

POLITICAL FRONTIERS AND BOUNDARIES

J. R. V. Prescott

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J. R. V. PRESCOTT

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POLITICAL
FRONTIERS
AND
BOUNDARIES

J. R. V. Prescott

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*This book is dedicated to
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Preface

This book consists of two parts. The first six chapters treat frontiers and boundaries in a systematic fashion. These chapters are based on the work originally published as *The geography of frontiers and boundaries* by Hutchinson in 1965 and revised in *Boundaries and frontiers* published by Croom Helm in 1978.

All the chapters have been rewritten to take account of new ideas and new publications in this field. The Introduction has been completely rewritten. The chronological review of the works in this field has been changed to an examination of the major themes developed in the literature. Two additional sections have been written in the same style dealing with maritime boundaries and boundaries in the air. The chapter on maritime boundaries has been completely rewritten to deal with the new régime for the oceans provided in the 1982 Convention on the Law of the Sea.

The remaining seven chapters treat frontiers and boundaries in a regional manner. Each chapter deals with the principal characteristics of the evolution of boundaries in one major region of the world and provides an account of the remaining serious boundary disputes.

Throughout the text, wherever possible I have used place names as they appear in the comprehensive edition of *The Times atlas of the world* published in 1980. When names do not appear in this atlas I have used the form employed by the country concerned.

I willingly acknowledge my debt to Professors Harm de Blij and Jean Gottmann for many helpful suggestions on the content and structure of the book. For helping me in the preparation of this study I thank Rob Bartlett for drawing the maps so skilfully and Wendy Nicol for photographing so well the finished maps and the maps needed for research. I am also grateful to Patrick Singleton of the Baillieu Library of the University of Melbourne for his considerable assistance.

VICTOR PRESCOTT
University of Melbourne

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1 *Introduction*

Land boundaries

Political frontiers and boundaries separate areas subject to different political control or sovereignty. Frontiers are *zones* of varying widths which were common features of the political landscape centuries ago. By the beginning of the 20th century most remaining frontiers had disappeared and had been replaced by boundaries which are *lines*. The divisive nature of frontiers and boundaries has not prevented them from forming the focus of interdisciplinary studies by lawyers, political scientists, historians, economists, and geographers. Scholars from these fields have produced a rich literature dealing with frontiers and boundaries. Any survey of this extensive literature will reveal that the following themes have attracted the most attention.

National histories and international diplomacy

When the histories of countries are unravelled it is plain that most of them did not emerge at one time within a single set of international limits which have remained unchanged. That is certainly the case with countries in Europe, North and South America, and Asia. Although it is true that many African countries, such as Somalia and Mozambique, became independent within a set of boundaries which have not been altered, research into their colonial antecedents reveals a variety of colonial boundaries. A significant part of the history of several countries concerns the struggle for territory, and the identification of previous national boundaries on a single map provides a shorthand account of stages in the progress to the present pattern of states. Often the events which established new boundaries were sufficiently important to mark the division between important periods in the political history of countries or in the diplomatic and military history of continents.

This point can be illustrated by Figure 1.1, which shows the boundaries of Greece since 1832, the year when the modern state of Greece emerged from nearly three centuries of Turkish rule. The rebellion began in the Peloponnisos in April 1821, and this area was quickly cleared of Turks. The Greek sailors also enjoyed success against the Turkish navy in the Aegean Sea, but the tide of rebellion had been halted by June 1827 and other foreign powers decided it was time to intervene to avoid continued instability in this region. The destruction of the allied Turkish and Egyptian fleets by naval squadrons from England, France, and Russia in

