A Typology of Borders
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1. Introduction

It has been considered politically correct to assert, during the last thirty years or so, that with the expansion of means of communications and transportation, and an all-pervading economic globalisation, the importance of borders has gradually receded. This, however, is not true. Quite the contrary, borders are important as ever in the fabric of international relations. This point is illustrated by the fact that border issues continue to be brought before the International Court of Justice and arbitral tribunals, and that international lawyers still write about them, witness a book on the boundaries of Switzerland which is about to be published. Who would have thought that there remained interesting things to say about the boundaries of an old country located in the heartland of Europe?

The objective of this presentation is to establish an inventory of the different types of borders currently in use and of the functions they perform. To attempt a very general definition, “borders”, as a general category, are “means of identifying, directly or indirectly, spaces to which given legal rules or regimes, such as State sovereignty, are to be applied”.

This is a wide and abstract definition. It includes, for instance, the determination of spaces to which certain customary or treaty rules are intended to apply; for instance, the lines separating air space from outer space, or those identifying the spatial scope of the Antarctic treaties – the 60th parallel of Southern latitude, or the “Antarctic Convergence”, that is, the line formed by the points where the icy waters of the Antarctic meet with warmer waters coming from the North. The definition also covers borders within borders, for example the lines separating administrative divisions within the same State. The present report will, however, focus on the borders defining the spatial jurisdiction of States, i.e. between spaces appertaining to different States, or the same, or between national and international spaces. Within these parameters, the essence of this presentation will be devoted to drawing up an inventory of the different types of international borders.

2. “Boundaries” and “Limits”

An international “boundary” in the strict sense may be defined as a line dividing land territory over which States exercise full territorial sovereignty.

By contrast, the expression “limits” is generally used – or should be used – to mean dividing lines between spaces in which States do not exercise full territorial jurisdiction, such
as those separating maritime spaces appertaining to the same State or different States, or separating such national spaces from international areas: the outer limit of the territorial sea of a State, for example, which divides that space from the exclusive economic zone of that same State; or the outer limits of the economic zone or of the continental shelf, which mark the end of coastal State jurisdiction and the beginning of the high seas or of the international seabed area. As noted already, the term “limit” also covers lines allocating maritime spaces to different States, for example the continental shelf of countries adjacent to each other. The use of that expression, rather than the term “boundaries”, in that connexion has the advantage of taking into account the fact that maritime spaces are attributed to coastal States according to rules different from those governing the acquisition of territory; it also shows that the spaces so divided are not placed under the coastal States’ full sovereignty (this being true even of the territorial sea, which is governed by a regime of innocent passage for foreign vessels).

This distinction between (land) boundaries and (maritime) limits is not appreciated by all, and references to maritime “boundaries” are frequent. This terminological confusion may reveal a regrettable but real tendency on the part of coastal States to favour creeping jurisdiction by treating their maritime spaces as if they were all subject to their full jurisdiction.

A last issue to be considered under the present heading is whether the borders drawn on or with reference to watercourses – rivers and lakes – belong to the category of “limits” or to that of “boundaries”. Because they run on water, one might be tempted to view them as “limits”. This would be doubly wrong. First, these lines are drawn, essentially, pursuant to the rules governing sovereignty over land (title, effective exercise of State powers) rather than to those applicable to marine spaces (which are accessories to land territory). Second, the spaces they divide up are areas where the States concerned exercise full sovereignty.

3. “Boundaries” and “Frontiers”

Historically the function of boundaries was not only that of separating land territory belonging to different communities; they also served to ensure the security of each community. For that reason, they consisted in spaces rather than lines: mountain ranges, watercourses, swamps, deserts, glaciers, etc., these features being called “frontiers” to differentiate them from (linear) boundaries (in French: “frontières-lignes” and “frontières-espaces”, respectively). The practice of using spaces rather than lines as borders survived up to the XIXth century but is now nearly abandoned. Some spatial boundaries, i.e. “frontiers”, may still exist, but no new ones are being created. Today, with economic and demographic
pressures, the surface of the globe is being carved up to the last morsel, and borders tend to be linear.

4. Single and Fragmented Borders

Land boundaries – including those connected with watercourses – are projected vertically into the air space and the soil and subsoil. In other words, the territory, as the space in which a State exercises sovereignty, is a volume rather than a surface. The same may be said of the lines dividing the territorial sea and, to a lesser extent, of those separating the exclusive economic zones or continental shelf of States whose coasts are opposite each other or adjacent.

