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Fiat or Custom: The Checkered Development of International Water Law

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ABSTRACT

Watercourses are a vitally important sub-system of the hydrologic cycle. Their significance for transportation and agriculture was recognized far back in human history and led to the early assertion of authority by riparian states over the stretches of international watercourses that flowed through their territories. This, in turn, led to conflicts and delayed the emergence of a customary law of cooperation, including the principle that the river basin should be treated as a unity in law. If accepted, that principle would reflect the physical unity of the basin, linking its waters with other components of the hydrologic cycle.

“All the rivers run into the sea: yet the sea is not full.” This precept of ancient wisdom emphasizes the role of inland surface water as one of the principal flows in the hydrologic cycle, determining where and how and to what extent human activities on land can be supported. Inside the natural boundary of each watershed, surface waters form an organic whole draining toward a single outlet, such as a river or lake basin. Each basin is an interdependent system capable of transmitting within itself any disturbance caused by changes affecting water and water use. The distribution of drainage through a single outlet constitutes an areal unity; the behavior of the water a functional unity.

Realization of this interdependence came slowly—too slowly to influence acceptance of the legal unity of the international river basin, translated into principles and rules governing cooperation among co-basin states in their navigational and non-navigational uses of water. The process might have been speeded up if customary law had been allowed to develop. By now not only would the perception of unity of all waters within the river basin have been generally accepted, but also the appropriate legal principles. However, very early in history, states asserted power over all waters within their borders and guarded that power jealously.

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2. For a discussion of the role of the river basin and of inland surface waters in the hydrologic cycle, see generally L. Teclaff, The River Basin in History and Law ch. II (1967).
delaying the general acceptance of the legal unity of international river basins. To illustrate that thesis, this article will examine first the development of the principle of freedom of navigation on selected rivers (an attempt to express the physical interdependence of a river system through commercial unity), and then the interplay of municipal and international law regulating non-navigational uses of water.

**FREEDOM OF NAVIGATION**

Records indicate that boats sailed as early as the fifth millennium B.C. on the Mesopotamian rivers Tigris and Euphrates and in the fourth millennium on Egypt’s Nile River. From that time onward throughout antiquity, these rivers were heavily used as thoroughfares of waterborne commerce, but there was no freedom of trade or navigation for foreign vessels. In Egypt, the pharaohs monopolized the Nile trade and kept foreign boats from sailing downstream beyond the Second Cataract. In Mesopotamia, foreign boats were allowed to come as long as they enjoyed the protection of the rulers. Navigation and trade were privileges granted or withheld, depending on reciprocity and mutual benefit, but explicit or implied permission must have been obtained.

In Western Europe before the advent of the Romans, the situation was similar; navigation and commerce on the rivers of Gaul, Italy, and Spain, though extensive, was controlled by riparian tribes and cities. Rome opened up the navigation of these rivers to the public, but retained control of the commercial aspect of river traffic. The comparative freedom of navigation obtained, however, only on those rivers or stretches of rivers flowing within the borders of the Roman Empire. On the Rhine and the Danube, which were boundary rivers, navigation and trade were as strictly controlled as in Egypt under the pharaohs.

3. See Barton, The Royal Inscriptions of Sumer and Akkad 57-61 (1929); 1 Histoire Universelle des Explorations 118 (Nougier ed. 1956); G. Contenau, Everyday Life in Babylon and Assyria 45 (1954); J. Hawkes & L. Woolley, Prehistory and the Beginnings of Civilization 619 (1963); 1 Herodotus, The Histories 9-100 (G. Rawlinson trans. 1964); W. Fairservis, The Ancient Kingdoms of the Nile 65 (1962); A. Gardiner, Egypt of the Pharaohs 393-96 (1966); 1 J. Breasted, Ancient Records of Egypt 147 (1927).
4. 2 J. Breasted, supra note 3, at 31.
5. Sargon of Akkad (c.2340 B.C.) kept the port of his upriver capital, Agade, open to the ships of countries of the Persian Gulf. J. Hawkes & L. Woolley, supra note 3, at 607. There is evidence that merchant ships from the Indus River basin were trading in Sumer. 1 Histoire Universelle des Explorations, supra note 3, at 118-20.
7. For instance, Greek traders penetrated the Rhone and its tributaries as early as 500 B.C., and in the two succeeding centuries they extended their use of the rivers of Gaul to the Rhine and the Atlantic Ocean. See M. Cary, The Geographic Background of Greek and Roman History 251-52 (1948); L. Bonnard, La Navigation Interieure de la Gaule a l’Epoque Gallo-Romaine 29 (1913).
That control of navigation was both a prerogative of government and a source of revenue was not lost on the petty local rulers who emerged after the fall of the Roman empire in the West. By the late Middle Ages, local magnates operated dozens of toll stations on each of the major rivers. The cities at first resisted this encroachment on freedom of navigation but, as their own power and independence grew, they themselves became major offenders. On rivers such as the Rhine, Oder and Vistula, municipalities not merely enforced their stoppage privileges strictly but, by agreements (which anticipated later treaties between states), allocated among themselves stretches of these rivers on which particular cities were to exercise the exclusive control of navigation. In the 17th century, however, with the rise of nation states, the cities began to lose control of the rivers and inter-city agreements were replaced by inter-state treaties.

Until the end of the 18th century, the freedom of navigation granted in these treaties relied on the will of the contracting parties, most of which were anyway riparian to the waterways in question, and was limited to their citizens or subjects. In 1792, however, at the height of the French Revolution, the French Executive Council pronounced that impediments to navigation on the Scheldt and Moselle rivers were contrary to the principle of natural law, and that the watercourse of a navigable river was the common and inalienable property of all its riparian states. Freedom of navigation, the Council claimed, extended to all riparians on the entire stretch of a navigable river and was based on natural law. That same year, President Jefferson also referred to natural law in negotiations with Spain concerning navigation on the Mississippi. He declared it to be a universally acknowledged natural right that a navigable river should be open to all its inhabitants.

10. E. Engelhardt, supra note 8, at 20.
11. C. Day, A History of Commerce 58 (1938); J. Dollfus, supra note 9, at 104.
12. 6 Cambridge Medieval History 113-14, 129 (1957).
13. Merchants passing through a city which exercised the stoppage privilege were forced either to sell all their merchandise or to offer it for sale for a period of time. E. Engelhardt, supra note 8, at 32-35.
14. For a discussion of the division of exclusive rights to Rhine navigation among the cities of Basel, Strasbourg, and Mainz, see J. Dollfus, supra note 9, at 83, and E. Engelhardt, supra note 8, at 20.
15. One of the earliest of these treaties was the Turkey-Austria Treaty of Vienna, May 1, 1616, articles 9 and 10, which dealt with Danube navigation. 9 Testa, Recueil des Traites de la Porte Ottomane 26-27; 1 Fauchille, Traite de Droit International Public, pt. 2, § 528, p. 533 (8eme ed., 1925).
17. The claim that there was a natural right of innocent passage through navigable rivers did find support in the writings of Grotius and Vattel. H. Grotius, De Jure Belli ac Pacis, bk. II, § 2, No. 11 (1625); E. De Vattel, Le Droit des Gens, bk. II, § 127 (1758). Generally, however, doctrine was divided over identifying the principles on which the right to navigate was based. Freedom of the sea, international servitudes, right of trade (ius commercium), and community of interests of the riparians were all put forward as the basis of that right. For a convenient summary of these views, see G. Kaeckenbeeck, supra note 16, at 18-24; S. Wajda, Magistrala Wodna 50-55 (1982).
18. 1 Moore, Digest of International Law, § 130 at 624 (1906).
similarly supported the United States claim, in 1826, to navigation on the St. Lawrence by reference to the law of nature.\textsuperscript{19} These claims on the part of the United States were used merely as arguments in negotiation and had little effect on the general regime of United States border rivers, which was based on agreements expressing the will of the parties.\textsuperscript{20} However, the principle expounded by the French Executive Council did influence the 1804 Convention of Paris between the French and German empires,\textsuperscript{21} which stipulated that the Rhine should always be considered common to both empires and that its navigation was to be regulated by agreement between the two parties.\textsuperscript{22}

The Rhine

Freedom of navigation on the Rhine for all flags had to wait until after the defeat of Napoleon. In the Peace Treaty of Paris of 1814,\textsuperscript{23} the victorious allies stipulated that navigation on the Rhine to and from the sea should not be prohibited to anyone, and that a future conference would examine how this principle could be extended to other rivers which, in their navigable courses, crossed or separated different states.\textsuperscript{24} The propagation of a more extended freedom of navigation was undoubtedly due to the influence of those allies who were not riparian on the Rhine, especially England, the chief champion of free trade.