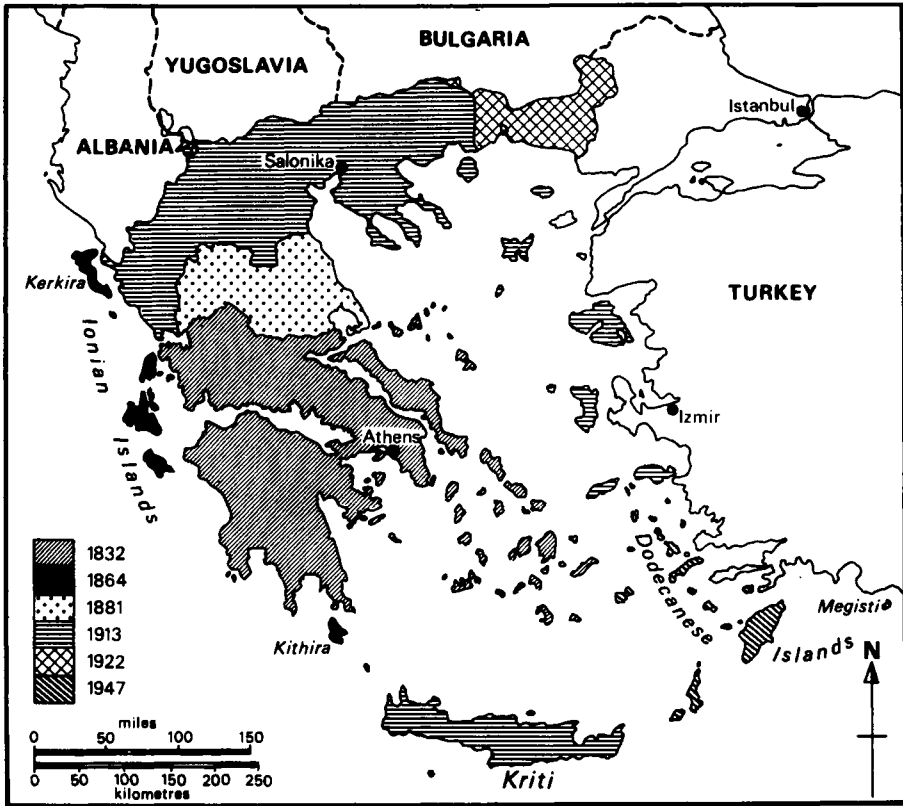


Figure 1.1 The evolution of modern Greece.

Navarino Bay on 20 October 1827 paved the way for an enforced settlement on the terms of these countries. In 1830 it was proposed that the northern boundary of Greece should run southwestwards from the vicinity of Lamia to Mesolongion, but Palmerston then persuaded his allies that the line should run from Pagasitikos Kolpos to Amvrakikos Kolpos, as shown in Figure 1.1. However, Palmerston defeated proposals to give to Greece the islands of Samos and Kriti on the grounds that the former was too close to the Turkish coast and the latter was too valuable and had a large Turkish population which should not be subject to Greece.

On 29 March 1864, six months after Greece had installed a Danish King, Britain ceded the Ionian Islands to Greece. These islands stretch down the west coast of Ipiros and Peloponnisos from Kerkira (Corfu) in the north to Kithira in the south. These islands had been formed into the United States of the Ionian Islands in 1815 at the Treaty of Versailles and placed under the protection of Britain. Their union with Greece followed a unanimous vote of support by the Legislative Assembly in the islands.

The war between Russia and Turkey in 1877 presented Greece with an opportunity to claim the Greek provinces in Turkish Europe, but the decision to take action was delayed so long that the Greek army had no chance to march before the war was ended a month later. The peace treaty signed by Russia and Turkey at San Stefano on 3 March 1878 contained no territorial gains for Greece. Fortunately for that country the other major powers in Europe were dissatisfied with the territorial arrangements which Russia had forced on Turkey, and the treaty was revised at the Congress of Berlin attended by all the major powers in June and July 1878. Greece was not represented at this Congress, but Britain persuaded the other powers to require Turkey to make concessions to Greece along their common boundary. At first it was proposed that the new boundary should run from Stoupi in the east to the mouth of the Thiamis River in the west, opposite Kerkira. This would have given Greece the region of Thessalia and most of Ipiros. Turkey could not resist the cession of the former region with its pronounced Hellenic character, but it was able to retain the areas of Janina and Preveza, which then constituted most of modern Ipiros. The arguments in favour of Turkish control of this area centred on their large Moslem minorities. The final treaty in this period was signed on 24 May 1881, although Greece was not a party to these arrangements.

The Greek authorities overplayed their hand in 1897 when they tried to force further concessions from Turkey in Kriti and on the continent. The European powers had to intervene to prevent a Turkish victory, and Greece was forced to cede 11 small areas which had particular strategic significance along its northern boundary to Turkey. The scale of Figure 1.1 does not allow these areas to be shown.

The next major territorial advance for Greece came in 1912 and 1913 in wars first with Turkey in alliance with Bulgaria and Serbia and then with Bulgaria in alliance with Serbia. These campaigns enabled Greece to move northwards to its present boundary and eastwards along the Macedonian coast as far as the Nestos River. In the Aegean Sea, Greece gained many Turkish islands, apart from Gokceada and Bozcaada, which Turkey retained, and the Dodecanese Islands, which had been occupied by Italy in 1912. Italy seized these islands from Turkey in April and May 1912 as part of its campaign against Turkey over control of Tripoli and Cyrenaica.

The rôle of Greece in World War I was rewarded with Bulgaria's coastlands on the northern shore of the Aegean Sea in western Thraki (Thrace) and the Turkish area of eastern Thraki as far east as Catalca within 20 miles of Istanbul. A large area of the Turkish mainland around Izmir (Smyrna) was placed under Greek control, and it was arranged that a plebiscite in five years could opt for union with Greece. The Treaty of Sevres, which conferred these gains on Greece, was never ratified, and the

Treaty of Lausanne on 24 July 1924 left Greece only with western Thraki. This dramatic change had been produced by the revival of a nationalist government in Turkey, agreements between that government and the Soviet Union and France, and by Greek military defeats at the hands of Turkish forces. Turkey was also helped by the unpopularity of King Constantine with the western powers because of his pro-German policy of 1915. The Treaty of Lausanne marked a retreat from the line marking the largest territorial extent of modern Greece and Turkey's boundary of 1914 along the Meric River was restored.

