: "entre deux interprétations contraires, il convient, toutes choses égales par ailleurs, de donner toujours la préférence à celle qui déroge le moins au droit international commun, et, pour appliquer ce principe à notre espèce, à celle qui comporte le moins de restrictions à la souveraineté des États sur une portion de leur territoire."].

152. Territorial Jurisdiction of the International Commission of the River Oder (U.K. v. Pol.), Judgment, 1929 P.C.I.J. (ser. A) No. 23, at 9-10 (Sept. 10).

153. *Id.* at 286.

154. *Id.* at 289-90.

155. *Id.* at 295.

156. Territorial Jurisdiction of the Int'l Comm'n of the River Oder (U.K. v. Pol.), Judgment, 1929 P.C.I.J. (ser. A) No. 23, at 26.

157. *Id.* at 27.

> course of the river and the exclusion of any preferential privilege of any one riparian State in relation to the others.[158]

In the specific case of the River Oder, the PCIJ found that "this common right extends to the whole navigable course of the river,"[159] which included the tributaries located in Polish territory.

It is worth noting that this dispute involved navigational, rather than non-navigational, uses of an interstate river.[160] Unlike non-navigational uses, the fundamental principle governing navigational uses remains the territorial sovereignty of the state through whose territory a navigable river flows. The difference is rooted in the fact that

> it may well be less difficult for a state to restrain its non-navigational uses in the interests of cooperation . . . with its neighbors than to allow a foreign physical presence—that is, a vessel flying the flag of another nation—to enter its territory.[161]

Nevertheless, the River Oder dispute is relevant for present purposes because by concluding the treaty and establishing the Commission, the states sharing the Oder agreed to relinquish their complete sovereignty over the portions of the river flowing through their respective territories. Therefore, the starting point for resolving the dispute was no longer the general principle of territorial sovereignty generally governing navigational uses of interstate rivers but rather the parties' limited sovereignty resulting from their treaty, and the PCIJ was called upon to interpret the precise limits of this sovereignty under the treaty. In other words, notwithstanding the navigational context of this dispute, the arguments put forward by the state parties are relevant to evaluating the degree to which Harmonian claims are invoked where limited territorial sovereignty is the starting point. Moreover, the reasoning of the PCIJ in its judgment, and particularly the "community of interest" doctrine it established, have also been applied in disputes involving non-navigational uses of transboundary watercourses.[162] For instance, it was relied upon 70 years later by the ICJ in the dispute between Slovakia and Hungary concerning the Gabčíkovo-Nagymaros Project, discussed *infra* Part C.

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158. *Id.*

159. *Id.* at 28.

160. *See* MCCAFFREY, *supra* note 3, at 52-57 (on the relationship between navigational and non-navigational uses of international watercourses, noting that navigational uses "remain important and may interact with non-navigational uses, and vice versa." *Id.* at 53).

161. MCCAFFREY, *supra* note 3, at 174.

162. *Id.* at 140 ("While the question put to the Court concerned rights of navigation, the analysis . . . , based as it was upon 'principles governing international fluvial law in general,' is of broader applicability."), 176; Lipper, *supra* note 17, at 29 (the P.C.I.J.'s "language and its reasoning make it equally applicable to non-navigational uses.").

B. The Diversion of Water from the Meuse (1937)[163]

This dispute concerned the interpretation of an 1863 treaty concluded by the Netherlands and Belgium to govern diversions of water from the Meuse river for the feeding of navigation and irrigation canals. The dispute is said to involve "the first diplomatic assertion of any rule of international law" concerning the non-navigational uses of international watercourses.[164] The two states had long disputed the use of the Meuse river, whose "most important function . . . [wa]s that of a reservoir for other waterways."[165] The question presented to the PCIJ was whether various works undertaken by Belgium in connection with the construction of a canal, done without the consent of the Netherlands, were consistent with the latter's rights under the treaty.[166] Belgium, for its part, counterclaimed that the Netherlands' construction of a canal and associated works on the latter's territory were incompatible with the treaty.[167]

In claiming that Belgium violated the treaty, the Netherlands relied in part on a Harmonian sovereignty-based argument, namely that Belgium's construction of the canal infringed the Netherlands' "privilege of *control* over diversions of water from the Meuse."[168] In other words, the Netherlands was claiming not only the right to control the Meuse in its own territory, but also the right to control it in Belgium's territory.[169] Through such control, the Netherlands was hoping "to make sure at any time that the quantities of water drawn from the Meuse to supply the canals . . . do not exceed the total quantities fixed in the Treaty."[170] As the PCIJ noted, "The Netherlands' contention necessarily implies that the Treaty of 1863 intended to place the Parties in a situation of legal inequality by conferring on the Netherlands a right of control to which Belgium could not lay claim."[171] At the same time, the Netherlands rejected Belgium's counterclaim because "Belgium did not

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163. Diversion of Water from the Meuse (Neth. v. Belg.), Judgment, 1937 P.C.I.J. (ser. A/B) No. 70 (June 28).

164. MCCAFFREY, *supra* note 3, at 70; Lipper, *supra* note 17, at 25.

165. Diversion of Water from the Meuse (Neth. v. Belg.), Judgment, 1937 P.C.I.J. (ser. A/B) No. 70, at 10 (June 28).

166. *Id.* at 5.

167. *Id.* at 7 (Belgium's counterclaim was that "the local situation at Maestricht provided for by the Treaty of 1863 has been altered by the unilateral decision of the Netherlands Government" and that "this alteration has rendered the proper application of the Treaty impossible").

168. Diversion of Water from the Meuse (Neth. v. Belg.), Judgment, 1937 P.C.I.J. (ser. A/B) No. 70, at 18 (June 28) (emphasis added).

169. *Id.* (the Netherlands was claiming "not merely to be able to control what happens in their own territory, but to control the supply of water drawn from the Meuse to feed the system of canals referred to in the Treaty.").

170. *Id.*

171. *Id.* at 19.

possess any right of control similar to that conferred on the Netherlands by the Treaty."[172]

While the PCIJ found it unnecessary to apply "general rules of international law as regards rivers" to resolve the dispute,[173] it did reject the Netherlands' sovereignty-based argument on the basis of the interpretation and application of the parties' treaty and concluded that the treaty did not create "a position of inequality" between the two states.[174] Given the equal rights of the parties under the treaty, the PCIJ held that each state could use as it saw fit "the canals covered by the Treaty in so far as concerns canals which are situated in Netherlands or Belgian territory, as the case may be, and do not leave that territory" so long as the diversion of water did not affect the normal level and flow in the shared canals.[175]

C. Case Concerning the Gabčíkovo-Nagymaros Project (1997)[176]

This dispute concerned the implementation and termination of a 1977 treaty between Slovakia and Hungary governing the joint construction and operation of the Gabčíkovo-Nagymaros barrage system on the Danube river.[177] Slovakia complained that Hungary had suspended and subsequently abandoned the joint project in violation of the treaty. Hungary, in turn, complained that Slovakia's unilateral damming and diversion of the Danube on Slovakia's territory caused unlawful harm to Hungary.[178] Most relevant for present purposes is Hungary's claim against Slovakia's unilateral actions.[179]

Hungary argued that Slovakia had violated the fundamental principles of limited territorial sovereignty under international water law—the obligation not to cause damage to the environment of other states and the principle of equitable use of shared natural resources.[180] It also argued that the "classical scope of competence of sovereign states to safeguard and

172. *Id.*

173. Diversion of Water from the Meuse (Neth. v. Belg.), Judgment, 1937 P.C.I.J. (ser. A/B) No. 70, at 16 (June 28).

174. *Id.* at 20 ("It would only be possible to agree with the contention of the Netherlands Agent that the Treaty had created a position of inequality between the contracting Parties if that were expressly indicated by the terms of the Treaty; but the text . . . is not sufficient to justify such an interpretation.").

175. *Id.* at 26.

176. Gabčíkovo-Nagymaros Project (Hung. v. Slovk.), Judgment, 1997 I.C.J. 7 (Sept. 25).

177. At the time it was Czechoslovakia that concluded the treaty with Hungary, but the parties recognized that Slovakia was the sole successor in respect of rights and obligations relating to the Gabčíkovo-Nagymaros Project. Gabčíkovo-Nagymaros Project (Hung. v. Slovk.), Judgment, 1997 I.C.J. 7, at 11 (Sept. 25).