When the Congress of Vienna convened in 1815, the problem of navigation again figured prominently in debates between the proponents of riparian control of navigation (chiefly Prussia and Austria) and the proponents of freedom of navigation for all flags (England, supported by defeated France).\textsuperscript{25} The English delegate proposed a brief, clearly worded provision that: "The Rhine from the point where it becomes navigable to the sea, and vice-versa, shall be entirely free to the commerce and navigation of all nations."\textsuperscript{26} Baron von Humboldt, the Prussian representative, proposed a much longer and more ambiguous version:

The navigation of the Rhine along its whole course, from the point where it becomes navigable to the sea, either in descending or ascending, shall be entirely free, and shall not in respect of commerce, be prohibited to anyone; due regard, however, being had to the

\textsuperscript{19} Id. § 131, at 631-33.
\textsuperscript{20} See generally, Teclaff, United States River Treaties, 31 Fordham L. Rev. 697 (1963).
\textsuperscript{21} Convention de l'octroi du Rhin, Aug. 15, 1804, 8 Martens, Recueil des principaux traités, 2e ed., 261.
\textsuperscript{22} Id. art. 2.
\textsuperscript{24} Id. art. V.
\textsuperscript{25} G. Kaeckenbeek, supra note 16, at 40-48.
\textsuperscript{26} Quoted in id. at 45.
regulation established with respect to its police, which regulation shall be alike for all and as favorable as possible to the commerce of all nations.27

Humboldt’s version was embodied in the Final Act of the Congress of Vienna28 as Article 109, which reads:

The navigation of the rivers referred to in the preceding article, along their whole course, from the point where each of them becomes navigable, to its mouth, shall be entirely free, and shall not, as far as commerce is concerned, be prohibited to anyone; due regard, however, being had to the regulation to be established with respect to its police; which regulation shall be alike for all and as favorable as possible to the commerce of all nations.29

Articles 108 to 117 of the Final Act of the Congress of Vienna only served as a model to be applied by states to navigable rivers that separate or traverse the territory of more than one state.30 Even so, the wording of Article 109 of this model lent itself, as was undoubtedly intended, to two interpretations—the broader one, that navigation on navigable rivers should be open to boats of all nations; and the narrower one that, although there should be freedom of transportation of goods of all nations, navigation itself depended on the agreement and authorization of the riparian states. The narrower interpretation was supported not only by the preparatory documents of the Final Act and by a number of influential writers,31 but also by the practice of riparian states.32

The regulations elaborated at the Congress of Vienna for the Rhine could not initially be applied because Holland claimed the right to control the mouth of that river.33 They referred to “navigation along the whole course of the Rhine from the point where it becomes navigable to the sea . . . ,”34 which, Holland contended, did not mean into the sea.35 The controversy was eventually resolved in the Convention of Mainz (May-ence) of 1831,36 whereby Holland agreed that the Leck (the mainstem of

27. Quoted in id. at 46.
28. Congress of Vienna, June 9, 1815. 2 Martens Nouveau Recueil (ser. 1), 379.
29. Id. at 427.
30. Id. at 427-29.
31. S. Wajda, supra note 17, at 35.
32. See Traite entre la Russie et la Prusse, Apr. 21/May 9, 1815, art. 22, 2 Martens Nouveau Recueil (ser. 1), 236 at 242; Traite d’amitie entre la Russie et l’Autriche, Apr. 21/May 3, 1815, art. 24, id. at 231.
33. They were, however, extended to three Rhine tributaries, the Neckar, Main, and Moselle. Regulations concerning the navigation of the Neckar, Main and Moselle, Mar. 24, 1815 (Annex No. 16C to the Vienna Congress Treaty of June 9, 1815), Martens Nouveau Recueil (ser. 2d), 447.
35. See 4 C. Rousseau, Droit International Public 518 (1980).
the Rhine) and the branch known as the Waal were to be considered as the continuation of the Rhine in the Kingdom of the Netherlands. The Convention repeated the Vienna Regulations concerning freedom of navigation, but virtually limited navigation of the Rhine to boats of the riparian states. It stated that: "Vessels belonging to subjects of the riparian States and belonging to the navigation of the Rhine shall not be obliged to transship or break bulk when passing from the Rhine to the high seas and vice-versa through the Kingdom of the Netherlands"; and that: "The licenses of navigation in question shall not be granted except to recognized subjects of the riparian States of the Rhine, and the vessels shall be mentioned in the licenses." 

Kaeckenbeeck points out that freedom of navigation on the Rhine continued to be limited by technical devices in the regulations, adopted at Mannheim in 1868, which replaced the regulations of Mainz. The Convention of Mannheim removed the ambiguity in the Final Act of the Congress of Vienna by stating that ships of all nations could transport goods and passengers. However, it limited the right to navigate a sailing vessel or a steamer to persons who could prove that they had actually navigated the Rhine for a given period, and they had to possess a boatman's license given by the government of the riparian state in which they were domiciled. Furthermore, the Convention granted the riparian states the right to pass on the fitness of boats seeking to navigate the river. The Central Commission, provided for in the regulations of the Congress of Vienna, and composed of the representatives of the riparian states, was retained.

The Treaty of Versailles continued the regime of the Mannheim Convention, but the composition of the Central Commission was enlarged to include representatives of non-riparian states (Great Britain, Italy, and Belgium). The Commission was entrusted with revising the Convention of Mannheim and took 16 years to finish the task, but before the so-

37. Id. art. 2.
38. Id. art. 1.
39. Id. art. 3.
40. Id. art. 42.
43. Id. art. 1.
44. Id. art. 15.
45. Id. art. 22.
46. The Vienna Congress Treaty, Annex 16B, supra note 34, art. 32.
49. Id. art. 355.
50. Id. art. 354.
called *modus vivendi* of May 4, 1936 could be put into effect, Germany had denounced the fluvial regime of Versailles. The Central Commission was reinstated after the Allied victory in 1945 and, except for the absence of Italy, its composition of riparians and non-riparians has been the same as that envisaged in the Treaty of Versailles.

### The Danube

The Danube was left out of the deliberations of the Congress of Vienna and was not even mentioned in the regulations for the free navigation of rivers. This omission was deliberate, to avoid antagonizing Russia, which had just become for the first time a Danube riparian, after wresting Bessarabia from Turkey and thereby acquiring the Kilia, one of the branches of the river. The Congress of Vienna regime was not introduced to the Danube until 1840, and even then it came through the "back door," by a treaty that Austria and Russia concluded in St. Petersburg. This treaty repeated the wording of Article 109 of the Final Act of the Congress of Vienna and, at the same time, made sure that navigation on the Danube was opened to all nations. (Earlier treaties had opened the Danube to navigation by riparian states only, in conformity with the policy of Turkey which, for fiscal reasons, permitted the ships of those riparians not at war with it to navigate freely on the lower Danube.) However, the freedom of navigation established by the treaty of St. Petersburg was illusory because, after becoming a Danube riparian, Russia had purposely neglected the upkeep of channels in its sector, thus obstructing the very right which it had promised formally to uphold.