The final extension of Greece occurred in 1947 when Italy ceded the Dodecanese Islands and the island called Megisti, which Italy had obtained from France, in 1920.

In tracing the evolution of national boundaries there is no substitute for the treaties, protocols, agreements, and conventions which specify the formal arrangements between states. Sometimes these can be difficult to find, but there is now a fairly comprehensive range of publications dealing with this subject. For the period from 1648, which is 'classically regarded as the date of the foundation of the modern system of States' (Parry 1969, Vol. 1, p. 3), until 1919 Parry has edited a collection of treaties filling 231 volumes. From 1920 to the present many treaties are published in the *League of Nations Treaty Series* and its successor the *United Nations Treaty Series*. These collections contain only treaties lodged with these international organizations and therefore they are not comprehensive. One serious problem in interpreting treaties relates to the need to consult maps used by the negotiators and often published with the treaty. The collection by Parry does not include maps; the other two treaty series sometimes do. The importance of using maps which were contemporary at the time the treaty was signed turns on the facts that modern place names might be completely different and sometimes the maps were inaccurate and those inaccuracies were carried into the written description of the boundary. For example, the boundary between British Rhodesia and Portuguese Mozambique south of parallel 18°30' south was defined in the following terms on 11 June 1891:

. . . thence it follows the upper part of the eastern slope of the Manica plateau southwards to the centre of the main channel of the Sabi . . . (Brownlie 1979, p. 1119)

The demarcation team sent by both countries to fix this line could not agree on the location of the upper part of the eastern slope of the Manica plateau and the matter was referred to the arbitration of Senor Vigliani, an Italian senator. He handed down his decision on 30 January 1897 (The Geographer 1971, p. 2). The original negotiators can be excused for producing such an uncertain definition in view of the maps in the archives in London and Harare. It is quite clear that the maps and accompanying

cross-sections sent by officers in the field show the edge of the plateau as a prominent and apparently unmistakable feature.

Fortunately there are also regional guides to the literature and treaties dealing with the evolution of national boundaries. Nicholson (1954) and Paullin (1932) have provided detailed accounts of international boundaries in North America, and the atlas edited by Paullin contains several useful, large-scale coloured maps. Ireland (1938) has provided a comprehensive account of the stages by which boundaries in South America evolved before World War II. Brownlie (1979) has published an encyclopedia which records the boundary agreements determining the boundaries of Africa and includes clear maps of the present period. Brownlie does not provide the detailed background to boundary evolution which Ireland makes available and which is also included in the study of the evolution of boundaries in Asia by Prescott (1975). Documents connected with national claims in Antarctica are published in the collection prepared by Bush (1982) and the background to the various agreements and proclamations is found in the analysis by Prescott (1984).

There is no equivalent work for Europe or for Central America. Hertslet (1875–91) has edited a useful collection of boundary treaties for Europe, including several indispensable maps. Fortunately most of the gaps in the literature have been filled by individual studies produced by The Geographer of the State Department of the United States of America. Under the general title of *International boundary study* this office has now issued nearly 200 separate analyses.

Contemporary international conflict and co-operation

Boundaries represent the line of physical contact between states and afford opportunities for co-operation and discord. Lord Curzon of Kedleston, who was a Viceroy of India, summed up this situation in words that have often been quoted:

Frontiers are indeed the razor's edge on which hang suspended the modern issues of war and peace. (Curzon 1907, p. 7)

Most commentators use these words to introduce discussion of boundary conflicts, but Curzon's reference to peace should not be forgotten. Regrettably, newspapers and radio and television bulletins seem to regard boundary disputes as more worthy of attention than co-operation to solve boundary issues. In fact both conflict and co-operation over boundaries are important subjects for study. Indeed a survey of the volumes in the *United Nations Treaty Series* (United Nations 1945–) reveals dozens of treaties dealing with co-operation between states along common boundaries, as the following examples show.

On 23 October 1950 Belgium and the Netherlands defined an underground mining boundary in the vicinity of the Meuse which was

independent of their boundary on the surface. This was done to reduce to a minimum the amount of exploitable coal which had to be left in the ground (United Nations 1964, Vol. 507, pp. 207–2). Austria and Yugoslavia agreed on 19 March 1953 to create frontier strips on each side of their common boundary. These strips consisted of 195 Austrian communes and 41 political communes in Yugoslavia. Citizens living within these zones were entitled to cross the boundary without the usual formalities if they owned property which straddled the boundary or if they were concerned with herding livestock or forestry on the opposite side of the line. This agreement specified 34 crossing points which could be used for this purpose (United Nations 1963, Vol. 467, pp. 380–427).

On 17 May 1963 Burma and Thailand set up a joint committee at ministerial level to confer and agree on measures to strengthen border security, to solve specific boundary problems, and to devise measures to promote economic and cultural co-operation (United Nations 1963, Vol. 468, pp. 320–9). Later, on 30 November 1963, Romania and Yugoslavia signed an agreement dealing with power generation and improved navigation on the River Danube between Sip and Gura Vail in the vicinity of the Iron Gate. This defile in the Danube valley was made navigable in the 1890s, and the new agreement provided for the construction of two locks, two power plants, a spillway dam, and roads and railways (United Nations 1964, Vol. 512, pp. 42–66).