These borders do not always operate a single division. A political boundary may, for example, diverge from a line determining resource jurisdiction. A classical example is provided by the guano deposits in the Acatama desert which straddle the political boundary between Chile and Bolivia on the 24th parallel of Southern latitude. Pursuant to Article 2 of the Delimitation Treaty of 10 August 1866, the proceeds from the exploitation of the deposit in a zone extending from the 23rd to the 25th parallel, as well as the export duties collected, shall be divided equally between the two countries. This means that the political boundary is divorced from the limits drawn in matters of resource jurisdiction.

It is possible, in the presence of cross-boundary mineral deposits, to divide the proceeds proportionally to the footage located on each side of the political boundary. In that case, there will be a single boundary. By contrast, it is also possible to entrust exploitation to only one of them, which means, again, that the political boundary will not coincide with the line determining resource jurisdiction.

The multiplicity of boundaries may have other causes, as is illustrated by the status of the French-Swiss airport of Basel-Mulhouse. Governed by a bilateral convention concluded on 4 July 1949, that airport was built on French territory since no land was available on the Swiss side. Though belonging to the French public domain, the airport is partly subject to Swiss administration and jurisdiction. Access from the Swiss side is via a fenced corridor of several kilometres through French territory, but France exercises no police or customs control over passengers or goods going to or coming from Switzerland. Thus the political boundary deviates from a functional limit used to allocate jurisdiction within the airport.

A multiplication of limits can also occur in marine space. As on land, the exploitation of a resource straddling a maritime limit may be entrusted to a single State. Another hypothesis is that of a delimitation of exclusive economic zones which does not coincide with the
delimitation of the continental shelf in the same area. This scenario is quite possible since, although the delimitation rules of Articles 74 and 83 of the Law of the Sea Convention are practically identical, the equities involved may not be. There is, to be sure, a tendency toward single boundaries; but this does not guarantee such boundaries.

Yet another possibility arises in situations where works such as dams and bridges span contiguous international watercourses (see illustration 1). It may well be that, in such situations, the boundary dividing the construction is a vertical projection of the river boundary, in which case there is a single boundary. But the construction may also be divided by a line – half-way from each of its ends, for instance – which deviates from the boundary in the river, or be entirely attributed to one of the riparian States. Again this will lead to a fragmented boundary, with the added inconvenience that there seems to be no rule on how to connect the two lines or on how to determine the boundary in the superjacent airspace (illustration 1).

5. “Natural” v. “Artificial” Boundaries

There has been – and still is – a belief that “natural” boundaries are “good”, while “artificial” boundaries are “bad”. Inasmuch as it is professed for linear boundaries --frontiers, i.e. spatial boundaries, are always natural in character --, that belief must be relativised.

Whoever advocates natural linear boundaries may - unwillingly or willingly – support expansionist territorial doctrines based on unproven concepts and on features the objectivity of which is apparent only. One of those concepts is the notion of contiguity (or continuity) pursuant to which a State would have sovereignty over a space adjacent to its territory, simply because it is adjacent to it. Another unproven concept is the Arctic and Antarctic sector theory under which the relative proximity of a State’s coastal frontage to Arctic or Antarctic areas would give that State title to a sector of such areas, the sector being a triangle based on the coastal frontage, the meridians running through the frontage’s terminal points serving as the two remaining sides of the triangle, and the North or South pole as its top.

There is no rule of international law under which “natural” boundaries enjoy priority over “artificial” ones. Indeed, there may be nothing objective or even certain about them. How is one to decide “objectively” whether, for example, a valley enclosed between two mountain ranges belonging to different States appertains to one State rather than the other? And how should one make an “objective” choice where several “natural” boundaries are available?

Regarding their certainty, one can say that “natural” boundaries may consist of or depend on a large number of different elements: a tree, a forest or a source; a mountain crest or the
foot of a mountain range; a watershed line, or a line drawn at the bottom of a valley; the main
channel of a river (thalweg) or its shoreline; or a marine trough. The “certainty” of these
elements may be relative, however. Firstly, “frontiers”, i.e. natural boundaries consisting of
spaces, watercourses for instance, remain indeterminate as long as no boundary lines are
traced within them. Doubts may arise even with regard to linear natural boundaries: the
identity of the source or tree referred to may be difficult to establish. And what about a
boundary to be formed by a crest line if the border area is located in a mountainous zone of
parallel and discontinuous mountain ranges? Another factor of uncertainty lies in the
commonly made assumption that the highest crest of a mountain range corresponds to the
watershed line. That this is not necessarily so was shown by an arbitral award of 20
November 1902 on the boundary separating Chile from Argentina in the Andes. The
applicable treaty provision established the boundary “at the highest crests of the ranges
forming the watershed line”. This definition proved unworkable because, as a result of
erosion, the highest crest had gradually moved away from the watershed line. In the end, the
arbitrator drew a transactional boundary, a large part of which followed neither line.