Russia's expulsion from the Delta after being defeated in the Crimean

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52. See 36 Martens Nouveau Recueil (ser. 2d), 800; see also 4 C. Rousseau, *supra* note 35, at 522.
53. 4 Rousseau, *supra* note 35, at 523-25; 23 Dept. of State Bull. 957 (1945); Lupi, Freedom of Navigation on the Rhine, 85 J. Dr. Int’l 328-71 (1958). The inclusion of non-riparians on the Commission made it more difficult for the pendulum to swing away from freedom of navigation for all on the Rhine.
55. Treaty of St. Petersberg (Agreement re the Danube), July 13/25, 1840, Austria-Russia, art. 1. 90 Parry’s T.S. 297.
56. *Id.* art. 2.
57. For example, the Treaty of Vienna of 1616, *supra* note 15, arts. 9 and 10. Fauchille considered this treaty to be the earliest example of river navigation treaties. 1 Fauchille, Traite de Droit International Public, pt. 2, 467 (8th ed. 1925). For other treaties, see Costa, *supra* note 54, at 206-08.
59. G. Kaeckenbeeck, *supra* note 16, at 83-84; Costa, *supra* note 54, at 208. Russia's aim in neglecting the upkeep of the delta channels was to deflect Black Sea trade to the Russian port of Odessa.
War (1856)\textsuperscript{60} gave the victorious powers occasion to reexamine the fluvial regime of the Danube. At the Congress of Paris (convoked in 1856 for the purpose of concluding a peace treaty with Russia), the old contest over the meaning of freedom of navigation in the Final Act of the Congress of Vienna was refought.\textsuperscript{61} Austria, as before, championed the narrower interpretation favoring authorization by the riparian states. France and England wanted a larger freedom in favor of all nations. Prussia had stood together with Austria at the Congress of Vienna because it was a riparian of the Rhine, but now at Paris, having less interest in the Danube, it lukewarmly supported freedom for all flags. So did defeated Russia, and for the same reason. As a result, the Peace Treaty of Paris\textsuperscript{62} left unchanged the ambiguities in the Final Act of the Congress of Vienna.

The Paris treaty established two commissions: a supposedly temporary European Commission for the lower Danube from Galatz to the Black Sea (whose task, initially, was to clear the delta channels neglected by Russia);\textsuperscript{63} and a permanent Riparian Commission (whose task was to prepare regulations for the navigation and police of the whole navigable portion of the river).\textsuperscript{64} After dissolution of the European Commission, on which non-riparians formed a majority, the Riparian Commission was to maintain the navigation of the delta and the adjacent parts of the Black Sea.\textsuperscript{65} In 1857, the Riparian Commission produced regulations in which it tried to work out a compromise by conceding freedom of navigation for ships that plied to and from the high seas,\textsuperscript{66} and by reserving purely river navigation for the boats of the riparian states.\textsuperscript{67} The regulations were not acceptable to the non-riparian powers, but were applied by the upper riparians (Austria-Hungary, Bavaria, and Wurttemberg) to their sections of the Danube, extending from Ulm downstream to the Iron Gates (the gorge cut by the river through the Carpathian Mountains, between present-day Yugoslavia and southwestern Rumania).\textsuperscript{68} As a result of this disagreement, the European Commission's mandate was extended indefinitely and it was charged with the preparation of regulations for the lower Danube.\textsuperscript{69} These were approved, and the European Commission was transformed into an independent international organization.\textsuperscript{70} It could

\textsuperscript{60}Turkey reacquired control over the Kilia. Costa, supra note 54, at 212.
\textsuperscript{61}See Kaeckenbeeck, supra note 16, at 84-97; Costa, supra note 54, at 208-10.
\textsuperscript{62}Treaty of Paris, Mar. 30, 1856, art. 15, 114 Parry's T.S. 409.
\textsuperscript{63}Id. art. 16.
\textsuperscript{64}Id. art. 17.
\textsuperscript{65}Id. arts. 16 & 17.
\textsuperscript{66}Danube Navigation Act, Nov. 7, 1857, art. 5, 117 Parry's T.S. 471.
\textsuperscript{67}Id. art. 8.
\textsuperscript{68}G. Kaeckenbeeck, supra note 16, at 105-12; 1 Fauchille, supra note 57, pt. 2, § 528, at 543.
promulgate regulations for navigation, exercise authority over the neces-

sary works; freely hire and fire employees, and act as an appeals tribunal

from the decisions of its functionaries.71 Thus, it had legislative, exec-

utive, administrative, and judicial powers.

Russia was not to be kept away from the banks of the lower Danube

for very long. The Franco-Prussian war of 1870 provided it with an

opportunity to denounced the Paris treaty of 1856,72 but this did not yet

affect the Danube, since the London treaty of 1871 between the great

powers assured the continuation of the river's regime.73 It was by the

Treaty of San Stefano in 1878,74 after Russia's victory over Turkey, that

the political situation on the Danube changed and Russia returned to the
delta, which it shared now with a newly independent Rumania. However,
in the Treaty of Berlin (also of 1878),75 the great powers persuaded Russia
to trim its territorial gains somewhat, thereby not only confirming the
European Commission in its existing functions for the lower Danube
(Galatz to the Black Sea),76 but also expanding them to encompass the
sector from Galatz upstream to the Iron Gates. On this sector an entirely
new regime was created for which the Commission, with the assistance
of the riparian states, was to develop regulations respecting navigation,
river police, and supervision, and harmonize them with those which had
been or might be issued for the section of the river below Galatz.77

In 1881, the European Commission revised its regulations to give
expression to its complete independence from territorial authorities,78 and
in 1882 it authorized the creation of a separate Mixed Commission for
the Iron Gates-Galatz sector.79 On this Mixed Commission, a non-riparian
of the sector, Austria, was to be represented alongside the riparians,
Rumania, Serbia and Bulgaria. The aim was to assure proper interna-
tionalization of the river. In fact, however, the project only reinforced
the ongoing controversy over the scope of riparian and non-riparian states' 
rights. In defense of the riparian states' rights, Rumania refused to take
part in the Mixed Commission and, from then on, resisted the encroach-
ments of the European Commission. At the same time, while promising
to respect freedom of navigation, a now more-powerful Russia success-

72. 1 Moore, supra note 18, at 630; Costa, supra note 54, at 216.
74. Treaty of San Stefano, Mar. 3, 1878, Russia-Turkey, 3 Martens Nouveau Recueil (ser. 2d), 246.
75. Treaty of Berlin, July 13, 1878, 3 Martens Nouveau Recueil (ser. 2d), 449.
76. Id. art. 53.
77. Id. art. 55.
79. Reglement de navigation, de police fluviale et de surveillance, June 2, 1882, 9 Martens Nouveau Recueil (ser. 2d), 394; see also Costa, supra note 54, at 219.
fully limited the authority of the European Commission over the Kilia, that branch of the Danube delta lying in Russian territory. 80

With the occupation of defeated Rumania and the Russian Ukraine by the Central Powers toward the end of World War I, the whole of the Danube came for a short time under the control of Germany and Austria. In the Peace Treaty of Bucharest of 1918, 81 a different regime was instituted for the river, whereby a commission for the Danube delta (the so-called maritime Danube from Braila, slightly upstream of Galatz, to the Black Sea) was to replace the old European Commission. 82 This delta commission was to be composed of representatives of the riparian states of the Danube and European coastal states of the Black Sea. 83 Rumania guaranteed freedom of navigation on the maritime Danube for boats of the parties to the treaty, 84 so instead of freedom for all flags, there was, at best, freedom of navigation for the states in that region. The defeat of the Central Powers prevented application of the regime of the Treaty of Bucharest, and the peace treaties of Versailles and St. Germain-en-Laye internationalized most of the major European rivers, including the Danube. 85

In conformity with these two peace treaties, the Paris Convention of 1921 86 established a regime for the Danube that retained the administrative division between the multistate fluvial section of the river and the maritime, or delta, section which was now entirely within Rumanian territory. The fluvial Danube down to Braila was put under the jurisdiction of an International Commission, composed of riparian and non-riparian states. 87 The maritime Danube, from Braila to the Black Sea, was left under the old European Commission, to which any European state with sufficient interest in that sector could be admitted. 88 The Convention proclaimed freedom for all flags on the mainstream, 89 reserving only the tributaries to the riparians, and thereby reasserted the broader concept of freedom of navigation.

