GEOGRAPHERS AND INTERNATIONAL BOUNDARIES

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INTRODUCTION

The Boundary Tradition in Geography

Geography has a long and honourable record of international boundary studies going back at least 100 years. Arguably, geographers made a greater contribution to boundary studies than any other social scientists until after World War II, and their practical work in boundary delimitations was considerable. They did not of course get everything right and their views were often contradictory and occasionally outrageous, but geographers were deeply involved both in academic debate and practical application of their fieldwork skills.[1] Much of the geographical literature early this century concerns the problems of land boundary delimitation and demarcation, and there are detailed accounts of boundary commissions and the like, recorded in the *Geographical Journal* of the Royal Geographical Society.

During the two world wars and in their aftermath there was lively discussion about the nature of boundaries, especially from a military and state security viewpoint. Thomas Holdich for example viewed boundaries primarily as barriers and argued that the best boundaries were therefore mountains, lakes and deserts.[2] There were many geographical studies of disputed areas, and studies of the effects of boundary change. Two classic works by geographers were published in the 1940s: *International Boundaries* by Whittemore Boggs and *Boundary Making* by Stephen Jones are still well worth study.[3] Both accepted the necessity for international boundaries, and wished to see them properly delimited and managed. But both were also uneasy with the negative effects of boundaries and stressed the need for circulation, and for borderlands to become zones of transition. Remarkably, fifty years ago, they foresaw the need for new concepts of sovereignty and new functions for boundaries.

Gradually geographers turned away from a preoccupation with boundary drawing to consider their functions and especially their economic and demographic effects. Losch in Germany[4] and Mackay in Canada[5]showed how the effect of boundaries on markets and telephone calls could be measured by giving them a distance value. Such innovative approaches to boundary studies were however all too rare and the contribution of geographers to international boundary science was relatively modest in the 1970s and 1980s. Moreover, the Cold War ensured that the political map of much of the world remained largely unchanged. Political geographers accordingly devoted their energies to broader questions related to the geopolitics of the Cold War, rather than international boundaries.

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Although Boggs wrote about maritime boundaries from the 1940s, sustained interest in maritime delimitation by geographers began only in the 1970s. In the 1980s, geographers began to make significant technical contributions, notably Victor Prescott in Australia[6] and Robert Smith at the Office of the Geographer in the US State Department. Since then several more geographers have become actively involved with maritime boundaries. The past decade has witnessed an extraordinary upsurge in international boundary studies in all the social sciences, in international law, and in technical fields such as hydrography, surveying and cartography. This has been stimulated by a whole raft of factors including the break-up of the Soviet Union, the debate about the withering away of the state, and the mirage of a borderless world, while new technology has revolutionised the speed and accuracy of boundary delimitations on land and sea. There are many other factors, including

the widespread resurgence of ethnic minorities demanding self-determination, or greater autonomy.

Geographers have been at the forefront of recent debates about the future of international boundaries,[7] although they reach a variety of radically different conclusions. Apart from engaging in academic discourse, geographers have retained their interest in practical aspects of boundary delimitation and management. They have a vital role to play in delimitation and demarcation, and increasingly in border and borderland management, including the management of transboundary resources.[8] Of course no single geographer can bring to boundary disputes the whole range of necessary geographical perspectives, skills, and technical know-how.

Significantly, there are now two Masters courses in International Boundaries in United Kingdom. The Durham University programme is a joint enterprise between the law and geography departments, and the London University course is predominantly in the geography department at the School of Oriental and African Studies.

THE INTERNATIONAL BOUNDARIES RESEARCH UNIT (IBRU)

IBRU was founded at Durham University in 1989 with what William Miles has described as *"a prescience unusual in academe."*[9] Prescient or not, IBRU has been kept extremely busy during a decade of spectacular changes to the world political map. From a modest start IBRU now has five full-time staff, a part-time Director, two visiting Professors and active links in approximately 100 countries. IBRU's mission statement is intentionally very broad:

> *IBRU works to enhance the resources available for the peaceful resolution of problems associated with international boundaries on land and at sea, including their delimitation, demarcation and management.*

Over the past decade IBRU has built up an international reputation as a source of information and expertise on boundary and territorial issues around the world. To achieve these goals, IBRU engages in consultancy and research, and maintains an active publishing programme (including the quarterly *Boundary and Security Bulletin* and two *Boundary Briefing* series on land and maritime boundaries). A current affairs database, originally funded by the Leverhulme Trust is growing steadily. IBRU convenes international conferences of boundary specialists in Durham every other year, and occasional conferences overseas in collaboration with local partners, such as Malta, Singapore and Vancouver. Our training workshops are perhaps the most important and exciting of all our activities Three or four workshops are held each year, using world-class teams of tutors, and there is never any trouble filling the places with participants from all over the world. Recent workshop topics have included 'Defining the Outer Limits of the Continental Shelf', 'Maritime Boundary Delimitation', 'Land Boundary Demarcation and Management', and 'Technologies for Boundary Making.'