178. *Id.* at 25.

179. With regard to Slovakia's claim against Hungary the ICJ found that Hungary had indeed violated the treaty by suspending and abandoning the project. *Id.* at 43.

180. Memorial of the Republic of Hungary, Gabčíkovo-Nagymaros Project (Hung. v. Slovk), 1997 I.C.J. Pleadings 1, at 219 (May 2, 1994).

protect natural resources" had been revised in modern international environmental law.[181] Consequently, according to Hungary, "no state can be presumed to have alienated sovereignty or control over its natural resources."[182] At the same time, Hungary framed some of its complaints against Slovakia in Harmonian sovereignty terms. For instance, it asserted that Slovakia "did not respect the principle of the permanent sovereignty of Hungary over one of its main natural resources"[183] and that the parties' treaty could not "be interpreted as depriving Hungary of its sovereignty over one of its main natural resources."[184] According to Slovakia, Hungary's position seemed to be that the Danube "constitutes simultaneously a shared natural resource" while also being a "natural resource over which Hungary has sovereignty."[185] Hungary rejected any contradiction between a state's "sovereignty over the part of the common river which flow on its territory" and its obligation to "exercise its sovereignty over its part of the shared natural resource in such a way so as not to prejudice the equal rights of other watercourse States."[186] Nonetheless, the damage Hungary was alleging Slovakia had caused to it through Slovakia's unilateral actions on the Danube was framed, at least in part, as a violation of Hungary's "sovereignty."[187]

Slovakia, for its part, recognized the "shared sovereignty" of riparian states over transboundary watercourses[188] and rejected Hungary's claim to "permanent sovereignty over natural resources" as inapplicable to such watercourses.[189] Nonetheless, its position was also partially framed in Harmon-like sovereignty terms. Slovakia asserted, for instance, that "even substantial changes in river flow require no consent of the other riparian."[190] Therefore, according to Slovakia, it was free to complete the project "on its own sovereign territory and to draw the quantity of water from the Danube

181. *Id.* at 286.

182. Counter- Memorial of the Republic of Hungary, Gabčíkovo-Nagymaros Project (Hung. v. Slovk.), 1997 I.C.J Pleadings 1, at 262 (Dec. 5, 1994).

183. Memorial of Republic of Hungary, Gabčíkovo-Nagymaros Project (Hung. v. Slovk.), 1997 I.C.J. Pleadings 1, at 219 (May 2, 1994).

184. *Id.* at 233.

185. Counter-Memorial submitted by the Slovak Republic, Gabčíkovo-Nagymaros Project (Hung. v. Slovk.*)*, 1997 I.C.J. Pleadings 1, at 345 (Dec. 5, 1994).

186. Reply of the Republic of Hungary, Gabčíkovo-Nagymaros Project (Hung. v. Slovk.), 1997 I.C.J. Pleadings 1, at 136-37 (June 20, 1995).

187. Counter-Memorial of the Republic of Hungary, Gabčíkovo-Nagymaros Project (Hung. v. Slovk.),1997 I.C.J. Pleadings 1, at 229 (Dec. 5, 1994).

188. Memorial submitted by the Slovak Republic, Gabčíkovo-Nagymaros Project (Hung. v. Slovk.), 1997 I.C.J. Pleadings 1, at 293 (May 2, 1994).

189. Counter-Memorial submitted by the Slovak Republic, Gabčíkovo-Nagymaros Project (Hung. v. Slovk.), 1997 I.C.J. Pleadings 1 at 346 (Dec. 5, 1994).

190. Memorial submitted by the Slovak Republic, Gabčíkovo-Nagymaros Project (Hung. v. Slovk.), 1997 I.C.J. Pleadings 1, at 292-93 (May 2, 1994).

that had been agreed by the parties."[191] Given Hungary's refusal to proceed with the joint project, Slovakia argued, "the only solution" was for it to do so "at a point where Czechoslovakia had sole sovereignty."[192]

The ICJ rejected the parties' sovereignty-based claims. Instead, the court found that their treaty had envisioned the project to be "an integrated joint project with the two contracting parties on an equal footing in respect of the financing, construction and operation of the works,"[193] as well as in respect to its benefits.[194] The court found that, rather than implementing the project jointly as envisioned by the treaty, Slovakia's unilateral actions

> appropriate[d], essentially for its use and benefit, between 80 and 90 percent of the waters of the Danube before returning them to the main bed of the river, despite the fact that the Danube is not only a shared international watercourse but also an international boundary river.[195]

Even though the court held that Hungary's suspension and abandonment of the joint project was unlawful, it also noted that this "cannot mean that Hungary forfeited its basic right to an equitable and reasonable sharing of the resources of an international watercourse."[196] Relying on the community of interests doctrine established by the PCIJ in the *River Oder* case, the ICJ concluded that Slovakia "by unilaterally assuming control of a shared resource, and thereby depriving Hungary of its right to an equitable and reasonable share of the natural resources of the Danube . . . failed to respect the proportionality which is required by international law."[197] The court also found this to be in line with the UNWC, which was concluded the same year and required watercourse states to "participate in the use, development and protection of an international watercourse in an equitable and reasonable manner."[198]

D. Dispute Regarding Navigational and Related Rights (2009)[199]

This dispute involved claims advanced by Costa Rica and Nicaragua concerning their respective rights to use the San Juan River, which forms

191. *Id.* at 157.
192. *Id.* at 287.
193. Gabčíkovo-Nagymaros Project (Hung. v. Slovk.), Judgment, 1997 I.C.J. 7, at 24 (Sept. 25).
194. *Id.* at 79.
195. *Id.* at 54.
196. *Id.*
197. *Id.* at 56.
198. Gabčíkovo-Nagymaros Project (Hung. v. Slovk.), Judgment, 1997 I.C.J. 7, at 80 (Sept. 25) (quoting Convention on the Law of Non-Navigational Uses of International Watercourses art. 5, May 21, 1997, 2999 UNTS 77).
199. Dispute Regarding Navigational and Related Rights (Costa Rica v. Nicar.), Judgment, 2009 I.C.J. 213 (July 13).

part of their border.[200] In 1858, the two states concluded a treaty that fixed the course of the border along the right bank of the San Juan River, on Costa Rica's side. The treaty thus "established Nicaragua's dominion and sovereign jurisdiction over the waters of the San Juan River" but also reserved a "perpetual" right of free navigation for Costa Rica on the section of the river where the right bank, i.e., the Costa Rican side, marked the border between the two states.[201] Upstream from that section, both states accepted that "the San Juan flows entirely in Nicaraguan territory . . . in the sense that both its banks belong to Nicaragua."[202]

Starting in the 1980s, Nicaragua introduced certain measures that restricted navigation by Costa Rican boats.[203] Costa Rica instituted proceedings before the ICJ, claiming that Nicaragua had violated its right of free navigation on the river as well as the right of its inhabitants to fish in the river for subsistence purposes.[204] Nicaragua, for its part, requested the court to declare not only that it had not violated Costa Rica's rights but also that Costa Rica was obliged to comply with the regulations for navigation in the San Juan River imposed by Nicaraguan authorities, as well as that Nicaragua had "the right to dredge the San Juan . . . even if this affects the flow of water to other present day recipients of this flow."[205]

Nicaragua viewed its own sovereignty over the river as "exclusive" and Costa Rica's right to navigation as "restricted."[206] Treating the San Juan as "a wholly Nicaraguan river,"[207] Nicaragua argued that its "full" sovereignty over the river also included the "plenary jurisdiction" to regulate it, including any activities by Costa Rica.[208] Therefore, Nicaragua asserted that "the basic principle of international law which applies in the present case is the territorial sovereignty of Nicaragua on the waters and the bed of the river."[209] And because Costa Rica's "strictly qualified"[210] right of navigation under the treaty limited Nicaragua's exercise of its "otherwise unlimited territorial sovereignty"[211] over the river, it requested the ICJ to apply a

200. *Id.* at 226.

201. *Id.* at 229, 232, 234.

202. *Id.* at 232.

203. Dispute Regarding Navigational and Related Rights (Costa Rica v. Nicar.), Judgment, 2009 I.C.J. 213, 230-31 (July 13).

204. *Id.* at 222-23 (arguing that Nicaragua had violated Costa Rica's "obligation not to impose other impediments on the exercise of the right of free navigation" and its obligation "to permit riparians of the Costa Rican bank to fish in the River for subsistence purposes.").