This did not last long, however. In 1936, Nazi Germany denounced

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80. G. Kaeckenbeeck, supra note 16, at 132-36; Costa, supra note 54, at 220. See also arts. 3-6 of the Treaty of London, Mar. 10, 1883, 9 Martens Nouveau Recueil (ser. 2d), 392.
82. Id. art. 24.
83. Id.
84. Id.
87. Danube Statute, supra note 86, art. 8.
88. Id. art. 4.
89. Id. art. 1.
the regime instituted at Versailles, proposing to replace it by bilateral arrangements between the riparians. Then, in 1939, after the occupation of Austria and Czechoslovakia, Germany forced on an acquiescent France and Great Britain its admission to membership on the European Commission, already weakened by the hostility of Rumania, which had controlled the Danube delta since 1919. In 1927, an advisory opinion of the Permanent Court of Justice reaffirmed the Commission’s powers over the stretch from Galatz to Braila, but Rumania did not give up. In 1938, helped by the unstable political situation in Europe and Germany’s successful attacks on the Versailles regime, Rumania obtained from Great Britain and France an agreement which reduced the European Commission to consultative status. This agreement of Sinaia did not touch on freedom of navigation, but it transferred the maintenance and police of the Galatz-Braila sector to the Rumanian government and, from then on, any decision of the Commission needed Rumania’s concurrence.

World War II introduced more radical, and ultimately more permanent, changes in the Danube basin. Germany, being at war with Great Britain and France, was able to bring about the dissolution of the International Commission without their consent and to replace it by an advisory committee limited to the riparian states, plus Italy and the U.S.S.R. The U.S.S.R. had once again become riparian to the delta because, with the acquiescence of Germany and Italy, it had forced Rumania to cede Bessarabia. Not satisfied with a limited share in the administration of the Danube, however, the Soviet Union pressed for the establishment of a unified regime for the entire river in which it would play a major, if not the predominant, role. Negotiations dragged on through 1940, until Germany’s invasion of the U.S.S.R. rendered them moot.

Toward the end of the war, counterattacking Russian armies occupied most of the Danube basin. The Soviet Union emerged not merely as a riparian (having successfully reasserted its claim to Bessarabia and the Kilia), but as master of the Danube, with a deciding voice in the fate of the river’s regime. This was evident at the conference convoked at

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90. See M. Hudson, supra note 51.
91. France and Great Britain accepted Germany’s demand on March 1, 1939. Costa, supra note 54, at 231; 3 M. Whiteman, Digest of International Law 888 (1964).
93. Agreement of Sinaia (European Commission of the Danube), Aug. 18, 1938 (United Kingdom-France-Rumania) 196 L.N.T.S. 113. See also 3 M. Whiteman, supra note 91, at 888.
94. 3 M. Whiteman, supra note 91, at 888-89; Costa, supra note 54, at 233.
95. Costa, supra note 54, at 233.
96. 3 M. Whiteman, supra note 91, at 889-91.
97. By the Soviet-Rumanian armistice of Sept. 12, 1944, 28 Dep’t of St. Bull. 787, 791-92 (1948); 41 Martens Nouveau Recueil (ser. 3d), 888. See also 3 M. Whiteman, supra note 91, at 893-94; Costa, supra note 54, at 234.
Belgrade in 1948. Great Britain, the United States, and France supported a return to the internationalization of the Danube, but the U.S.S.R. and the socialist states of eastern Europe advocated full control by the riparians and abandonment of the equal treatment of all flags. The latter view was embodied in the resulting Belgrade Convention, which has governed navigation on the Danube ever since.

Western powers have not signed the Belgrade Convention, but in time West Germany and Austria recognized the Danubian regime and, from 1960 onward, began to participate in the new Commission. This Commission, the only one now operating on the river, is but a shadow of the old European Commission. Composed solely of riparian states, it became a mere organ of coordination. The real power is vested in the riparian states, which exercise full control over the stretches of the river within their territories, with the proviso that they must respect freedom of navigation. That freedom is formally granted “to nationals, merchant vessels, and merchandise of all states.” However, it omits equality of treatment, and the right of access to river ports depends on agreements with qualified agencies of the riparian states. Moreover, the Convention excludes navigation on the tributaries from the compass of freedom for all flags.

The Congo, the Niger, the Senegal

Although freedom of navigation and equal treatment for all flags met with overt and covert opposition from the riparian states on European rivers, it was decreed and accepted (by some of the very same states) that these principles should apply on two of the largest rivers in Africa. The General Act of the Congress of Berlin of 1885 established similar, though not identical, regimes on the Congo and Niger rivers. For both rivers the regimes embodied freedom of navigation and equal treatment of merchant vessels of all nations on the mainstems, lateral canals, and

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98. 28 Dep’t of St. Bull. 736 (1948); 3 M. Whiteman, supra note 91, at 895-98.
100. 29 Dep’t of St. Bull. 291-92, 333 (1949); 3 M. Whiteman, supra note 91, at 899-900.
101. 4 C. Rousseau, supra note 35, at 534. Austria’s admission to the Commission was envisaged in the Belgrade Convention, supra note 99, annex I, para. 1, 33 U.N.T.S., at 218. West Germany has collaborated with the Commission on a technical level. See Costa, supra note 54, at 242.
102. Belgrade Convention, supra note 99, art. 5.
103. Id. art. 23.
104. Id. art. 1.
105. Id. art. 41.
106. Id. arts. 2, 8.
tributaries (benefits extending also to connecting railroads). On the Congo, regulation of navigation was to be entrusted to an international commission, composed of existing and future parties to the act of navigation, with powers modeled on those of the European Commission of the Danube. On the Niger, regulation was left to Great Britain, because it was claimed that the river had not been sufficiently explored.

The ease with which controversial principles were transferred from Europe to Africa and declared by the signatories to be a recognized part of international law was due partly to the belief that the African rivers had not been encumbered with past rules and claims, and partly to the wish of the colonial powers to avoid conflict in their African colonies. However, the regimes established by the Congress of Berlin were to have as checkered a history as those for the European rivers.

The regime of the Congo River, which had survived Belgium's annexation of the Congo in 1908, continued for a time after World War I, but since gaining independence in 1960, the attitude of Zaire (formerly Congo) has been unclear. The Zaire government has been engaged in controversy with the government in Brazzaville (formerly French Congo) as to the juridical status of the river, and seems to incline to the view that the old regime has lapsed.

On the Niger, the British Royal Niger Company, to which Great Britain entrusted the supervision of navigation, did not strictly adhere to equality of treatment for all flags. In regulations it adopted in 1894, the Company required foreign vessels to submit to customs control and inspection. Adherence to the principles of the Congress of Berlin was restored by agreements between Great Britain and France in 1898 and between France and Germany in 1911. After World War I, the Convention of St. Germain-en-Laye continued the regime of freedom of navigation on an equal footing on both the Congo and the Niger, but only for merchant vessels of the signatories to the convention and for those member states of the League of Nations which might in the future adhere to it.

108. Id. art. 25.
109. Id. art. 17.
110. Id. art. 30. See also G. Kaeckenbeeck, supra note 16, at 140-41.
111. Id. art. 13.
112. 4 C. Rousseau, supra note 35, at 548.
113. Id.
114. Revue Generale de Droit International Publique 212-14 (1896); see also 4 C. Rousseau, supra note 35, at 550.
The regime established by the European colonial powers on the Niger was finally abolished in 1963 by their newly independent successor states, and a new agreement was reached after protracted negotiations among the nine riparians (Guinea, Mali, Ivory Coast, Upper Volta, Dahomey, Niger, Nigeria, Chad, and Cameroon). The Niamey Act of 1963 re-established freedom of navigation for all flags on the mainstem, tributaries, and subtributaries, and acknowledged the right of each riparian state to develop the waters of the river and of the tributaries and subtributaries under its jurisdiction. A later agreement created a commission composed of all riparian states and charged with the enactment of regulations to implement the Niamey Act. These regulations and other decisions of the Commission became binding after approval by the basin states.