On 5 November 1977 India and Bangladesh signed an agreement which allocated water in the Ganges to each country (*Keesing's Contemporary Archives* 1978, p. 28763). This agreement settled a dispute which had arisen when India built the Farakka Barrage to divert water into the Hooghly River so that sediments could be flushed into the Bay of Bengal. The agreement defined a period of low flow in the Ganges River from January to May. This period was then divided into intervals of ten days and the amount which each side could draw in each interval was fixed. For part of this dry period the amount discharged into the Hooghly River would be less than 40 000 cubic feet per second which is considered the minimum flow necessary to prevent silt accumulation in the port of Calcutta.

In his study of claims to territory and their importance in international affairs, Hill (1976, p. 3) noted that boundary disputes have been conspicuous amongst the causes of war. Recent border wars in Asia can be traced back many years to boundary agreements which later proved unsatisfactory. The 1962 war between China and India centred on different interpretations of the McMahon Line in the eastern Himalayas. This line was settled in an agreement reached between Britain and Tibet in 1914 and was named after the British chief delegate. The war that began in September 1980 between Iraq and Iran was caused by Iraq's desire to regain control of the Shatt al Arab. This river had been awarded to the

Ottoman Empire by Persia in the second Treaty of Erzurum, dated 31 May 1847. Iraq had ceded half the river to Iran in various treaties dated 1914, 1937, and 1975.

Boundary disputes which last for a long time sometimes serve as a barometer of the condition of relations between countries. Periods of discord are often marked by bellicose statements about the dispute and sometimes the mobilization of reserves or the conduct of manoeuvres in the borderland. Contrasting periods of harmony are characterized by an apparent disinterest in the dispute or by political assurances that the dispute will not be allowed to stand in the way of improved relations. Relations between Argentina and Chile have passed through such phases on a number of occasions since 23 July 1881 when the two countries signed a treaty which defined their boundary along the Andes to the tip of the continent. The dispute appeared to be finally solved on 2 May 1985 when a treaty was ratified at the Vatican by the two countries. This treaty solved the final problem, which concerned islands in the Beagle Channel. The third article of the 1881 agreement included the following phrase:

. . . and to Chile shall belong all the islands to the south of the Beagle Channel up to Cape Horn. (Lovering & Prescott 1979, p. 179)

This definition created problems because there were some large islands *in* the Beagle Channel which Argentina claimed were not covered by the phrase 'south of the Beagle Channel'. The three main islands are called Picton, Lennox, and Nueva. By the 1985 agreement Chile retained control of these islands, but they were discounted when offshore claims by each country were defined.

Soon after Lesotho gained independence in October 1966 it began to demand certain areas of the Orange Free State in South Africa. The claim was based chiefly on the ground that this land had once belonged to the Basuto Kingdom before White settlers moved into the area in the 1820s. There was sporadic conflict between settlers and tribesmen and the intervention of British authority settled a boundary which included areas in Basutoland which had previously lain beyond the writ of King Moshweshwe. After the creation of the Orange Free State in 1854 the new Republic tried to negotiate with the Basuto king to settle the matter permanently. These efforts failed and in three wars, in 1858, 1865–6, and 1867, the matter was brought to a head. Britain had to intervene in the last war to prevent the complete subjection of the Basuto Kingdom, and the war was formally ended when the second Treaty of Aliwal North was signed on 12 February 1869. This treaty fixed the boundary in its present location. The present Lesotho claim is based on the argument that the 1869 treaty was forced on the Basuto nation in an unequal war after connivance between the Boers and the British (Africa Research 1979, p. 5220).

Boundary disputes are not only associated with national boundaries that

have existed for a long time; some modern lines have also created difficulties. For example, the Indian Independence Act of 18 July 1947 awarded Sind Province to Pakistan. This meant that the southern boundary of that province became the international boundary between India and Pakistan. Unfortunately these two countries disagreed over the course of that line through the Great Rann of Kutch, which consists of an extensive salt marsh. Fighting between these two countries in April 1965 led to a cease-fire and an agreement to submit the question to arbitration. The appointed tribunal handed down its decision on 19 February 1968 and defined a boundary which gave each side part of what it had claimed (Prescott *et al.* 1977, p. 40).

On Christmas Day 1985 fighting between forces belonging to Burkina Faso and Mali caused 300 casualties. This was another battle in a dispute which began in September 1960 when the two countries became independent. They were separated by a French colonial boundary which was elevated to international status. Unfortunately both sides claimed the Agacher Strip, which measures about 100 miles by 15 miles and is reputed to contain valuable mineral deposits (Africa Research 1986, p. 7888).

The factors that encourage co-operation or conflict along international boundaries and the consequences that follow from policies connected with these two activities involve many aspects of national life. These aspects include strategy, administration, economics, politics, and culture. No single discipline deals exclusively with this field of scholarship and the most comprehensive understanding of any particular situation will usually be found by reading and comparing separate studies by lawyers, political scientists, economists, geographers, and historians.