The watershed line is generally favoured by practitioners. This was the case when, in
1904, it came to define the boundary between Siam and Cambodia in the Eastern part of the
Dang Rek range. The watershed line is selected because it offers some degree of certainty
and does not divide up hydrographic basins. But even that line may generate problems. It
may cut across grazing grounds used in common by populations on both sides. Boundary
lakes, glaciers or swamps may empty on both sides, making it impossible to identify the
watershed line. The watershed on the surface may deviate from that separating the ground
waters; and there may be more than one watershed line. It pays to be very precise even when
defining boundaries which follow watershed lines.

The same kind of care is required when dealing with other water-related boundaries. If
such boundaries are to run along the shore of a watercourse, it may be useful to indicate
whether what is meant is the high- or low-water line, or an average line. Uncertainties may
also arise when the boundary is to follow the thalweg of the watercourse. The older treaties
simply do not define the notion of thalweg. Newer agreements rely on either the line formed
by a succession of the deepest points in the riverbed, that is, the bottom of the “valley” (thal)
of that bed (i.e. the contrary of a crest line), or on the river’s main channel used for
downstream navigation. If the second option is retained, the boundary will be formed by a
space within which a dividing line – usually the median line of the channel – will have to be
drawn. While the channel as such may be characterised as a frontier (i.e., a boundary space), the median line dividing it will be an (artificial) linear boundary.

A well-known feature of “natural” boundaries is that their environment is subject to natural or man-made changes. A good example is provided by the “migrations” of the Rio Grande in an area where its axis forms the boundary between Mexico and the United States (see illustration 2). There had been both gradual (alluvion/erosion) and sudden (avulsion) natural changes displacing the river bed. In the North of the new bed, a territory named Chamizal was accumulated (graph 2). Interpreting the relevant treaties, the Mixed Boundary Commission constituted by the two countries, in an award made on 15 June 1911, found that while gradual changes had the effect of moving the international boundary, sudden and violent natural changes did not. Whatever one may think of this alleged rule, derived from Roman law, it is not one commonly agreed to in international law, and the US rejected the award, with the result that the boundary in that area remained unsettled until an agreement between the two countries put an end to the dispute in 1963.

The question discussed is of considerable importance. If the river boundary remains where it was, it may transform itself into a boundary on land and one of the riparian States may lose access to the watercourse. If the boundary moves, the river will continue to form the boundary which, however, deprives it of the stability boundaries ought to have. All these elements go to show that “natural” boundaries do not deserve the praise heaped on them: often they are neither precise nor permanent. This makes it necessary to turn briefly to man-made boundaries.

A first category of man-made borders are referred to as anthropo-geographical boundaries, and are widely regarded as attractive. No one will deny that cultural, ethnic, linguistic or religious unity is desirable within a State and fosters its cohesion. But borders based on such elements are difficult to identify; moreover, they may not coincide. As was shown during the process of creating the new canton of Jura in Switzerland, confessional limits, for instance, may depart from linguistic ones. Where should preferences lie in such cases? Besides, there are numerous countries where diverse populations co-habitate more or less peacefully, which goes to show that national communities can prosper despite the lack of cultural, ethnic, linguistic or religious unity. And history has shown the monstrous crimes that can be perpetrated in the quest for ethnic unity, for example.

Another type of man-made borders are astronomical and geometrical ones. The conventional wisdom on this category of lines is that they are outmoded. In reality, however, they remain popular: many land boundaries run along meridians and parallels, witness the
45th and 49th Northern parallels which constitute an important part of the boundary between Canada and the United States.

Accordingly, astronomical and geometrical lines, widely used in the Age of Discovery but denounced later on as arbitrary because they cut across what nature has united, have remained popular because of the precision and permanence which they can offer if properly defined and on account of the predominant role they play in the area of maritime delimitation. One of their essential features is their invisibility and, as P. de Lapradelle has written in his seminal work on boundaries (1928):

“The only good limits are those which are invisible. They are uniting rather than divisive factors. Boundaries are conducive to peace as long as they remain discreet. In that sense purely artificial limits are preferable to (natural) ones.” (Translation.)