In 1963, the newly independent riparian states of the Senegal River (Mauritania, Guinea, Senegal, and Mali) reached an agreement on general development of the river basin whereby they declared the Senegal to be an international river. A year later, they concluded another agreement; this established a committee composed of representatives of the riparian states, with broad powers over the development and exploitation of the basin, and proclaimed freedom of navigation for merchant ships and freedom of transportation for the merchandise of all states.

Persistence of riparian state claims

What this survey brings out is the persistence of the claim of individual riparian states to control who was to navigate the stretches within their territories of rivers traversing or separating several states. The riparian states had a sufficiently strong interest in treating a river system as a unit for communication so that on any major watercourse of concern to more than one state, a regime could and did emerge in which the riparians at least were granted the right to navigate that river. However, their collective

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120. Niamey Act, supra note 119, art. 3.
121. Id. art. 2.
122. Agreement Concerning the Commission of the River Niger and Navigation and Transportation on the River Niger, Nov. 25, 1964, 10 Annuaire Francais de Droit International 813, 815 (1964); see also L. Teclaff, supra note 119, at 176.
124. Agreement of Feb. 7, 1964, art. 5, Andre, supra note 123, at 302; see also 4 C. Rousseau, supra note 35, at 551.
interest was not strong enough to overcome the anciently asserted interest of the individual riparian state in demanding that its assent be given in some form before others could enter the stretch of river within its borders. Hence, until quite late in European history, stoppage privileges and other restrictions disrupted freedom of navigation. Inter-city agreements to keep parts of river systems open were the precursors of navigation treaties between states, but not until the 19th century do we have multilateral conventions, such as the Congress of Vienna and the Congress of Berlin, providing for freedom of navigation on international rivers generally. Even then, the riparian states found ways to flout the intent of such instruments. Moreover, in Europe, these conventions and others pertaining to individual rivers were restricted to stipulating freedom of navigation primarily on mainstreams. If, as in Africa, they had included national tributaries, they would have been in the vanguard of measures treating entire river basins as units of water use.

NON-NAVIGATIONAL USES: THE INTERPLAY OF MUNICIPAL AND INTERNATIONAL LAW

State Control of Water Uses in Antiquity

Although river navigation was extensive in the distant past, it was not the only or even the foremost water use in some areas of the world. In the fluvial civilizations of antiquity (Mesopotamia, Egypt, and China), irrigation was probably more important, for it required enormous cooperative effort. Major irrigation works were often attributed to legendary rulers. The significance of these legends lies not in their veracity or lack of it, but in the fact that already they attributed such works to supreme authority in the community. It could hardly have been otherwise, because the communal effort necessary to build large dams and canals with the sole aid of human and animal muscle-power could be achieved only by a labor force regimented and efficiently mastered through a central and probably oppressive authority. Egypt's irrigation works, grandiose though they were, were confined to one river, the Nile, both banks of which were canalized from very ancient times to control its regular, annual flood. The scale of these works was surpassed in Mesopotamia, where the engineers of antiquity were confronted with the need to control two highly unpredictable rivers, the Tigris and the Euphrates, and many tributary streams. They managed to regulate the Euphrates by constructing

125. Gruber, Irrigation and Land Use in Ancient Mesopotamia, 22 Agricultural History 69 (1948); J. Besançon, L’Homme et le Nil 86 (Geographie Humaine No. 28, 1957); River Regulation and Control in Antiquity, H.Doc. No. 18, 63rd Cong., 2d Sess. 1 (1914).

two major lateral canals (one of which was 400 feet wide and 250 miles long), but they never quite succeeded in subduing the more erratic Tigris.127

The rulers of the fluvial civilizations not only built canals, but they also understood the need for vigilance in maintaining them and issued regulations to that end. Hammurabi's Code, for example, prescribed penalties for neglecting the upkeep of irrigation ditches in Mesopotamia.128 Close supervision is recorded also from China, where local officials inspected and repaired canals and ditches.129 Since the availability of flowing water was important for the well-being of the irrigation community and use of water was under tight state control, additional water for the expansion of irrigation could be obtained only by agreement between states or by conquest. To give them permanency, agreements parcelling out the waters were often made by invoking divine participation. One such agreement divided waters drawn from the Euphrates between the Mesopotamian city-states of Umma and Lagash, but, because it was imposed by the upper riparian, Lagash, the lower riparian, Umma, seized the first opportunity to repudiate the settlement and drain the boundary canal.130 It may plausibly be argued that such lack of voluntary cooperation in water management led to attempts to conquer entire river basins in arid areas and contributed to establishing empires based on these major river basins.131 In any case, there is no doubt that the cities and states of the fluvial civilizations strictly controlled the use of water within their borders, and their agreement was required for any diversion for use outside those borders.

Rome, whose empire absorbed the irrigation economies of the Middle East, showed less interest in the direct management of water. Influenced by conditions in more generously watered Italy, the Roman law treated the right to use water as a property right that could be established originally by open use or by derivation from the rightful user.132 Any riparian owner, or anybody who could prove long-standing open use, could use the water of a stream as long as that use did not infringe upon the right of others or impair navigation.133 The role of the state was limited to protecting navigation, and any use that conflicted with navigation was forbidden.134

130. Barton, supra note 3, at 57-61.
131. L. Teclaff, supra note 119, at 21-25.
132. See Dig. of Justinian 43.20.3 & 43.12.2, Roman Water Law 37, 108 (E. Ware trans. 1905).
133. Id. 43.12.1.2 & 43.20.3.1, at 37.
134. Id. 39.3.10.2 & 43.12.2, at 36-37.
State Control of Water After the Fall of the Roman Empire

After the fall of the Roman Empire, the two aspects of Roman law—strong government regulation of water use and the role of custom—appeared side by side in Europe and were carried, much later, to overseas possessions of the European states. At first, control over rivers and streams passed to the feudal lords, who treated them as private property. If anything, however, this privatization of European watercourses strengthened government control, because the feudal lords, especially those who had jurisdiction to tax large territories, exercised quasi-governmental powers. As noted above, local magnates exercised almost a stranglehold over navigation on some rivers, but navigation was only one among a number of important uses. In medieval Europe, water was widely used for flour-milling, the making of cloth, paper, iron, beer, and tools, and the extraction of alluvial gold, tin, and other mineral deposits, as well as for the irrigation of crops and watering of meadows.

The distinction between public and private waters reemerged earliest in Spain, where the exigencies of constant war with the Moors worked in favor of strengthening the power of the monarchy as against private landowners. In the Siete Partidas (a water code enacted between 1256 and 1265 by King Alfonso X of Castile), flowing waters were considered common, as in Roman law. Works obstructing navigation were prohibited and royal authorization was required for any other type of work in waters that flowed through crown land. In such instances, the crown had both the power, as sovereign, to forbid any water use in protection of navigation, and the right, as a riparian landowner, to authorize any use that did not affect navigation. Subsequently, in the reconquered territories in Spain and, later still, in the Spanish colonies in the Americas, all flowing waters (not just those located on crown lands) became waters of the crown, which was supposed to hold them for public benefit, and an authorization by the King's representative, the viceroy, was required for their use.

After independence, former Spanish colonies such as Mexico and Argentina retained the distinction between public and private waters. The Mexican Constitution of 1917 included in the former category all major

135. Id. 3.34.7 & 11.42.4, at 101-02.
138. See supra notes 10 and 11.
142. Id., pt. 3, tit. 28, § 32.
streams, and the Mexican Water Code of 1934 reiterated the well-established requirement of a concession or permit for irrigation and other special uses (that is, uses that were not, like navigation, granted to the public). The Argentine Civil Code divided waters into public and private, and limited the latter to only a few minor categories—flowing waters that rise or end on one property, spring water that rises on private property and does not flow in channels, and rainwater that falls on private property. The Code required an authorization for the diversion or alteration of the natural course of such waters. In Spain, the Water Code of 1879 confirmed the prohibition on any use of navigable waters that might impair navigation and subjected the use of waters of non-navigable streams to administrative authorization.