205. *Id.* at 223-24, 226.

206. Counter-Memorial of the Republic of Nicaragua, Dispute Concerning Navigational and Related Rights (Costa Rica v. Nicar.), 2009 I.C.J. Pleadings (May 29, 2007).

207. *Id.* at 111.

208. *Id.* at 87.

209. *Id.* at 138.

210. *Id.* at 140.

211. Rejoinder of the Republic of Nicaragua, Dispute Regarding Navigational and Related Rights (Costa Rica v. Nicar.), 2009 I.C.J Pleadings 69 (July 15, 2008).

"restrictive interpretation in case of doubt as to its extent and scope."[212] Such a restrictive interpretation, according to Nicaragua, would not only limit Costa Rica's navigational rights but also exclude "any fishing rights in favour of Costa Rican nationals."[213] Costa Rica, in contrast, asserted that Nicaragua's territorial sovereignty over the San Juan was not absolute, but rather "conditional upon the Costa Rican perpetual rights of free navigation" under the treaty.[214] Its view of its own right to free navigation, however, was more absolutist. According to Costa Rica, its navigation of the San Juan was a right "to navigate freely, without impediments, conditions, restrictions or charges and duties of any kind" imposed by Nicaragua in the exercise of its sovereignty.[215]

Therefore, as in the *River Oder* case, the dispute between Costa Rica and Nicaragua involved a treaty that limited the parties' respective rights in specific ways. Nicaragua's Harmonian position is perhaps unsurprising, given that (unlike in the *River Oder* case) the treaty granted it ownership of the river. However, Nicaragua was also espousing a narrow, sovereignty-based interpretation of the treaty with respect to Costa Rica's navigation and fishing rights.

The ICJ recognized that, pursuant to the parties' treaty, those activities not covered by Costa Rica's right of free navigation on the San Juan River were subject to Nicaragua's "sovereign power to authorize and regulate as it sees fit any activity that takes place on its territory, of which the river forms part."[216] However, the court disagreed with Nicaragua that its sovereignty over the river meant that "Costa Rica's right of free navigation should be interpreted narrowly."[217] According to the court, "[w]hile it is certainly true that limitations of the sovereignty of a State over its territory are not to be presumed, this does not mean that treaty provisions establishing such limitations . . . should for this reason be interpreted *a priori* in a restrictive way."[218] Treating the two states' respective rights under the treaty as equal, the ICJ found that "Nicaragua's sovereignty is affirmed only to the extent that it does not prejudice the substance of Costa Rica's right of free navigation in its domain."[219]

212. *Id.* at 69-70 (quoting S.S. Wimbledon (U.K. v. Japan), Judgment, 1923 P.C.I.J. (ser. A) No. 1 at 24 (Aug. 17)).

213. Counter-Memorial of the Republic of Nicaragua, Dispute Regarding Navigational and Related Rights (Costa Rica v. Nicar.), 2009 I.C.J. Pleadings 203 (May 29, 2007).

214. Memorial of Costa Rica, Dispute Regarding Navigational and Related Rights (Costa Rica v. Nicar.), 2009 I.C.J Pleadings 49 (Aug. 29, 2006).

215. *Id.* at 53.

216. Dispute Regarding Navigational and Related Rights (Costa Rica v. Nicar), Judgment, 2009 I.C.J. 213, 235 (July 13).

217. *Id.* at 237.

218. *Id.*

219. *Id.*

Within this "domain" of Costa Rica's right of free navigation, the ICJ held that Nicaragua had "the power to regulate the exercise by Costa Rica of its right to freedom of navigation," but that this power was "not unlimited."[220] The court also rejected Nicaragua's contention that "as the exclusive holder of sovereign authority and title over the river . . . it had no obligation to consult with or inform Costa Rica before making such regulations."[221] Despite the parties' treaty being silent on the issue of notification, the ICJ imposed on Nicaragua "an obligation of notification of regulations" respecting the navigation of the San Juan River, but stopped short of also imposing on Nicaragua an obligation to consult with Costa Rica prior to adopting the regulations.[222] Finally, the ICJ found that Costa Rica had a "customary right"—i.e., a right "based on custom" rather than on the parties' treaty—to "subsistence fishing" in the San Juan River, so long as such fishing was conducted from the banks of the river rather than from vessels.[223] With regard to Nicaragua's claim to a right to dredge the San Juan, the ICJ found that "Nicaragua may execute such works of improvement as it deems suitable," but again held that such right was not absolute—it could not "seriously impair navigation on tributaries of the San Juan belonging to Costa Rica."[224]

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220. Dispute Regarding Navigational and Related Rights (Costa Rica v. Nicar), Judgment, 2009 I.C.J. 213, 249 (July 13).

221. *Id.* at 251.

222. *Id.* at 251-52.

223. *Id.* at 265-66. This right was "subject to any Nicaraguan regulatory measures relating to fishing adopted for proper purposes." *Id.*

224. *Id.* at 269, ¶ 155. Another dispute between Costa Rica and Nicaragua relating to the San Juan River was decided by the ICJ in 2015 (Certain Activities Carried out by Nicaragua in Border Area (Costa Rica v. Nicar.) joined with Construction of Road in Costa Rica Along San Juan River (Nicar. v. Costa Rica), Judgment, 2015 I.C.J. Rep. 665, 711, ¶ 117 (Dec. 16). Particularly relevant for present purposes was Costa Rica's claim against Nicaragua that the latter's dredging and diversion activities in the river harmed Costa Rica in violation of Nicaragua's substantive obligations under international environmental law. *Id.* at 710, ¶ 114. Some of Nicaragua's arguments in its defense again revealed Harmonian undertones. Nicaragua asserted that even if harm had been caused by its dredging and diversion activities, those activities were nonetheless lawful because the parties' treaty permitted it to undertake "any dredging activity, possibly even if it is harmful to Costa Rica." *Id.* at 711, ¶ 117. Given its status as "exclusive sovereign" over the river, Nicaragua reiterated that the "basic principle of international law which applies in the present case is the territorial sovereignty of Nicaragua on the waters and the bed of the river." Counter-Memorial of the Republic of Nicaragua, Dispute Concerning Certain Activities Carried out by Nicaragua in the Border Area, 2015 I.C.J. Pleadings, 33, 56 (Aug. 6, 2012). The ICJ again rejected Nicaragua's sovereignty argument, noting that under customary international law "[a] State is . . . obliged to use all the means at its disposal in order to avoid activities which take place in its territory, or in any area under its jurisdiction, causing significant damage to the environment of another State." Certain Activities Carried out by Nicaragua in Border Area (Costa Rica v. Nicar.) joined with Construction of Road in Costa Rica Along San Juan River (Nicar. v. Costa Rica), Judgment, 2015 I.C.J. Rep. at 711, ¶ 118 (Dec. 16) (quoting Pulp Mills on the River Uruguay (Arg. v. Uru.), Judgment, 2010 I.C.J. Rep. 56, ¶ 101 (Apr. 20)). However, the ICJ found that Costa Rica had failed to show evidence of harm caused by Nicaragua's activities in the river, and therefore held that the latter did not violate its obligations under international environmental law. *Id.* at 712.

E. The Silala Waters (Ongoing)[225]

This dispute between Chile and Bolivia concerning the waters of the Silala was pending before the ICJ at the time of writing. The crux of the dispute is the status of the Silala as an international watercourse whose use is governed by international water law. According to Chile, the Silala flows naturally from Bolivia into Chilean territory, making it an international watercourse.[226] Therefore, both countries have a right to the equitable and reasonable utilization of the entire Silala watercourse and an obligation to cooperate and not to cause significant harm to one another under international water law principles.[227] Bolivia, in contrast, draws a distinction between Silala waters flowing naturally into Chile and "*artificially*-flowing" waters.[228] According to Bolivia, the Silala has been enhanced by way of artificial channels and its flow into Chile is partially man-made, making it, at least in part, a non-international watercourse.[229] Therefore, Bolivia claims that international water law principles govern the naturally, but not the artificially, flowing cross-border Silala waters.[230]

This article is not concerned with whether the Silala has in fact been "artificially enhanced," or with the impact of any such enhancement on the status of the Silala under international water law.[231] More relevant for present purposes are the Harmonian undertones of Bolivia's position on these questions.[232] In its written submissions, Bolivia claimed that it has "*sovereignty* over the artificial flow of Silala waters engineered, enhanced, or produced in its territory."[233] Therefore, according to Bolivia, "Chile has no

225. Dispute Over the Status and Use of the Waters of the Silala (Chile v. Bol.), 2017 I.C.J. (July 3).

226. Memorial of the Republic of Chile, Dispute Over the Status and Use of the Waters of the Silala (Chile v. Bol.), 2017 I.C.J. Pleadings 1, ¶¶ 1.3, 1.16, (July 3).