Generalizations about international boundaries

Attempts to produce a set of reliable theories about international boundaries have failed. Attempts to devise a set of procedures by which boundaries can be studied have been successful.

The German geographer Ratzel made a determined effort to produce a set of laws which would enable the behaviour of states in respect of boundaries to be predicted. Ratzel believed that each state had an idea of the possible limits of its territorial dominion and he called this idea 'space conception'. This notion appears to be similar to the concept of *les limites naturelles* (natural boundaries) which Pounds (1951, 1954) explored in respect of France. Pounds established that for much of France's history after the 16th century successive rulers regarded France's desirable boundaries as coinciding with the sea, the Alpine watershed, the Pyrenees, and the Rhine.

Ratzel's view on the space conception of states followed logically from his belief that the state was like a living organism which grew and

decayed. The boundary and the adjacent territory, which is called the border, formed the epidermis of this organism and provided protection and allowed exchanges to occur. So for Ratzel the border was a dynamic feature and when it was fixed in position we were witnessing a temporary halt in political expansion. He enunciated two laws of territorial growth:

The law of the evolution of boundaries can be defined as a striving towards simplification and in this simplification is contained a shortening of borders. (Ratzel 1897, p. 555)

In accordance with the general law of growth of historical spatial phenomena the borders of the larger areas embrace the borders of the smaller one. (Ratzel 1897, p. 557)

Evidence for devising these rules can be found in the evolution of Germany by an amalgamation of small marches, kingdoms, and principalities. Many examples involving other countries can also be found in the collection of treaties prepared by Hertslet (1875–91). For example, by a treaty dated 14 April 1816 Austria and Bavaria exchanged territories in their borderlands. Bavaria ceded parts of Hausruckviertel and Innviertel to Austria and in return received parts of the Department of Mount Tonnerre and the city and fortress of Landau (Hertslet 1875, pp. 434–43). Ratzel would also have found support for his laws in the procedures by which Britain, Belgium, Germany, and France were acquiring colonies in Africa.

Ratzel also made strong assertions about the nature of borders.

Political balance [between countries] is to a large extent dependent on the [characteristics of] borders between them. (Ratzel 1897, p. 584)

We have seen how growth and decline of a region not only find expression in the areal form and protective measures of the border but also in a way prepare and foreshadow themselves therein. (Ratzel 1897, p. 605)

This view that the border was the area within which the growth and decline of the state was organized and became evident was taken up by students of *Geopolitik* thirty years later. *Geopolitik* was the name given to the school of political geography established by Major-General Haushofer who emphasized the rôle of geography in creating policies which would make the Germany of the 1920s strong again (Gyorgy 1944). Haushofer proposed that a cultural boundary should be established around a population which had a high degree of ethnic homogeneity and that beyond this cultural boundary there should be a military boundary which would prevent a surprise attack on the cultural homeland. When Haushofer (1927) classified boundaries he did so into categories labelled 'attack', 'defence', 'growth', and 'decay'.

Spykman, an American political scientist, also gave geography a very important rôle in the development of national policies and the conduct of international relations. In a paper dealing with geographical objectives and foreign policy the following assertion was made:

Boundary changes will be indications of a shift in the balance of forces, caused either by an increase in driving force on one side of the frontier [boundary] or by a decrease in resistance on the other. (Spykman & Rollins 1939, p. 392)

This view of boundaries as temporary lines where opposed power of neighbouring states is neutralized also found favour with Ancel. In writing of boundaries as lines of power equilibrium this French political geographer referred to international boundaries as political isobars (Ancel 1938). This is not a useful analogy since an isobar links points experiencing identical air pressure; on one side the air pressure will be higher and on the other side it will be lower. However, a more serious criticism of Ratzel's original concept and its modern embellishments is that since 1945 most changes in the balance of power between adjoining states have not been accompanied by any changes in the position of international boundaries. For example, the domination of Vietnam over Laos and Cambodia in the 1980s has not been accompanied by any boundary changes. The internal problems of Iraq and Iran and their destructive war against each other has not been accompanied by any territorial losses to their neighbours such as the Soviet Union, Turkey, or Syria.

It is also possible to demonstrate that several boundary changes in the 20th century resulted from causes other than changes in the relative strengths of countries. For example, Britain made territorial concessions to the Italian colonies of Libya and Somalia after World War I in return for Italian participation in the war. On 16 February 1963 Mali and Mauritania agreed to modifications to the colonial line they had inherited from France three years earlier in order to make it correspond more closely to the geographical realities of this desert region. At the end of the last century many colonial boundaries were defined as straight lines when they were first drawn because the area they traversed was imperfectly known. Later explorations revealed situations where the two parties could obtain mutual benefits by exchanging the straight line for one which followed an irregular course related to the political and geographical realities of the region.