Feudal control of waters by riparian magnates was much more thorough in France than in Spain, and its decline did not even begin until the second half of the 17th century, when the crown consolidated control of navigable rivers. More than a century later, the Code Napoleon confirmed that such streams did not just become private property of the king, but were in the public domain, that is, destined for public use and not susceptible of private ownership. Non-navigable streams remained under control of the riparian owners, who could divert them for use on their land, provided that the diverted waters, on leaving an estate, were returned to the natural course of the stream. This right was further limited by the need for a permit from the authorities for any work in the stream, other than making a simple cut for irrigation.

Under the influence of the Code Napoleon, the administrative system of water disposition spread to Germany and other countries of Europe and, from there, to other parts of the world. The requirement of an authorization for water use varied according to the jurisdiction, but, as a rule, extended at least to the navigable waters. For example, according

144. Mexico, Const. (1917), art. 27, English translation in Constitucion Politica de los Estados Unidos Mexicanos (1962).
146. Cód. Civ. 1869 (as amended), arts. 2340, 2350, 2635-37 (Argentina).
147. Id. arts. 2341 & 2642.
148. Law of Waters of 13 June 1879, art. 184, Gaceta (June 19, 1879) Spain; 59 Bol. Rev. Gen. de Leg. y Jur. 21 (1879).
149. See Edict Concerning General Regulation of Waters and Forests, Aug. 1669, titre XXVII, art. 41, 18 Isambert, Recueil General des Anciennes Lois Francaises 298.
150. Code Napoleon, art. 538 (Off. ed. 1810) (Fr.).
151. Id. art. 644.
152. Law of April 8, 1898, Concerning the Regime of Waters, arts. 11, 12 & 16, 11 Bull. des Lois 394 (12e ser., 1898) (Fr.); A. Colin & J. Capitant, 1 Cours Elementaire de Droit Civil Francais 761 (1931).
to the Italian Testo Unico of 1933, any water that could satisfy a general public need or interest was public and its use was subject to authorization. 154

The Role of Custom in Municipal and International Law

The state’s rather remote control under Roman law had left considerable scope to custom in distributing water uses among riparian landowners. 155 The Middle Ages lacked the technical skill to harness flowing water on any large scale and there was even less inclination to disturb existing uses. So, from England in the west to Poland in the east, immemorial custom was invoked to protect these uses. 156 In time, the stability of custom, which could not be unilaterally disturbed, bound the individual riparian owners on a river into a community with a collective interest in how its waters were used. This bare notion of a community of riparians was transferred in Europe from local groups to states, which began to conclude treaties requiring the consent of the other party or parties on a stream for any alteration in the flow of boundary waters (that is, waters through which the frontier ran). 157

Although these agreements introduced to international law the concept of a community of riparians, they failed to provide guidelines from which rules for the use of international waters could evolve in the manner in which they were developed by the courts in England and the United States. 158 There the courts stuck close to medieval custom, decreeing that the waters of a stream should flow as they always had flowed, except that any riparian was permitted to use as much water as was needed for domestic purposes. Other uses were allowed only if they pertained to riparian land, that is, land contiguous to the stream, and did not appreciably diminish the flow. Use of water on non-riparian land was not permitted. This older, natural flow version of the riparian doctrine obtained in England down to 1963 (when it was replaced by a permit

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154. Royal Decree No. 1775, December 11, 1933 (Testo Unico), art. 1, 5 Rac. Uffi. 30 (1933) (It.), (D. Caponera trans., Water Laws in Italy 5, F.A.O. Development Paper, No. 20 (1953)).
155. See Dig. of Justinian 39.3.1.23, supra note 132, at 46-47; id. 43.13.1.8, at 40; id. 43.20.3.4., at 109; id. Code Justinian 11.42.4, at 102.
157. One of the earliest of these agreements was the Treaty on Boundaries Between Their Majesties the King of Prussia and the King of the Netherlands, Oct. 7, 1816, 3 Martens Nouveau Recueil (ser. 1), 54-65. For other treaties, see Teclaff, The Impact of Environmental Concern on the Development of International Law, 13 Nat. Res. J. 357-58 (1973).
system)\textsuperscript{159} and its characteristics were succinctly outlined by the English Court of Chancery in 1926, as follows:

For the purpose of this judgment, it is sufficient to state that a riparian owner may take and use the water for ordinary purposes connected with the riparian tenement (such as domestic purposes or the wants of his cattle), and that in the exercise of his right, he may exhaust the water altogether; that he may also take and use the water for extraordinary purposes, if such user be reasonable and be connected with the riparian tenement, provided that he restores the water so taken and used substantially undiminished in volume and unaltered in character; and lastly, that he has no right whatever to take the water and use it for purposes unconnected with the riparian tenement.\textsuperscript{160}

In the United States, Justice Kent, describing the riparian rights doctrine in his Commentaries, similarly maintained that the stream must be left undiminished and that the riparian owner should use the water in a reasonable manner.\textsuperscript{161} Both in England and the United States, the courts had established \textit{a priori}, for all appropriate uses, what was a reasonable manner of water use concomitant with leaving a stream undiminished.

Whereas, in England, the rules of reasonable use continued to protect the natural flow of streams, in the United States emphasis subsequently shifted from protecting the natural flow to determining what was reasonable in particular circumstances. \textit{A priori} criteria of reasonableness were abandoned for a general, though vague, principle of reasonableness as interpreted by the courts in each instance.\textsuperscript{162}

Thus, the riparian rights doctrine in the United States gained in flexibility, but lost its certainty and easy predictability. It failed to embrace the whole country because west of the Mississippi yet another set of customary rules developed called prior appropriation.\textsuperscript{163} There, the pas-

\textsuperscript{159} Water Resources Act, 1963, ch. 38.

\textsuperscript{160} Artwood v. Llwy Main Collieries, Ltd., Ch. 444, 458 (1926).

\textsuperscript{161} 3 Kent, Commentaries on American Law 440 (1829). See also Justice Story's opinion in Tyler v. Wilkinson, 24 F. Cas. 472, 474 (C.C.D.R.I. 1827) (No. 14,312).

\textsuperscript{162} In 1883, the Minnesota Supreme Court gave an example of what a court would consider as factors establishing reasonableness of use:

- In determining what is a reasonable use, regard must be had to the subject-matter of the use; the occasion and manner of its application; the object, extent, necessity, and duration of the use; the nature and size of the stream; the kind of business to which it is subservient; the importance and necessity of the use claimed by one party, and the extent of the injury to the other party; the state of improvement of the country in regard to mills and machinery, and the use of water as a propelling power; the general and established usages of the country in similar cases; and all the other and ever-varying circumstances of each particular case bearing upon the question of the fitness and propriety of the use of the water under consideration.

Red River Roller Mills v. Wright, 30 Minn. 249, 253, 15 N.W. 167, 169 (1883).

sive role of the state as record keeper eventually expanded into that of permit giver, and no use could be initiated without prior authorization. East of the Mississippi, a permit system was introduced in the 1930s in Maryland and spread quickly to other states. It allowed the state administration to evaluate applications for water use from the point of view of public welfare and safety. In any case, alongside state laws, the federal government had established its own administrative systems of water allocation, based on constitutional supremacy in matters concerning navigation and water distribution.

A different version of the riparian rights doctrine evolved in France. There, customary law became codified in the Civil Code, which permitted a riparian owner to use on his land the waters of a stream passing through it on the condition that such waters were returned to the natural channel of the stream when it left the riparian land. This is close to the English version of the riparian rights doctrine, but diverged from it in limiting the riparian right to non-navigable streams. In England, the riparian rights doctrine lingered longest until, as noted above, it was replaced by a permit system in 1963. So, after initial success, customary water rules failed not only to establish a uniform system in Europe and the United States, but also to dislodge the need for administrative authorization, and were themselves replaced by administrative allocation of water.

This fragmented customary municipal law could hardly serve as a model for international law, and the communities of riparian states continued their existence without any rules other than those based on an agreement.