227. *Id.* ¶ 5.1.

228. Counter-Memorial of the Plurinational State of Bolivia, Dispute over the Status and Use of the Waters of the Silala (Chile v. Bol.), 2017 I.C.J. Pleadings 13, ¶ 14 (Sep. 3, 2018).

229. *Id.* ¶¶ 10, 12, 42. Bolivia defines an "artificially enhanced watercourse" as "one that has been modified by human engineering in a manner that substantially augments the flow and volume of the water that crosses the border." *Id.* ¶ 103.

230. *Id.* ¶ 16.

231. In this regard, see Tamar Meshel, *Artificial Waterways in International Water Law: An American Perspective*, 55 VAND. J. TRANSNAT'L L. 49 (2022).

232. Mihajlo Vučić, *Silala Basin Dispute—Implications for the Interpretation of the Concept of International Watercourse*, 2017 ANNALS FAC. L. BELGRADE INT'L ED. 91, 105 (2017) (discussing how "The Bolivian claim very much resembles the theory of 'absolute territorial sovereignty', also referred as the 'Harmon doctrine'.").

233. Counter-Memorial of the Plurinational State of Bolivia, Dispute over the Status and Use of the Waters of the Silala (Chile v. Bol.), 2017 I.C.J. Pleadings ¶ 20 (Sep. 3, 2018) (emphasis added). In its oral argument, Bolivia clarified that this sovereignty argument was a corollary to its sovereignty over the artificial channels and drainage mechanisms in the Silala that are located in its territory, which Chile has not disputed. Dispute over the Status and Use of Waters of the Silala (Chile v. Bol.), Verbatim Record, ¶¶ 32-33 (Apr. 5, 2022), https://www.icj-cij.org/public/files/case-related/162/162-20220405-ORA-01-00-BI.pdf.

right to any part of that artificial flow," and any "delivery" of such flow from Bolivia to Chile should be subject to Bolivia's agreement.[234] Bolivia made these sovereignty-based claims notwithstanding its recognition that the Silala has always had a "cross-border water flow," arguing that such flow was "considerably reduced" prior to the installation of the artificial channels.[235]

Bolivia's fundamental claim is therefore Harmonian in nature, namely that "sovereignty over the artificial infrastructure in its territory affords Bolivia sovereignty over the artificial flows generated by that infrastructure."[236] Bolivia relied on this claim to assert "the sole authority to decide on the artificial channels and drainage mechanisms within its sovereign territory"[237] as well as "full rights and authority over the *artificially* created flows and volumes of Silala water coursing across that frontier."[238] These "artificial flows," according to Bolivia, are to be "regulated by Bolivian domestic law" rather than international water law.[239] It remains to be seen how the ICJ will deal with Bolivia's sovereignty-based Harmonian claims in the resolution of this dispute.

IV. THE HARMON DOCTRINE IN TRANSBOUNDARY WATER DISPUTES—POLITICAL RHETORIC OR "HARMON REDIVIVUS"[240]?

Notwithstanding the Harmon doctrine being widely denounced and even declared dead, its lingering presence is evidenced by the sovereignty-based claims advanced by some American states and nation states in

234. Counter-Memorial of the Plurinational State of Bolivia, Dispute over the Status and Use of the Waters of the Silala (Chile v. Bol.), 2017 I.C.J. Pleadings ¶ 20 (Sep. 3, 2018). Bolivia softened this claim somewhat in its oral argument, submitting that "the enhanced surface flow of the[] waters . . . could be used by Bolivia in . . . uses that it might consider pertinent, *while of course also keeping in mind Chile's rights*." Dispute over the Status and Use of Waters of the Silala (Chile v. Bol.), Verbatim Record, ¶ 28 (Apr. 4, 2022), https://www.icj-cij.org/public/files/case-related/162/162-20220404-ORA-01-00-BI.pdf (emphasis added).

235. Counter-Memorial of the Plurinational State of Bolivia, Dispute over the Status and Use of the Waters of the Silala (Chile v. Bol.), 2017 I.C.J. Pleadings ¶ 62 (Sep. 3, 2018).

236. Rejoinder of the Plurinational State of Bolivia, Dispute Over the Status and Use of the Waters of the Silala (Chile v. Bol.), I.C.J. Pleadings ¶ 38, heading 4.B.1 (May 15, 2019), https://www.icj-cij.org/public/files/case-related/162/162-20190515-WRI-01-00-EN.pdf. Indeed, Chile has accused Bolivia of taking a "'Harmon Doctrine' approach" to the Silala dispute. Dispute over the Status and Use of Waters of the Silala (Chile v. Bol.), Verbatim Record, at 37 (Apr. 1, 2022), https://www.icj-cij.org/public/files/case-related/162/162-20220401-ORA-01-00-BI.pdf.

237. Counter-Memorial of the Plurinational State of Bolivia, Dispute Over the Status and Use of the Waters of the Silala (Chile v. Bol.), 2017 I.C.J. Pleadings ¶ 106 (Sept. 3, 2018).

238. *Id.* ¶ 110.

239. *Id.* ¶ 115. At the same time, however, Bolivia seems to recognize that it must manage the artificial works located in its territory in conformity with "customary international legal norms governing transboundary watercourses." Rejoinder of the Plurinational State of Bolivia, Dispute Over the Status and Use of the Waters of the Silala (Chile v. Bol.), I.C.J. Pleadings ¶ 84 (May 15, 2019).

240. EDITH BROWN WEISS ET AL., INTERNATIONAL ENVIRONMENTAL LAW AND POLICY 765 (2d ed. 2007).

transboundary water disputes. Two possible explanations for this continued invocation of absolute sovereignty over transboundary watercourses may be suggested. First, states advocating for absolute territorial sovereignty may believe that it is what the applicable law requires, i.e., that the Harmon doctrine reflects the *lex lata*—the law as it exists.[241] Second, these states may believe that absolute territorial sovereignty is what the law *should* require, i.e., the *lex ferenda*.[242]

The first explanation may be disposed of quite swiftly. Although "government statements constitute valuable evidence of what states believe" the law to be,[243] it has long been doubted whether the Harmon doctrine ever represented a rule of American or international law.[244] Even if it did at one point, legal developments spanning more than a century (evidenced in treaties, judicial decisions, and other international instruments reviewed above) suggest the Harmon doctrine is no longer considered part of international water law. In the American context, the Supreme Court's recent decision in *Mississippi v. Tennessee* leaves no doubt that absolute sovereignty claims have no place in water disputes between states of the Union. The suggestion that governments might simply be unaware of these legal developments seems implausible. Therefore, American states and nation states are unlikely to actually believe in the validity or merit of absolute territorial claims as a matter of existing law.

A second explanation for states' continued invocation of Harmonian claims might be that they believe the Harmon doctrine should be reinstated to govern transboundary water relations. This explanation also fails. Transboundary water relations both within the United States and internationally are frequently characterized by cooperation, which requires concessions and compromises that are antithetical to the self-interested and unilateral nature of the Harmon doctrine.[245] Transboundary water cooperation is most evident in interstate arrangements—water compacts in the United States and water treaties at the international level. Many of these compacts and treaties explicitly adopt principles of equitable sharing of interstate waters, thereby effectively rejecting the Harmon doctrine.

In the United States, one of the main mechanisms used by states to allocate and manage transboundary waters is water compacts.[246] Water

241. *Lex Lata*, BLACK'S LAW DICTIONARY (11th ed. 2019).

242. This is "something that in some sense ought to be law, but is not." Hugh Thirlway, *Reflections on Lex Ferenda*, 32 NETH. Y.B. INT'L L. 3, 4 (2001).

243. Lipper, *supra* note 17, at 25.

244. *Id.* at 22-23.