Of course there will always be cases where some powerful states are able to seize and hold the territory of a weaker neighbour. Thus Indonesia incorporated the territory of Portuguese Timor in 1975 and for the past decade Libya has occupied the Aouzou strip of northern Chad. Fortunately, such situations are rare compared with the multitude of cases where international boundaries have been fixed in location for a very long

time, even though they separate states with wide differences in military and economic strength.

Although scholars have failed in their efforts to produce laws or even guidelines by which national behaviour in respect of boundaries can be predicted with confidence, they have succeeded in identifying reliable procedures by which the evolution of boundaries and boundary disputes can be studied.

A French lawyer called Lapradelle and an American geographer called Jones defined a series of stages through which ideal boundaries would pass in their history. In each case these major studies, which were published 17 years apart, do not bear the impress of the period in which they were written. This characteristic sets them apart from studies by Ratzel, Haushofer, Spykman, and Ancel.

Lapradelle identified three stages in the evolution of a boundary which he called 'preparation', 'decision', and 'execution'. The equivalent stages described by Jones (1945) are called 'allocation', 'delimitation', and 'demarcation'.

The processes of preparation precede true delimitation. The problem of the boundary's location is debated first at the political level then on the technical level. The question is, in general, of determining, without complete territorial debate, the principal alignment which the boundary will follow. . . . The decision involves the description of the boundary or delimitation The execution consists of marking on the ground the boundary which has been described and adopted, an operation which carries the name demarcation. (Lapradelle 1928, p. 73)

In adopting and embellishing this pioneer proposal Jones added the final stage of administration which describes the maintenance of the boundary monuments, cleared lines, and fences.

Neither of these authors insisted that all boundaries would pass through each stage. In some cases the first boundary which allocates territory might be a straight line and this line is then demarcated either because there is no more suitable line or because agreement cannot be reached on modifications. In other cases the terrain is so well known it is possible to proceed directly to delimitation as the first stage. This situation was encountered often in the territorial arrangements which followed World Wars I and II. On many occasions boundaries which were delimited were not demarcated or the original demarcation was not maintained, and the location of the boundary became blurred as forests grew over cleared lines and peasants raided boundary monuments for metal pipes and building blocks.

In a series of perceptive comments Jones pointed to the reasons why the search for laws about boundaries was unproductive:

Each boundary is almost unique and therefore many generalizations are of doubtful validity. (Jones 1945, p. vi)

The process of boundary-making is smoothed by considering each boundary as a special case with individuality more pronounced than resemblance to a theoretical type. (Jones, 1945, p. 11)

It is probably this fact which has prevented those devoted to the quantification of political and social data from identifying the laws or consistencies which eluded Ratzel and others. For example, Boggs (1940) tried to devise an index of the interruptive quality of boundaries by calculating the continental ratios of boundary length and continental area. He then accepted that pressure against the boundary was a direct function of national population and obtained another index by multiplying the interruptive index by the value for the population density of the continent. Hinks (1940) demonstrated the unreliability of these calculations as a basis for serious continental comparisons. Dorion (1963) had no more success than Boggs in trying to devise an index of sinuosity in his study of the boundaries of Quebec and Newfoundland.

The host of case studies about boundary disputes by lawyers such as Johnson (1966), who wrote about the Columbia River between Canada and the United States, by historians such as Lamb (1966), who analysed the McMahan Line, by political scientists such as Widstrand (1969), who considered African boundary problems, and by geographers such as Glassner (1970), who studied the dispute over the River Lauca between Bolivia and Chile, have enabled the essential elements of boundary disputes to be identified. Analyses of such matters should focus on the cause of the dispute, the reason for its development at a particular time, the aims of the countries concerned, the arguments used to justify particular actions, and the results which follow from the settlement or continuation of the dispute.

Borders

One of the special contributions which geographers have made is to study the boundary in its territorial context. It was noted earlier that the adjacent areas which fringe the boundary are called the 'border'. This is an old concept which Ratzel expressed neatly in the following sentence:

The border fringe is the reality and the border line is the abstraction thereof. (Ratzel 1897, p. 538)

Fawcett (1918) was mainly concerned with the zonal character of frontiers and borders and stressed their transitional nature.

This emphasis provided part of the basis for Lapradelle's work. He

called the border *le voisinage* and he distinguished three parts of this region on the basis of law. The central area immediately adjacent to the boundary was called *le territoire limitrophe*, which is the zone where international law may apply. The word *limitrophe* is difficult to translate because it is a technical term for land set aside to support troops in the border. The phrase *le territoire limitrophe* may be translated as 'neighbouring territory' or 'adjacent territory'. The other two parts flanked this central region and are subject only to the internal laws of the states. Lapradelle called such zones *les frontières* (the frontiers). In his conclusion he stressed the need to study the legal realities of the border and to avoid the belief that the entire state is subject to uniform internal boundaries right up to the boundary.

It is not surprising that political geographers should have been at the forefront of border studies. Such a perspective is traditional as shown by the way geomorphologists study rivers in relation to the run-off provided by the catchment and to the structure of the basin drained by the river whereas economic geographers examine the traffic generated in the region served by a railway.