6. Borders and “Allocation Lines”

Land boundaries and maritime limits are complemented by a strange fossil inherited from the Age of Colonisation: so-called allocation lines, the peculiarity of which is that they run on water but divide land. Two examples may be mentioned:

The first is the line drawn in 1492 by Pope Alexander VI Borgia from the North to the South of the globe at a distance of 100 marine leagues west of the Azore and Capeverdian islands – corrected in the Treaty of Tordesillas of 1494 into a line running 370 marine leagues west of the two archipelagos. These lines were intended to define the respective spheres of influence of Portugal and Spain, to identify the land areas that could be discovered and explored or traded with by each, and the peoples who could be converted to Christianity by Portugal to the east or Spain to the west. Though running on water, the lines in question performed the single function of allocating land territory. To use a paradox, they were land boundaries on water.

The French-Portuguese Convention of 12 May 1886 loomed large in an arbitration which, almost one century later, opposed the Republic of Guinea, successor to France, and the Republic of Guinea-Bissau, successor to Portugal (see illustration 3). The 1886 Convention had been concluded at a time when international law did not allow States to claim jurisdiction over vast marine spaces. Yet in its Article 1.1, the Convention established two straight lines – the meridian cutting through Cape Roxo, terminal point of the land boundary separating Guinea (France) from Guinea-Bissau (Portugal), and the parallel of 10°40′N; the two lines intersect out in the Atlantic Ocean and enclose the archipelago of the Bijagos but not the island of Alcatraz, located south of the parallel of 10°40′ (graph 3). In the framework of the
arbitration proceedings between the two successor States, the Republic of Guinea contended that the parallel of 10°40’N was to be regarded as forming the maritime limit between France and Portugal – now between the two Guineas –, notably for the exclusive economic zones and the continental shelf. In its award of 14 February 1985, the Arbitral Tribunal to which the dispute had been submitted ruled that, if the parallel of 10°40’N was indeed a line running on water, its objective was not, and could not have been at the time at which it was drawn, that of serving as a maritime limit; its only purpose was to determine which insular territories belonged to which State. To put it differently, the parallel in question was an allocation line. Such lines can be found elsewhere in the world, witness for example the straight lines drawn in the 1898 Treaty consecutive to the Spanish-American War and defining the archipelago of the Philippines. Though mentioned by writers such as S.B. Jones, the phenomenon of allocation lines, also present in international rivers, is little known, and this speaker intends to shed more light on it in the near future.

7. Conclusions

It is not easy to draw conclusions from an inventory such as the present one. An attempt shall nevertheless be made to wrap up this report in five points:

1. Despite the growing interdependence between different segments of the international community, States will, for a long time to come, remain the essential actors on the international scene. This is why the borders separating their spheres of jurisdiction remain crucial. Once established, these borders – on land as well as on the oceans – should enjoy some degree of stability. Indeed, they are immune from the vagaries of the clausula rebus sic stantibus and of State succession. In addition, they are protected by the precept of uti possidetis, the universality of which has been confirmed by a judgment of the International Court of Justice relating to a boundary dispute between Burkina Faso and Mali (1986).

2. Basically, borders may be classified according to three criteria: their function; their shape; and their dependence on natural elements.

3. Regarding the functions of borders, a triple distinction can be made: between boundaries and limits, boundaries being intended to separate areas of full sovereignty, and limits being meant to divide areas, especially maritime spaces, over which States exercise but limited powers of jurisdiction; between boundaries and “allocation lines”, the latter’s only function being to determine which insular territories belong to which State; and between single and fragmented borders.
4. The “shape” or “configuration” of a border is the criterion used to distinguish linear boundaries from “frontiers”, that is, boundaries consisting of spaces which, as such, are res nullius, i.e. belong to no one but are appropriable. Such luxuries have become increasingly rare in the contemporary world. Today linear boundaries have largely replaced frontiers separating the States concerned by a space.

5. The use of natural features for the establishment of borders is the element separating “natural” from “artificial” boundaries or limits. If the concept of “natural” borders is of marginal importance for maritime spaces - except where disruptions in the continuity of the sea-bed (troughs) are selected to delimit the continental shelf -, it is often used on land. Its advantages - conformity with the “natural order” of things, certainty and stability - are sometimes more apparent than real. This being so, it cannot be argued that natural borders should always be preferred over astronomical or geometrical lines or, for that matter, over borders drawn on the basis of historical, economic or other realities.
GRAPH 1

(A)

State A
boundary in river and on bridge (median line)

State B

(2)

State A
boundary on bridge (median line) of bridge

State B
boundary in river (thalweg)

(3)

boundary at end of bridge

State A
boundary in river (median line)

State B
Graph 2

Channel of Rio Grande
1852 - 1907

Source: J.E. Muller, Restless River: International Law and the Behavior of the Rio Grande, El Paso, Texas