245. DINAR ET AL., *supra* note 11, at 16-17 (discussing transboundary water cooperative developments).

246. CRAIG ET AL., *supra* note 4, at 169. A database of interstate compacts concluded between 1922 and 1997 is available as part of the Transboundary Freshwater Dispute Database at Oregon State University, http://gis.nacse.org/tfdd/domesticCompacts.php.

compacts are interstate contracts that are subject to congressional approval and thereby assume the status of federal law.[247] Dozens of water compacts are in force across the United States to govern the allocation, management, and quality of many transboundary watercourses and set out cooperative requirements such as information exchange.[248] Some compacts centralize the management of interstate watercourses, while others simply apportion them among several states.[249] The very existence of interstate water compacts is antithetical to the Harmon doctrine, which is based on the unfettered ability of a state to use water resources flowing through its territory. Consider, for example, the Colorado River Compact, a compact whose parties include Colorado—one of the states that has repeatedly invoked Harmonian arguments at the Supreme Court. One of the Compact's main purposes is "to provide for the equitable division and apportionment of the use of the waters of the Colorado River System."[250] Therefore, it is difficult to square the existence of such compacts and their water sharing provisions with the notion that American states invoking absolute sovereignty claims wish to reintroduce the Harmon doctrine into the law governing transboundary watercourses.

At the international level, interstate water treaties are as ubiquitous as water compacts in the United States[251] and "almost all river treaties signed in the last 100 years reject" the Harmon doctrine.[252] Indeed, even those states that seem to pay lip service to the Harmon doctrine have entered into treaties "containing provisions in derogation of such absolute sovereignty."[253] A recent study of almost 500 interstate water treaties has found that "international treaty practices are shifting . . . to the equal protection of prior and later uses."[254] A prime example of a cooperative water treaty is the one concluded by the United States in the very same dispute that spawned the Harmon doctrine—its Rio Grande dispute with Mexico. Notwithstanding Harmon's self-interested position as set out in his opinion, the United States ultimately concluded an agreement with Mexico

247. CRAIG ET AL., *supra* note 4, at 181.

248. *Id.* at 182.

249. *Id.* at 182-83.

250. COLO. REV. STAT. § 36-67-101 (2020).

251. A database of such treaties concluded between 1820 and 2007 is available as part of the Transboundary Freshwater Dispute Database at Oregon State University. *See International Freshwater Treaties Database*, OREGON STATE UNIVERSITY, https://transboundarywaters.science.oregonstate.edu/content/international-freshwater-treaties-database (last visited Aug. 3, 2022).

252. Peter H. Gleick, *Water and Conflict: Fresh Water Resources and International Security*, 18 INT'L SEC. 79, 107 (1993). For lists of interstate water treaties recognizing the equality of right of the riparian states and limiting their power to unilaterally divert or use waters, see Lipper, *supra* note 17, at 70 n.25, n.31.

253. Lipper, *supra* note 17, at 22.

254. Yue Zhao, et al., *Protection of Prior and Late Developers of Transboundary Water Resources in International Treaty Practices: A Review of 416 International Water Agreements*, INT'L ENV'T AGREEMENTS: POLS., L. & ECON. 201, 221 (2021).

that apportioned the Rio Grande, and it even proceeded to sue those citizens that diverted its waters.[255] Another example is the Indus Waters Treaty between India and Pakistan.[256] Notwithstanding India's apparent embrace of the Harmon doctrine in its dispute with Pakistan over the Indus River,[257] the treaty includes provisions for the sharing of transboundary waters rather than an assertion of absolute territorial sovereignty.[258] Therefore, "to the extent that treaties reflect state practice, it is clear that . . . the limited sovereignty of coriparian states over the waters of international rivers [is] the applicable rule."[259]

The ubiquity of water compacts between American states and international water treaties between nation states belies the suggestion that those states invoking Harmonian claims desire to reintroduce the Harmon doctrine into American or international water law. Rather, "[i]t is necessary to distinguish between what states say and what they do"[260] in this context. For instance, in diplomatic exchanges concerning transboundary water disputes,

> states still make extreme claims for the legality of their freedom to act as they please, and [] states opposing these claims themselves make extreme claims for rules restricting freedom of action. But it is equally true that states have not behaved in accordance with the principles they profess and have eventually settled their differences on some moderate basis.[261]

Why, then, do some states continue to raise Harmonian claims before domestic and international courts if they are motivated neither by the understanding that the Harmon doctrine is part of American or international

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255. Convention concerning the Equitable Distribution of the Waters of the Rio Grande for Irrigation Purposes arts. 1, 2, U.S.-Mex., May 21, 1906, 34 Stat. 2953. *See also* McCaffrey, *supra* note 15, at 1005.

256. The Indus Waters Treaty 1960, India-Pak., Sept. 19, 1960, 419 U.N.T.S. 126.

257. NADEEM SHAFIQ MALIK, THE INDUS WATERS TREATY, 1960: TEXT AND ANALYSIS 12 (2015) (in negotiations with Pakistan, India advanced the principle that "the upper riparian had absolute right to the water."). *See also* P. K. Menon, *Water Resources Development of International Rivers With Special Reference to the Developing World*, 9 INT'L L. 441, 446 (1975).

258. The Indus Waters Treaty 1960, India-Pak., arts. II, III, Sept. 19, 1960, 419 U.N.T.S. 126, allocating the use of the "Eastern Rivers" of the Indus basin to India and of the "Western Rivers" to Pakistan. It should be noted, however, that the treaty "attempted expressly to negate any precedential value it might otherwise have." Lipper, *supra* note 17, at 35.

259. Lipper, *supra* note 17, at 35.

260. MCCAFFREY, *supra* note 3, at 115-16 (quoting WILLIAM L. GRIFFIN, LEGAL ASPECTS OF THE USE OF SYSTEMS OF INTERNATIONAL WATERS, S. DOC. NO. 85-118, at 9 (1958)).

261. Bourne, *supra* note 19, at 207. *See also* Stephen C. McCaffrey & Kate J. Neville, *The Politics of Sharing Water: International Law, Sovereignty, and Transboundary Rivers and Aquifers*, *in* THE POLITICS OF WATER: A SURVEY 18, 21 (Kai Wegerich & Jeroen Warner eds., 2010) ("official positions of countries and their actual functional arrangements for water-sharing are not always aligned.").

water law nor by the desire to make it part of this law? Two additional, non-legal reasons may be suggested.[262]

A. Political goals

In the context of interstate disputes over scarce water resources, sovereignty-based Harmonian arguments may serve political—rather than legal—purposes.[263] Beyond states' basic need and desire for water, transboundary water disputes, especially at the international level, are frequently linked to other strategically important issues such as territory, foreign policy and oil,[264] or economic development and political autonomy.[265] Such "issue linkages" mean that water disputes are unlikely to be viewed by states as purely a matter of law, nor will their resolution be approached in isolation.[266] Therefore, a legal solution to a transboundary water dispute that is imposed by a court may have negative "externalities" that affect other interests of the state parties.[267] Moreover, the legal resolution of a water dispute, whether between American or nation states, may also result in unintended consequences impacting unrelated water issues or even creating new water problems. For instance, reducing the use of a particular watercourse may have "surprising negative externalities . . . since water previously 'wasted' does in some cases support habitat or downstream water users."[268] Therefore, invoking Harmonian sovereignty arguments in transboundary water disputes submitted to judicial resolution may reflect states' attempt to protect other water-related interests as well as

262. Each of these suggested reasons can easily be the subject of an independent article. The following discussion is merely intended to introduce them.

263. Stephen C. McCaffrey, *Of Paradoxes, Precedents, and Progeny: The Trail Smelter Arbitration 65 Years Later*, *in* TRANSBOUNDARY HARM IN INTERNATIONAL LAW: LESSONS FROM THE TRAIL SMELTER ARBITRATION 41-42 (Rebecca M. Bratspies & Russell A. Miller eds., 2006) (distinguishing between "sovereignty" arguments that are political in nature and "no-environmental damage" arguments that are judicial in nature).

264. Serdar Güner, *Signalling in the Turkish-Syrian Water Conflict*, 16 CONFLICT MGMT. & PEACE SCI. 185, 185-86 (1998).

265. McCaffrey & Neville, *supra* note 261, at 23.

266. Hussam Hussein & Mattia Grandi, *Dynamic political contexts and power asymmetries: the cases of the Blue Nile and the Yarmouk Rivers*, 17 INT'L ENV'T AGREEMENTS 795, 796 (2017).