Ritter & Hajdu (1982) have provided an account of the influence of the boundary between East and West Germany on the surrounding region. After tracing the successive stages in the demarcation of this boundary after World War II, a statistical analysis shows the decline in economic and human links between the two new states. Districts which had previously been located near the heart of Germany between the wars now had a peripheral location which added to the disadvantage of interruption in previous connections and patterns of circulation:

Major cities such as Lubeck lost most of their traditional hinterland and saw their commercial functions seriously impaired. The rural district of Luchow-Dannenberg lost its link with its higher order centre, and the city of Hof found that the vertical integration of its textile industry with plants in Saxony ceased to exist. A loss of administrative functions, employment opportunities and population became a general feature of these peripheral districts. (Ritter & Hajdu 1982, p. 257)

The terminology of land boundaries

Over many years some words have developed a specific connotation in respect of frontiers and land boundaries.

Boundary refers to a line, but *frontier* refers to a zone. The terms *allocation*, *delimitation*, and *demarcation* are used in the sense outlined by Jones (1945). *Allocation* means the initial political division of territory between two states. *Delimitation* means the selection of a boundary site and its definition. *Demarcation* refers to the construction of the boundary in the landscape. *Borderland* refers to the transition zone within which the

boundary lies; it corresponds to Lapradelle's *voisinage*. It has not been found necessary for geographical purposes to distinguish *le territoire limitrophe* from the borderland. Lastly, there are the sequential terms proposed 50 years ago by Hartshorne (1936). These terms describe the relationship between the boundary and the landscape through which it was drawn. An *antecedent* boundary was drawn before the development of most of the features of the cultural landscape, and if a boundary was drawn through an uninhabited area it was called a *pioneer* boundary. *Subsequent* boundaries were drawn after the development of the cultural landscape. If the boundary coincided with some physical or cultural divide, it was described as *consequent*. If, however, the boundary was not drawn within such a feature, it was described as *superimposed*, for which the synonym *discordant* was occasionally used. A *relict* boundary is one which has been abandoned but is still marked by differences in the landscape which developed during its lifetime.

Maritime boundaries

So long as there have been states with access to the sea, governments have had a proper interest in the adjacent coastal waters. In tracing the evolution of maritime claims, it becomes evident that there were three basic problems to be solved. The first concerned the establishment of a legal concept empowering states to exercise jurisdiction over parts of the sea. The second involved deciding how much of the seas and seabed would be legally appropriated by states. The third concerned accurately defining the claimed zones.

The legal concept of maritime jurisdiction

Fenn (1926), who identified the four main contributors to the establishment of the concept of maritime jurisdiction as a doctrine of international law, has provided the most detailed analysis of this question. A careful reading of his arguments and sources does not reveal that geography played an important rôle, although the chief contributions were made by lawyers living around the Mediterranean or the North Seas.

The first important step in the evolution of this concept was taken by Roman glossators who determined that the emperor had the right to punish wrongdoers at sea in precisely the same way that he punished them on land. The application of right was primarily concerned with the suppression of piracy. Azo, who lived at the beginning of the 13th century, advanced the concept by establishing that a private right could be granted by the sovereign either as a privilege or as a result of long and uninterrupted use. These rights included sole use of shallow fishing

grounds in bays, control over salt deposits in tidal marshes, and exemption from port dues.

Bartolus, an Italian jurist who lived in the first half of the 14th century, developed the concept by asserting successfully that countries own islands within 100 nautical miles of the coast. Gentilis introduced the final, essential change in the 16th century when he persuasively argued that coastal waters are a continuation of the territory of the state whose shores they adjoin. It therefore followed that the territorial rights which the sovereign possessed on land extended over the coastal waters.

Fenn has no doubt that 'after Gentilis it is literally correct to speak of territorial waters in international law' (Fenn 1926, p. 478). He also noted that by solving the first problem Gentilis had cleared the way for a resolution of the remaining problems:

There remains a problem of placing a limit on these [territorial] waters. The theory, however, is complete with Gentilis. The delimitation of the territorial waters is a mere matter of detail and becomes a problem for statecraft and not for lawyers to settle. (Fenn 1926, p. 481)

The detail to which Fenn referred has proved harder to settle than the theory on which it is based, as the following sections show.

The extent of national maritime claims

There did seem a time in the 19th century when the question of how much of the sea fell under national jurisdiction had been answered. All the major naval powers claimed territorial seas 3 nautical miles wide and they refused to recognize wider claims by other countries such as Spain. When Russia proclaimed waters 12 nautical miles wide in 1909 there was no expectation that such claims would become general, but that is what happened in the period after 1945.

The process by which claims to zones 3 nautical miles wide became general in the 19th century has been unravelled by Baty (1928), Walker (1945), and Kent (1954). The twin characteristics of claims to a continuous belt of territorial waters 3 nautical miles wide had different origins. The concept of a continuous belt of territorial waters was born in Scandinavia; the specific distance stemmed from the rule related to the range of cannon, which was common in the Mediterranean Sea and the southern reaches of the North Sea.