The River Basin Concept in Municipal Law

Meanwhile, even though the riparian rights doctrines were losing ground in municipal legal systems, the underlying concept of the unity of a river was taken up in the closing decades of the nineteenth century by planners of multipurpose water development and was later expanded to embrace entire river basins. For example, in 1890, a British engineer planned the Aswan Dam on the Nile both for irrigation and navigation. Projects serving two or more purposes simultaneously were successfully carried out in Germany and the United States. Then, in a letter introducing

164. Teclaff, supra note 153, at 15.
168. Civ. Code, art. 644 (Fr.).
169. See supra note 159.
170. See supra note 153.
the preliminary report of the Inland Waterways Commission in 1908, President Theodore Roosevelt stated that each river system was a single unit and should be treated as such. Four years later, in its final report, the Commission itself endorsed the idea that a river basin should be treated as a unit for maximum utilization of its water resources. In succeeding decades, recommendations to that effect appeared in an impressive number of official reports and led to the establishment in 1933 of a government corporation, the Tennessee Valley Authority (TVA), to plan, construct, and operate multipurpose projects in the Tennessee River basin.

In time, basin-wide exploitation of water resources spread to other parts of the world, and commissions were established with wide powers, reaching in some cases beyond the development of water resources per se. The basin concept appeared to have made such progress that the U.N. Secretary-General stated unequivocally: "River basin development is now recognized as an essential feature of economic development." This claim proved to be too optimistic and premature, however. The very idea of the basin as the best development unit was challenged by other, allegedly more expedient solutions. When President Franklin D. Roosevelt proposed, in 1937, to divide the United States into seven regions for the development of water and other resources, the division was only partially by drainage boundaries and his message to Congress acknowledged that, in some instances, different administrative units might be more advantageous. A quarter of a century later, the Bureau of Reclamation actually pronounced the river basin to be outmoded as an isolated unit of development. This was stated in the Appendix to the 1963 Pacific Southwest Water Plan, a huge project which envisaged the transfer of water across drainage boundaries from rivers in northern California to the lower Colorado basin. An even more grandiose scheme,

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174. Id. at iv.
176. See, e.g., the so-called "308" Reports, prepared by the Corps of Engineers. They comprise some 200 studies of river basins in the United States undertaken to further multipurpose water development. They are listed in H.R. Doc. No. 308, 69th Cong., 1st Sess. (1926). One of the fullest endorsements of the river basin as the most suitable unit for water development can be found in the 1961 report of the Senate Select Committee on National Water Resources, which states: "The Federal Government, in cooperation with the States, should prepare and keep up to date plans for comprehensive water development and management for all major river basins of the United States." S. Rep. No. 29, 87th Cong., 1st Sess. 17 (1961).
178. See Teclaff, supra note 119, at 132-43.
the North American Water and Power Alliance (NAWAPA), would have diverted surplus water via canals from Alaskan and Canadian rivers through the western United States to northern Mexico. It amounted to treating much of the North American continent as one enormous unit for water development. Equally grandiose Soviet plans to divert some of the north-flowing Siberian rivers southward into the arid Central Asian interior likewise disregarded river basin boundaries.

The River Basin Concept in International Law

Perception of the interdependence and interrelationship of the water resources of a river basin was no more successful than the riparian rights doctrine in generating a coherent system of principles and rules of water law at a municipal level. On an international level, however, the community of interests of states in a river basin appeared more obvious and capable of realization. The community involved (unlike the community in a municipal context) is usually small. In many instances, the number of states in a river basin is no larger than the number of states riparian to the mainstream. Within less than half a century, individual jurists and associations of jurists were able to arrive at a body of rules for such a community.

In 1911, the International Law Institute, in its Madrid Declaration, stated that: “Riparian states with a common stream are in a position of permanent physical dependence on each other.” The Institute drew up two essential rules resulting from that interdependence which states should observe. The first was that “when a stream forms the frontier of two States . . . neither State may, on its own territory, utilize or allow the utilization of the water in such a way as to seriously interfere with its utilization by the other State or by individuals, corporations, etc., thereof.” The second rule was that “when a stream traverses successively the territories of two or more States . . . no establishment . . . may take so much water that the constitution, otherwise called the utilizable or essential character of the stream shall, when it reaches the territory downstream, be seriously modified.”

185. Id. para. 1.
186. Id. para. II. 3. Kaufman, writing in the 1930s, similarly deduced rights and duties of states from the physical interdependence of stream waters. Kaufman, Regles Generales du Droit de la Paix, 54 Hague Academie de Droit International, Recueil des Cours 390 (1935). So did Andrassy, two decades later. For Andrassy, the territorial unity of neighboring states, of which the rivers linking them are an instance and example, gave rise to a unity of cause and effect and, in consequence, to the law of voisinage. Andrassy, Les Relations Internationales de Voisinage, 79 Hague Academie de Droit International, Recueil des Cours 108 (1951).
Forty-one years later, the International Law Association (ILA) put its stamp of approval on the idea of the integrated river basin as the proper unit for the cooperation of states in developing water resources. The resolution adopted by the ILA at its Dubrovnik Conference in 1956 stated that:

So far as possible, riparian states should join with each other to make full utilization of the waters of a river, both from the viewpoint of the river basin as an integrated whole, and from the viewpoint of the widest variety of uses of the water, so as to assure the greatest benefit to all.\textsuperscript{187}

At its New York Conference in 1958, the ILA reiterated its endorsement of the integrated basin principle in the statement that: "A system of rivers and lakes in a drainage basin should be treated as an integrated whole, and not piecemeal."\textsuperscript{188}

It agreed that rules of customary international law govern the use of waters of drainage basins that are within the territories of two or more states, and identified one such rule (or principle):

\begin{quote}
[E]ach coriparian state is entitled to a reasonable and equitable share in the beneficial uses of the waters of the drainage basin. What amounts to a reasonable and equitable share is a question to be determined in the light of all the relevant factors in each particular case.\textsuperscript{189}
\end{quote}

The International Law Institute also extended its consideration of rules applicable to water resources from single streams to streams within the same watershed. In the Salzburg Declaration of 1961,\textsuperscript{190} it found that the rights of states to use waters flowing across their borders are limited by the rights of other states concerned with the same river or watershed, and that principles of equity define these rights. The Declaration did not name the principles, beyond stating that a state which unilaterally undertakes a project that may affect the use of the same waters by other states must preserve the equitable rights of those states and compensate for any losses or damage incurred.\textsuperscript{191}

The Institute’s pronouncement still left doubts as to whether there were any specific legal rules applicable to waters of international river basins. However, there was no room for doubt in the ILA’s Helsinki Rules,\textsuperscript{192} a

\textsuperscript{189} Id. at 100 (Agreed Principle 2).
\textsuperscript{190} International Law Institute, Resolution on the Use of International Non-Maritime Waters (Salzburg, 1961), 49 Annuaire de l’Institut de Droit International II, 381-84 (Salzburg Session, Sept. 1961).
\textsuperscript{191} Id. art. IV.
\textsuperscript{192} International Law Association, Report of the Fifty-Second Conference 14-20, 484-532 (Helsinki 1967) [hereinafter Helsinki Rules].
DEVELOPMENT OF INTERNATIONAL WATER LAW

crowning achievement of the ILA after many years of labor.\(^\text{193}\) As in the Salzburg Declaration of the Institute, each basin state is entitled to a reasonable and equitable share—not of the waters themselves, but of their beneficial use.\(^\text{194}\) The Helsinki Rules spell out the factors which define what is equitable\(^\text{195}\) and, as in the American riparian rights doctrine, the allocation of uses is not frozen. There is room for new uses, even incompatible ones.\(^\text{196}\) The Helsinki Rules further stated as existing principles that a basin state might not be denied the present reasonable use of waters of an international drainage basin to reserve for a co-basin state a future use of such waters,\(^\text{197}\) and that a use or category of uses was not entitled to any inherent preference over any other use or category of uses.\(^\text{198}\) The Helsinki Rules also implied, though they did not explicitly state, that groundwater and estuarine waters, as well as surface waters, were interconnected through cause and effect and thus formed the basis for a holistic approach in law and management of the aquatic environment.