267. An "externality" is "a cost or benefit that the voluntary actions of one or more people imposes or confers on a third party or parties without their consent." ROBERT COOTER & THOMAS ULEN, LAW & ECONOMICS 45 (5th ed. 1988). A negative externality "results when the activity of one person . . . imposes a cost on someone else." William B. Rubenstein, *Why Enable Litigation: A Positive Externalities Theory of the Small Claims Class Action*, 74 UMKC L. REV. 709, 710 (2006) (quoting JEFFREY L. HARRISON, LAW AND ECONOMICS IN A NUTSHELL 42 (2d ed. 2000)). I use the term "externalities" in this context to refer to *intrastate* negative effects of a particular legal solution to an interstate water dispute imposed by a third party such as a court. The negative impact would be "internal" to the state parties but "external" to the dispute resolution process or the court.

268. Carolyn Brickey et al., *How to Take Climate Change Into Account: A Guidance Document for Judges Adjudicating Water Disputes*, 40 ENV'T L. REP. 1215, 1221 (2010).

other "traditional national interests"[269] from the potential ripple effects of an externally imposed water concession.

Another possible political purpose for invoking Harmonian claims in the adjudication of transboundary water disputes may be for states to demonstrate to their home constituencies that "no stone has been left unturned" in litigating a water dispute and thereby "deflect public disapproval in case the ultimate judgment is not in one's favour."[270] In other words, states' choice of rhetoric may reflect "pretexts" that are "aimed at domestic constituents."[271] Such domestic audiences may not be as concerned with the legal principles governing their state's water dispute as they are with justice and fairness, which are in turn informed by the cultural, economic, and historical significance of the disputed water resource.[272] A domestic audience might be "unaware of the concession or be unable to evaluate the significance of the concession" actually made by the government, which is inconsistent with the government's rhetoric, while "the leader achieves foreign policy goals that are inconsistent with the interests of the audience he or she fears offending."[273] Another potential target audience for Harmonian claims is the other state party to the water dispute. Indeed, Harmonian rhetoric may serve as a "cheap signal" to other states.[274] It generally does not "cost" anything for a state, whether in a federal country or in the international system, to advance Harmonian claims (in fact, as the next section explains, it might be more costly for a state *not* to advance such claims). But a state that does not send this "weak signal"[275] may risk creating the impression that the freshwater resource is not important to it. Therefore, some Harmonian arguments raised in judicial proceedings may be directed at domestic audiences or counterparty states, rather than intended to persuade the court of their legal merits.

Finally, in both domestic and international judicial proceedings, Harmonian claims may simply serve as a "tool[] of advocacy" or a litigation

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269. John E. Carroll, *Water Resources Management as an Issue in Environmental Diplomacy*, 26 NAT. RES. J. 207, 214 (1986).

270. Freya Baetens, *Abuse of Process and Abuse of Rights Before the ICJ: Ever More Popular, Ever Less Successful?*, EJIL:TALK! (Oct. 15, 2019), https://www.ejiltalk.org/abuse-of-process-and-abuse-of-rights-before-the-icj-ever-more-popular-ever-less-successful/.

271. JACK L. GOLDSMITH & ERIC A. POSNER, THE LIMITS OF INTERNATIONAL LAW 170 (2005) (discussing this phenomenon in the context of states employing moral rhetoric to disguise their desire for power); Kenneth A. Schultz, *Domestic Opposition and Signaling in International Crises*, 92 AM. POL. SCI. REV. 829 (1998) (discussing the impact of domestic electorates on international crises).

272. P. B. Anand, *Capability, Sustainability, and Collective Action: An Examination of a River Water Dispute*, 8 J. HUM. DEV. 109, 110 (2007).

273. GOLDSMITH & POSNER, *supra* note 271, at 178.

274. GOLDSMITH & POSNER, *supra* note 271, at 174; James D. Fearon, *Domestic Political Audiences and the Escalation of International Disputes*, 88 AM. POL. SCI. REV. 577, 579 (1994).

275. *See e.g.*, Tae Jung Park, *"Cheap Talk" in International Trade Law*, 21 CHINESE J. INT'L L. 137 (2022); *see also* Jason Scott Johnston, *Communication and Courtship: Cheap Talk Economics and the Law of Contract Formation*, 85 VA. L. REV. 385 (1999).

strategy.[276] For instance, states might raise sovereignty claims before a court because if they do not do so, such claims would be considered as forfeited and outside the court's jurisdiction. For instance, the Supreme Court is guided by the principles that "'[o]nly the questions set forth in the petition [for certiorari], or fairly included therein, will be considered by the Court,'" that "a brief on the merits should not 'raise additional questions or change the substance of the questions already presented' in the petition," and that "'[o]rdinarily, this Court does not decide questions not raised or resolved in the lower court[s].'"[277] Internationally, the ICJ and other tribunals typically adhere to the principle of *non ultra petita partium*, which prohibits a court from deciding "beyond the pleadings of the parties."[278] The ICJ has indeed "adhered strictly"[279] to this rule in the *Case Concerning the Arrest Warrant*.[280] Therefore, states may prefer to err on the side of including Harmonian claims in their submissions on the off chance that a court might be inclined to accept them.[281] Ultimately, states' motivation for raising claims that are unlikely to succeed on their merits "probably lies more in the parties' factual and strategic decision-making than in rigorous legal reasoning."[282]

B. Collective action challenges

In addition to these political reasons for states to invoke the Harmon doctrine, there are also the challenges of collective action in the transboundary water context. "Collective action" occurs "when the efforts of two or more individuals are needed to achieve an outcome."[283] One challenge resulting from the need for collective action in relation to shared

276. MCCAFFREY, *supra* note 3, at 118.

277. Taylor v. Freeland & Kronz, 503 U.S. 638, 645-46 (1992) (quoting Yee v. Escondido, 503 U.S. 519, 595 (1992) and Youakim v. Miller, 425 U.S. 231, 234 (1976)).

278. *Non ultra petita partium*, BLACK'S LAW DICTIONARY (11th ed. 2019).

279. Neil Boister, *The ICJ in the Belgian Arrest Warrant Case: Arresting the Development of International Criminal Law*, 7 J. CONFLICT & SEC. L. 293, 304 (2002).

280. Case Concerning the Arrest Warrant of 11 April 2000 (Dem. Rep. Congo v. Belg.), Judgment, 2002 I.C.J. No. 121, ¶ 43 (Feb. 14) ("The Court would recall the well-established principle that 'it is the duty of the Court not only to reply to the questions as stated in the final submissions of the parties, but also to abstain from deciding points not included in those submissions' (*Asylum, Judgment. I.C.J. Reports 1950*, p. 402).") However, the Court also noted that "[w]hile the Court is thus not entitled to decide upon questions not asked of it, the *non ultra petita* rule nonetheless cannot preclude the Court from addressing certain legal points in its reasoning." *Id.* Moreover, the ICJ may raise issues *ex officio* where it considers them "as preliminary steps to the *dispositive*" (emphasis original) and may "override the *non ultra petita* principle to properly fulfil the 'public' aspect of its judicial function." SERENA FORLATI, THE INTERNATIONAL COURT OF JUSTICE 165 (2014).

281. McCaffrey & Neville, *supra* note 261, at 23 ("the Harmon Doctrine has been described as advocacy rather than as a judicial assessment of the law.").

282. Freya Baetens, *Abuse of Process and Abuse of Rights Before the ICJ: Ever More Popular, Ever Less Successful?*, EJIL:TALK! (Oct. 15, 2019), https://www.ejiltalk.org/abuse-of-process-and-abuse-of-rights-before-the-icj-ever-more-popular-ever-less-successful/ (discussing states' frequent invocation of abuse of process/rights claims before the ICJ notwithstanding that such claims typically fail).