Denmark played an important part in establishing the concept of a continuous zone of territorial waters. Following the rediscovery of Greenland in 1585, Denmark, which had acquired Iceland and Norway in 1381, completed its control over the shores of the northern Atlantic Ocean. This encouraged the Danish authorities to assert a claim to sovereignty over all this oceanic region, and it willingly gave licences to

aliens to navigate and fish in these waters. However, these licences did not apply to a zone of coastal waters adjacent to the coast. For example, in 1598 a Danish decree reserved a belt of waters 2 leagues wide around Iceland for the exclusive use of Danish fishermen. A Danish league measures 4 nautical miles.

These unilateral claims had to be adjusted according to the strengths of countries which contested them and Denmark was forced by Holland, Britain, France, and Russia to reduce this claim at various times. In 1743 Russia managed to force a reduction in the claim to 1 league. The governor of Finnmark was fearful that Russia might close its land boundary with Norway and prevent trade and the transhumance movement of the reindeer herds of Lapps; to placate the Russian authorities he granted Russian fishermen access to waters more than 1 league from the coast (Meyer 1937, p. 500). The Danes charged a small fee, so that it could be argued that the wider claim had not been abandoned, but in 1745 Denmark announced a general reduction of its claim to 1 league. Kent (1954, p. 545) has suggested that this action was taken on economic grounds because the narrower zone offered less sanctuary to alien traders, who stayed away, and at the same time allowed the more frequent capture of prizes which were sold in Danish ports to the benefit of national revenue.

Fulton (1911, p. 156) has traced the earliest mention of the cannon shot rule to 1610 during a fishing dispute between Britain and the Netherlands. Bynkershoek is generally credited with introducing the concept of territorial waters extending as far as a cannon's range into the literature of international law in 1703. However, Walker (1945, pp. 211–18) has shown conclusively that the rule had been applied by various countries, including France and the Netherlands, throughout most of the 17th century. Bynkershoek judged that states could possess the coastal seas which they could command from their shores:

Therefore it evidently seems more just that the power of the land [over the sea] be extended to that point where missiles are exploded . . . the power of the land [over the sea] is bounded where the strength of arms is bounded; for this as we have said guards possession. (Cited in Balch 1912, p. 414)

Bynkershoek formulated this rule because he regarded claims to the sea within sight of land as being too imprecise. Unfortunately his regulation is also open to conflicting interpretations. The cannon shot rule could apply only to the field of fire of actual pieces mounted on the shore and the claim would vary with the type of cannon, its height above the sea, the charge used, and the weight of ball. Under this interpretation if there was no cannon mounted on the shore there would be no claim to territorial waters and prizes could be taken up to shoal water. On the other hand, the

cannon shot rule could be interpreted to apply to the waters commanded by a line of imaginary guns of known range mounted along the entire coast of the country. There is evidence in the writings of Walker (1945) and Kent (1954) that both these views were held. The specific interpretation operated in favour of those countries which were strong and well armed and which had a high density of ports along their coast; Britain, France, and the Netherlands favoured this application of the rule. The general interpretation made all states equal whatever the condition and number of their fortresses and whatever the nature of their coastlines. It was probably this conclusion which led Galiani in 1782 to propose that instead of waiting to see what guns a neutral state might mount along its coast a belt of 3 nautical miles be fixed as the zone of territorial waters (Galiani 1782).

It is through Galiani that the concept of a continuous zone used in Scandinavia was finally united with the cannon-shot rule of the Mediterranean region. His practical suggestion was quickly accepted by diplomats. When Britain and France engaged in war in 1793, President Washington of the United States declared that his country would insist on neutrality within 3 nautical miles of its coasts. This position was justified to the British authorities in the following terms by Secretary of State Jefferson:

The greatest distance to which any respectable assent amongst nations has at any time been given is the extent of human sight, estimated at upwards of twenty miles, and the smallest distance I believe, claimed by any nation whatever, is the utmost range of a cannon ball, usually stated at one sea league. (Crocker 1919, p. 636)

The French also accepted Galiani's proposal quickly, for on 25 May 1795 a treaty was signed with Tunis which stipulated that the neutral zone was measured as the cannon shot whether the guns were actually in position or not. It is impossible to disagree with the American Ambassador in Paris who informed the French government in 1864 that 'no other rule than the three mile rule was known or recognized as a principle of international law' (Crocker 1919, pp. 659-60).

Most countries before 1945 claimed only a single maritime zone. Additional fishing zones were claimed off ten territories. Five of them were the independent states of Argentina, Brazil, Colombia, Ecuador, and Uruguay and the others were the colonial territories of Cambodia, Lebanon, Morocco, Palestine, and Vietnam. None of these claims exceeded 12 nautical miles. In some cases conservation zones were declared to preserve seal populations. For example, in 1893 regulations were proclaimed to stop British and American citizens from capturing or pursuing fur seals within 60 nautical miles of the Pribilof Islands in the Bering Sea. Unfortunately the rules did not apply to Japanese fishermen