On the level of state practice, however, the claim of states to total control of waters within their territories persisted. That claim was relied upon by the United States at the turn of the century in the controversy with Mexico concerning distribution of the waters of the Colorado River.\(^\text{199}\) It was embodied in the Boundary Waters Treaty of 1909 between the United States and Great Britain (Canada).\(^\text{200}\) The United Nations Economic Commission for Europe (ECE) accepted it, with limitations, in a 1952 memorandum\(^\text{201}\) which acknowledged the sovereignty of states over those stretches within their borders of waterways traversing their territories, but recognized, at the same time, that full exercise of this sovereign power would limit the ability of other riparian states to exercise a similar power.

The ECE memorandum pointed out that the conflict between equal and exclusive powers imposed the duty to seek resolution by an agreement.\(^\text{202}\) It hinted that there might already be a legal duty to obtain the consent


\(^{194}\) Helsinki Rules, *supra* note 192, art. 4.

\(^{195}\) Id. art. 5.

\(^{196}\) "An existing reasonable use may continue in operation unless the factors justifying its continuation are outweighed by other factors leading to the conclusion that it be modified or terminated so as to accommodate a competing incompatible use." Id. art. 8 (I).

\(^{197}\) Id. art. 7.

\(^{198}\) Id. art. 6.

\(^{199}\) 1 Moore, *Digest of International Law* 653-54 (1906). It was in this dispute that U.S. Attorney General Harmon gave his opinion that, under international law, the United States had the right to divert any waters inside its frontiers in the absence of treaty obligation (Harmon Doctrine). 21 Op. Att'y Gen. 280-83 (1898).

\(^{200}\) Boundary Waters Treaty, Jan. 11, 1909, art. II, 36 stat. 2448, 2449, T.S. No. 548.


\(^{202}\) Id. at 40.
of other riparian states when the injury liable to be caused was serious and lasting, but doubted whether it was possible to establish a criterion distinguishing between a light and a serious injury.\textsuperscript{203} The meaning of this interesting attempt to ascertain the state of international water law may, perhaps, be interpreted as follows: the physical unity of a watercourse fosters a community of interests of the riparian states (which the memorandum explicitly recognized), but these interests must be transformed by an agreement into legal rights with corresponding duties.

In 1976, when the International Law Commission’s first Special Rapporteur was formulating draft articles on the non-navigational uses of international watercourses, he had proposed that “international watercourse” was synonymous with “international river basin.”\textsuperscript{204} This identification met with opposition from a number of the governments queried\textsuperscript{205} and with criticism within the Commission itself.\textsuperscript{206} The division of opinion seemed to be based on geographic location. Downstream states preferred the concept of river basin, but upstream states rejected it for the concept of a watercourse separating or traversing the territory of two or more states.\textsuperscript{207} Consequently, the second Special Rapporteur introduced in his report the idea of “river system” in place of river basin.\textsuperscript{208} The Commission defined “river system” as,

formed of hydrographic components such as rivers, lakes, canals, glaciers and groundwater constituting by virtue of their physical relationship a unitary whole; thus, any use affecting waters in one part of the system may affect waters in another part. . . . To the extent that parts of the waters in one State are not affected by or do not affect uses of waters in another State, they shall not be treated as being included in the international watercourse system.\textsuperscript{209}

The concept of “system” fared no better than that of “basin.” The third Special Rapporteur, in his second report, abandoned it as being too close to the river basin concept, hence inflexible and “introducing legal superstructure from which unforeseen principles might be inferred.”\textsuperscript{210}

\textsuperscript{203} Id.
\textsuperscript{205} Id. at 147, 161-67.
\textsuperscript{207} [1979] 2 Y.B., supra note 206, at 153.
He returned to the idea of watercourse, which, he felt, would preserve flexibility without jeopardizing the unity of the river (not basin, or system). It would also prevent any land uses sneaking in, and might exclude groundwater. The watercourse began to look more and more like a pipe-stem.\textsuperscript{211}

In the discussion on the reports, members of the Commission held that such principles of equity as good neighborliness and \textit{sic utere tuo ut alienum non laedas} (use your own property so as not to injure that of another) may apply to the utilization of international watercourses.\textsuperscript{212} These are, of course, general principles applicable to any human activities. The second Special Rapporteur, in his third report to the Commission, was more specific and identified equitable utilization as the principle of equity applicable to the allocation of uses of international waters.\textsuperscript{213} He then proposed that the Commission should go beyond equitable utilization and include in its draft convention the concept of equitable participation, which would not only articulate the settled principle of equitable utilization (as elaborated in the Helsinki Rules), but would also embrace the progressive concept of cooperation.\textsuperscript{214} However, the third Special Rapporteur abandoned this idea.\textsuperscript{215} The third Rapporteur also reformulated the concept of waters as shared resources\textsuperscript{216} by stating that "a watercourse state is, within its territory, entitled to a reasonable and equitable share of the waters of an international watercourse."\textsuperscript{217} Even this version, which


\textsuperscript{214} The concept of equitable participation, in the words of the Special Rapporteur, means that: States sharing an international watercourse system not only may stand on their rights to reasonable and equitable sharing of the uses of the waters, but, arguably, also have a right to the cooperation of their co-system states in, for example, flood control measures, pollution abatement programmes, drought mitigation planning, erosion control, disease vector control, river regulation (training), the safeguarding of hydraulic works or environmental protection—or some combination of these—as appropriate for the particular time and circumstances.

\textit{Id.}

\textsuperscript{215} 1984 Report, \textit{supra} note 210, at 212-16.

\textsuperscript{216} The earlier version read:

To the extent that the use of waters of an international watercourse system in the territory of one state affects the use of waters of that system state, the waters are for the purposes of the present article, a shared natural resource.


\textsuperscript{217} 1984 Report, \textit{supra} note 210, art. 6, at 221.
was meant to give the impression that only the uses, not the waters, were shareable, did not seem to satisfy the criticism that the concept of sharing is contrary to the dominant principle of state sovereignty over natural resources.\textsuperscript{218}

The fourth Rapporteur initially accepted the formulations of his predecessor (the third Rapporteur),\textsuperscript{219} but in succeeding reports he seems to have moved closer to the view of the third report of Mr. (now Judge) Schwebel, the second Rapporteur,\textsuperscript{220} that there is already a considerable body of generally accepted rules of international water law.\textsuperscript{221}

CONCLUSIONS

Ever since the fluvial civilizations of antiquity, states have asserted the right to control non-navigational uses where water was of paramount importance for the economy. In the western part of the Roman Empire and, later, in its west European successor states until the nineteenth century, custom was allowed to play a larger role, because a comparatively abundant rainfall made the economy less dependent on water. However, the clearest formulation of that customary water law, the riparian rights doctrine, failed to evolve into a unitary set of rules and, in the United States, was challenged by a different set of customary rules based on the doctrine of priority of use. The riparian rights doctrine influenced the emergence of the notion of a community of riparian states, but one without binding rules concerning water use.

Reformulation of the riparian rights doctrine as a set of rules inspired by the physical unity of a watercourse or river basin has not won general acceptance, either at a municipal or at an international level. Nevertheless, the concept of unity of a stream or river basin—which is a shorthand way of referring to a unity of cause and effect in water resources utilization—did bring about a clearer understanding and recognition at an international level that general principles of equity apply to the allocation of water and to conflicts over water use.

The deliberations in the International Law Commission have shown that there may be a chance of reducing maxims of equity to principles and rules of law. Regrettably, the river basin concept, though geographically, hydrologically, and logically sound, has not met with general approval in the ILC's debates. It will be up to agreements concerning

\textsuperscript{218} \textit{Id.} at 222-25.


\textsuperscript{220} Third Report, \textit{supra} note 213.

individual international river basins to win for the concept, in due course, the general approval it deserves. Once this happens, it may end four thousand years of squabbling over international waters and begin a new era of smooth and peaceful adaptation to ever-changing local conditions of the general principles inherent in, and dictated by, the unity of the river basin.