283. TODD SANDLER, GLOBAL COLLECTIVE ACTION 17 (2010).

resources is that "individual rationality is not sufficient for collective rationality."[284] In other words, "[i]ndividual rationality requires the maximization of an individual's well-being subject to a . . . resource constraint," which in turn produces an "inefficient collective choice."[285] By the same token, states invoking Harmonian sovereignty arguments may be viewed as individual actors unmotivated "to coordinate their activities to improve their collective well-being."[286] Particularly in the context of adversarial judicial proceedings, states may instead act as "rational self-interested actors [who] will not act to achieve their common interests, even when optimal results and the appropriate means of attaining them are agreed upon."[287] Therefore, states may invoke territorial sovereignty because it represents their rational self-interest in maximizing their use of shared water resources even though this is unlikely to achieve the common interest of water cooperation and preservation.[288]

One way to understand states' invocation of Harmonian claims as a collective action problem is through the Prisoners' Dilemma model.[289] For present purposes, the Prisoners' Dilemma is a game involving two players who can make one of two choices: to contribute to a public good and incur a cost, or not to contribute and incur no cost. If neither player contributes, neither one will incur a cost. However, neither player will enjoy the benefit of the public good. If only one of the players contributes to the public good and incurs the cost, it risks the other player failing to contribute and simply "free riding" on the good.[290] If both players contribute to the public good and incur the cost, they would both be individually and collectively better off. The judicial process for the resolution of transboundary water disputes fits the Prisoners' Dilemma model because it presents a "non-cooperative

284. *Id.* at 18.

285. *Id.* at 18–19.

286. *Id.* at 19. On the potential limitations of treating states as individuals, see Eyal Benvenisti, *Collective Action in the Utilization of Shared Freshwater: The Challenges of International Water Resources Law*, 90 AM. J. INT'L L. 384, 392–94 (1996).

287. Moshe Hirsch, *Game Theory, International Law, and Future Environmental Cooperation in the Middle East*, 27 DENV. J. INT'L L. & POL'Y 75, 77 (1998) (citing MANCUR OLSON, THE LOGIC OF COLLECTIVE ACTION: PUBLIC GOODS AND THE THEORY OF GROUPS 34–36 (1965)).

288. Erica J. Thorson, *Sharing Himalayan Glacial Meltwater: The Role of Territorial Sovereignty*, 19 DUKE J. COMP. & INT'L L. 487, 496 (2009) (noting that absolute territorial sovereignty "is a powerful negotiating position, and it holds powerful political sway in international fora."); Aaron T. Wolf, *International Water Conflict Resolution: Lessons from Comparative Analysis*, 13 INT'L J. WATER RES. DEV. 333, 337 (1997) (noting that, in the negotiation context, absolute sovereignty "is often initially claimed by an upstream riparian."); Joseph W. Dellapenna, *The Customary International Law of Transboundary Fresh Waters*, 1 INT'L. J. GLOB. ENVT'L. ISSUES 264, 269 (2001) (noting that "[t]he uppermost riparian state always initially claims 'absolute territorial sovereignty'" in negotiations).

289. *See* SANDLER, *supra* note 283, at 20–22; Hirsch, *supra* note 287, at 84–85.

290. Elinor Ostrom, *Analyzing Collective Action*, 41 (S1) AGRIC. ECON. 155, 158 (2010).

game" in which "players act independently to pick strategies that appear to be best for them."[291]

Below are two Prisoners' Dilemma models, reflecting possible legal strategies of two state parties to judicial proceedings in a transboundary water dispute. The two models differ in the value placed by each state on retaining sovereignty over the disputed water resource. In Model I, both states value sovereignty more than cooperation, while in Model II, State A values sovereignty more than cooperation and State B values cooperation more than sovereignty. In both models, "HD" represents a state's invocation of the Harmon doctrine, whether to assert complete control over a shared watercourse or that portion of it that runs through its territory, or to prevent the other state from using it in its own territory. "EA/LTS" represents a state's invocation of equitable apportionment, if the dispute is between two American states before the Supreme Court, or limited territorial sovereignty, if the dispute is between two nation states before an international court or tribunal. The first value in each cell is attributed to the row state (State A) and the second value is attributed to the column state (State B).

Model I

		STATE B	
		HD	EA/LTS
STATE A	HD	0, 0	7, -2
	EA/LTS	-2, 7	5, 5

In this model, the public good or benefit of invoking equitable apportionment/limited territorial sovereignty—water cooperation and/or receiving an equitable share of the water—is valued at 7 for both states. The individual cost of invoking equitable apportionment/limited territorial sovereignty—the loss of sovereignty—is valued at 9 for both states. This allocation of values reflects the assumption in this Model that states invoking the Harmon doctrine value sovereignty over the shared water resource more than cooperation.

291. SANDLER, *supra* note 283, at 20. According to some scholars, the models presented in this article are examples of an "assurance game" rather than a "Prisoner's Dilemma game," because communication between the players (the disputing states) is not institutionally obstructed as in the traditional Prisoner's Dilemma game and cooperative solutions remain possible. *See* Daniel H. Cole & Peter Z. Grossman, *Institutions matter! Why the Herder Problem is not a Prisoner's Dilemma*, 69 THEORY & DECISION 219 (2010). Regardless of the label, however, these models show why some states may be incentivized to invoke the Harmon doctrine in transboundary freshwater disputes even though they would benefit more from invoking a cooperative water law doctrine (i.e., equitable apportionment under U.S. water law and limited territorial sovereignty under international water law).

If both states invoke the Harmon doctrine (and the court accepts both arguments), neither would contribute to the public benefit of water cooperation or receive an equitable share of the water but both would avoid the cost of losing sovereignty.[292] Therefore, each state is attributed "0" in the upper left cell of the matrix.

The upper right cell of the matrix represents a situation where State B argues equitable apportionment/limited territorial sovereignty. If accepted by the court (i.e., if the court restricts State B's sovereignty over the shared watercourse), State B would receive the benefit of an equitable share of the water (7) but will also incur its cost—loss of sovereignty (9). Therefore, the net payoff for State B would be -2 (which would make it worse off than if it had invoked the Harmon doctrine). If in the same judicial proceeding State A invokes the Harmon doctrine and this is accepted by the court,[293] State A would benefit from the limits placed on State B without incurring the cost of reducing its own sovereignty over the watercourse, thereby "free riding."[294] Therefore, the payoff for State A would be 7. These payoffs would be reversed (the lower left cell of the matrix) if State B free rides (by invoking the Harmon doctrine) on State A's concession (adhering to equitable apportionment/limited territorial sovereignty).

Finally, the lower right cell of the matrix represents a situation where both states invoke equitable apportionment/limited territorial sovereignty. Each state would then obtain the public benefit of mutual cooperation and receiving their respective equitable shares of the water (7 x 2) while incurring the individual cost of losing sovereignty (9). Each state would therefore obtain a net payoff of 5 (=7 x 2 – 9) and be better off than it would have been had both states invoked the Harmon doctrine.[295] Nevertheless, both states will invoke the Harmon doctrine in this Model, because this is the "dominant strategy" for both[296] as well as the Nash equilibrium.[297]

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292. However, in terms of the water resource at issue this outcome might lead to a "tragedy of the commons," in which each state "receives direct benefits from its unilateral act, while the costs of the act are shared by all." Benvenisti, *supra* note 286, at 388. This is because each state will be allowed to use the shared water resource as it pleases, and the negative consequences of such use will be borne by both states.

293. Of course, the court might also reject State A's Harmonian argument and restrict its sovereignty by applying equitable apportionment or limited territorial sovereignty to both states. Even so, these doctrines are guided by *equity* rather than *equality*. Therefore, State B might be ordered by the court to make greater concessions than State A.

294. Shared watercourses may be considered "common-pool resources," which face the same problems as "public good provisions," including the problem of "free riding." Ostrom, *supra* note 290, at 158; Benvenisti, *supra* note 286, at 388.

295. Each state would also be better off than it would have been had it invoked the equitable apportionment/limited territorial sovereignty while the other state invoked the Harmon doctrine.

296. Such a strategy "provides a greater payoff regardless of the other player's action." SANDLER, *supra* note 283, at 21.

297. This is the position from which "*neither player would unilaterally alter his or her strategy* if given the opportunity." *Id.* at 22 (emphasis original).

Model II

		STATE B	
		HD	EA/LTS
STATE A	HD	0, 0	7, 2
	EA/LTS	-2, 7	5, 9

In this model, the public good or benefit of invoking equitable apportionment/limited territorial sovereignty—water cooperation and/or receiving an equitable share of the water—is also valued at 7 for both states. The individual cost of invoking equitable apportionment/limited territorial sovereignty—the loss of sovereignty—is valued at 9 for State A and at 5 for State B. This allocation of values reflects the common situation where two states sharing a water resource have different preferences—one values cooperation more than sovereignty and the other values sovereignty more than cooperation.

As in Model I, if both states invoke the Harmon doctrine (and the court accepts both arguments), neither would contribute to the public benefit of water cooperation or receive an equitable share of the water but both would avoid the cost of losing sovereignty. Therefore, each state is attributed "0" in the upper left cell of the matrix.

The upper right cell of the matrix represents a situation where State B argues equitable apportionment/limited territorial sovereignty. If accepted by the court, State B would receive the benefit of an equitable share of the water (7) but will also incur its cost—loss of sovereignty (5). Therefore, the net payoff for State B would be 2 (which would make it better off than if it had invoked the Harmon doctrine). If in the same judicial proceeding State A invokes the Harmon doctrine and this is accepted by the court, State A would benefit from the water cooperation resulting from the limits placed on State B without incurring the cost of reducing its own sovereignty over the watercourse, thereby "free riding." Therefore, the payoff for State A would be 7.

The lower right cell of the matrix represents a situation where both states invoke equitable apportionment/limited territorial sovereignty. Each state would then obtain the benefit of mutual cooperation and receive its respective equitable share of the water (7 x 2). The cost in loss of sovereignty to State A would be 9, while the cost in loss of sovereignty to State B would be 5. State A would therefore obtain a net payoff of 5 (=7 x 2 – 9), while State B would obtain a net benefit of 9 (=7 x 2 – 5).

The lower left cell of the matrix represents a situation where State B invokes the Harmon doctrine and State A invokes equitable apportionment/limited territorial sovereignty. State B would then benefit from the limits placed on State A (7) without incurring the cost of losing its own sovereignty. State A would benefit from receiving an equitable share of the water (7) but would lose sovereignty (which it values at 9). Therefore, the net payoff for State A would be -2.

In Model II, State A's dominant strategy remains invoking the Harmon doctrine, while State B's dominant strategy is invoking equitable apportionment/limited territorial sovereignty. This differs from the parties' dominant strategy in Model I (in which both would invoke the Harmon doctrine), because in Model II State B values cooperation more than sovereignty. The Nash equilibrium in Model II is the upper right cell of the matrix (7, 2). This means that the two states will not fully cooperate, because while State B would gain from such cooperation (9 > 2) State A would lose (5 < 7).[298]

As these Prisoners' Dilemma models illustrate, when operating individually and in an uncoordinated manner (as states inevitably do in adversarial judicial proceedings), state parties to a transboundary water dispute may not cooperate even where it would be in their best interest. Where both states value sovereignty more than cooperation (Model I), they will have an incentive as *individual* players to invoke the Harmon doctrine even though "both players could be made better off if they *both* changed their strategy"[299] and invoked equitable apportionment/limited territorial sovereignty (5 > 0). Even if State B values cooperation more than sovereignty and invokes equitable apportionment/limited territorial sovereignty, the parties will still end up not fully cooperating because State A would continue to invoke the Harmon doctrine (7 > 5).[300]

Whatever may motivate states to claim absolute sovereignty over a transboundary and transitory natural resource over which there can be no absolute sovereignty, such claims ultimately "afford little assistance in the

298. One way to get around this would be by way of Coasean bargaining. State B could give something valued at 2 or higher to State A to incentivize it to fully cooperate. However, this assumes that the parties are negotiating rather than participating in adversarial judicial proceedings. Another possible purpose for invoking the Harmon doctrine in the judicial resolution of transboundary freshwater disputes may be to provide the court with information that it lacks regarding the states' preferences. On the potential role of the Coase Theorem in the resolution of transboundary water disputes and the importance of information exchange, see Tamar Meshel & Moin A. Yahya, *International Water Law and Fresh Water Dispute Resolution: A Coasean Perspective*, 92 U. COLO. L. REV. 509 (2021).

299. SANDLER, *supra* note 283, at 22.

300. Both models show a "pure" Nash equilibrium, where each party has one dominant strategy 100% of the time. In reality, it may be that a state invokes the Harmon doctrine in some disputes but not in others, resulting in a "mixed" strategy or Nash equilibrium. *See* SANDLER, *supra* note 283, at 22 n.5. However, for the purpose of challenging the conventional wisdom that the Harmon doctrine is "dead," any non-zero probability outcome in these models should suffice.

resolution of concrete controversies."[301] Rather, Harmonian arguments serve to further entrench sovereignty-oriented thinking that risks overshadowing domestic and global water cooperation efforts and that may eventually frustrate cooperative legal developments.[302] Therefore, the continued invocation of the Harmon doctrine or Harmonian arguments in relation to transboundary watercourses, even if merely for political or strategic reasons that ultimately fail on their legal merits, is not costless from a legal standpoint. It may provide the "scaffolding"[303] or building blocks necessary for the entrenchment, or further development, of sovereignty-based legal principles in American and international water law. Moreover, invoking Harmonian arguments in transboundary water disputes risks legitimizing arguments based on absolute territorial sovereignty also in other transboundary environmental contexts such as climate change and air pollution. At the international level, for instance, states have been criticized for approaching the problem of international hazardous waste transport from a perspective of sovereignty rather than environmental protection.[304] Harmonian claims can even be detected in states' foreign policy more generally. President Donald Trump's America First policy, for instance, has been compared to the Harmon doctrine.[305]

CONCLUSION

The Harmon doctrine has been called "a curious, though potentially dangerous, relic of history."[306] While the Harmon doctrine is frequently spoken of in terms of mere historical or academic relevance, "the notion of sovereignty over shared water resources is powerful and seductive . . . and does not die easily."[307] Indeed, contrary to popular opinion, the Harmon doctrine, or at least its sovereignty-based foundation, remains alive and well. Like all sovereignty-based arguments, the Harmon doctrine may appear on the surface to serve national interests. But a deeper examination of transboundary water relations inevitably leads to the conclusion that

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301. MCCAFFREY, *supra* note 3, at 118.

302. McCaffrey & Neville, *supra* note 261, at 19 (arguing that "strong assertions of [the] primacy [of sovereignty] as a principle of law in this field in fact tend to engender disputes over international waters and hinder their resolution.").

303. *Id.* at 23.

304. Austen L. Parrish, *Sovereignty's Continuing Importance: Traces of* Trail Smelter *in the International Law Governing Hazardous Waste Transport*, *in* TRANSBOUNDARY HARM IN INTERNATIONAL LAW: LESSONS FROM THE TRAIL SMELTER ARBITRATION 181, 193 (Rebecca M. Bratspies & Russell A. Miller eds., 2006).

305. Paul Stanton Kibel & Gabriel Eckstein, *America First and the Harmon Doctrine's Demise–A History Lesson*, NEWJURIST (Mar. 1, 2017), https://newjurist.com/america-first-and-the-harmon-doctrines-demise-a-history-lesson.html.

306. McCaffrey & Neville, *supra* note 261, at 34.

307. McCaffrey & Neville, *supra* note 261, at 34.

"anything which detracts from a spirit of collaboration and sharing, joint partaking of resource values and benefits, and joint absorption of costs, ultimately damages and denies opportunities to both parties."[308] And yet, as this Article has illustrated, some American and nation states continue to advance Harmonian claims in transboundary water disputes submitted to judicial resolution. They may do so in an attempt to exercise complete control over that portion of an interstate watercourse that flows in their territory or to prevent another state from exercising control over its portion of an interstate watercourse.

It is important to understand why American and nation states continue to resort to Harmon-like sovereignty arguments in transboundary water disputes. The Harmon doctrine has had a dubious legal status from its very inception,[309] current American and international water law expressly reject it, and cooperative water arrangements between American states as well as nation states abound. As this Article has suggested, it is therefore unlikely that states raise Harmonian arguments because they believe that the Harmon doctrine is, or should be, part of the law applicable to transboundary water disputes. It is more likely that states raise sovereignty arguments for political purposes or for strategic reasons, namely to overcome collective action challenges in the judicial resolution of such disputes. Nonetheless, advancing Harmonian claims, even if for non-legal reasons, legitimizes them and may be equally damaging to American and international water law. Such claims should therefore be rejected not only by adjudicators but also by states. Given the threats of climate change and water scarcity both within and outside the United States, it is high time that the Harmon doctrine be, at last, "laid to a richly-deserved rest."[310]

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308. Carroll, *supra* note 269, at 214.

309. Lipper, *supra* note 17, at 22 (viewing Harmon's opinion as merely reflecting the undeveloped state of international water law in 1895).

310. McCaffrey, *supra* note 15, at 1007.