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For obvious reasons little can be said about IBRU's clients. We have worked for half a dozen governments, several major law firms, and some 40 companies and organisations, including Greenpeace, and the United Nations, for whom IBRU prepared proposals for a nuclear-free zone around Africa. Our clients also include publishers seeking guidance about boundaries in maps and atlases, and there are clearly many more publishers who need such advice, but have not yet sought it!

The day-to-day work of IBRU illustrates quite well the role of geographers in addressing international boundary disputes. For convenience this can be grouped into seven broad types of activity.

Analysis of maritime boundary claims and disputes

This is probably the type of work we are most often asked to undertake. Not all such projects are related to boundary disputes, although most of them are in regions where there is uncertainty about the boundary, if not a dispute. With only some 160 of the world's estimated 420 potential maritime boundaries so far agreed, it is not surprising that many queries concern maritime boundaries. Enquirers may want to know what the overlapping claims look like, or the shape of a theoretical pattern of agreed boundaries for the future. We may not know the legal and political background, or even the name of the client, but most enquiries are evidently from oil companies etc. considering seeking concessions or wishing to lay a pipeline. We generally prepare lines on largescale charts, sometimes using computer software which can draw median lines with considerable accuracy. The results are reduced and redrawn by our cartographers for the convenience of clients. Early in 1998, IBRU entered into a formal partnership with the Law of the Sea Division of the UK Hydrographic Office (UKHO) in Taunton to collaborate in seeking and undertaking consultancy work. We gladly leave difficult high-tech geodetic and charting work to our expert colleagues in the UKHO.

Drawing land boundary lines on maps

IBRU has also worked on a number of land boundary disputes for clients, generally providing maps with commentary for lawyers to use as they wish. An example is the Angola-Congo (Zaire) boundary. The Angola – Republic of Congo boundary was agreed in 1891 as following *"the middle line of the channel of navigation"*, but allocating certain named river islands to Angola, others to Congo. We were asked to track how the navigation channel and boundary changed through time – and thus arguably the ownership of the islands. We plotted these changes from navigation charts going back to the 1880s.

Data collection in archives

Most boundary disputes which go to arbitration involve the collection of very large quantities of documents, maps and charts. Much of this may be discarded by the lawyers, but it is equally surprising how much finds its way into the Memorials and Counter-Memorials and other pleadings of the parties. Something like 39% of the land boundaries outside Europe were the creation of Britain and France, and over half were the creation of European powers.[10] A great deal of primary documentation is therefore in archives in Britain and France and other European countries.

Archival searches are by no means the preserve of geographers, but IBRU has built up a good deal of expertise in searching archives, and we know some of the very best historians and archivists to help us. There are advantages in having a working knowledge of boundary issues when selecting documents, preparatory to dispute negotiation or arbitration. We search the India Office Library Records and Public Record Office (P.R.O.) for maps and charts frequently, and procure materials from the Royal Geographical Society, the Ordnance Survey International Library, and the Hydrographic Office in Taunton. The British Library and the PRO are also major sources for historic maps; the latter has an estimated 7-8 million maps, only one million of which are catalogued. Archival searches are not easy; they can be tedious and time-consuming, and the task can be daunting. At one time we had associates searching archives in Berlin, Paris, Istanbul, Cairo, Amman, London and Bombay simultaneously. Over 3,000 documents were collected in connection with a single case. The material selected has to be annotated, listed, and put together to make the job of the legal team as easy as possible.

When maps have to be collected, a professional surveyor, cartographer or geographer are probably best for the task. The accuracy, integrity, and contents of the maps may need to be evaluated. It may be necessary to research how, when, where, and by what means the maps were made, and to present this information with the maps. IBRU has also been commissioned to assemble, print, edit, and bind collections of maps for presentation before the International Court of Justice (ICJ).

Data collection in the field

The collection of data by fieldwork is a skill which geographers can offer, and are often very good at doing. The ability to record evidence using maps and field notes is still part of most good undergraduate geography courses. Many geographers learn the basics of surveying, and an increasing number take courses in the use of the GPS (Global Positioning System). They often learn how to formulate and conduct structured questionnaires, with and without tape recorders.

Geographers have a related skill, usually acquired by work in the field, which is an appreciation of physical processes and an understanding of landscapes. Such expertise applied at the appropriate time might have prevented some of the most famous errors in boundary delimitations which created problems in later years. Mistaken assumptions about which is the main tributary of a river have caused disputes more than once, resolved in at least one case by geographers undertaking measurements of streamflow and gradient.

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The celebrated Argentina-Chile boundary in Patagonia created serious difficulties because in the Buenos Aires agreement of 1881 somebody was not content with the simple definition of the border as the water-parting, but added that it was also the line of the highest peaks. The two are not the same, and the parties chose alternative interpretations until the matter was resolved in 1902, with further adjustments in 1966 and 1994

IBRU staff have undertaken fieldwork in Africa, the Mediterranean and Middle East. This has included the collection of field evidence for cases before the ICJ. For example position-fixing with the use of GPS, a fisheries survey, locating a sponge bank and interviewing very old sponge fishermen, and trying to ascertain whether or not a small island could be reached on foot at low tide. The author and his colleague Michael Drury undertook a detailed field survey of Cypriot ethnic geopolitics in the summer of 1973 which helped explain events following the Turkish invasion of 1974 (see map).

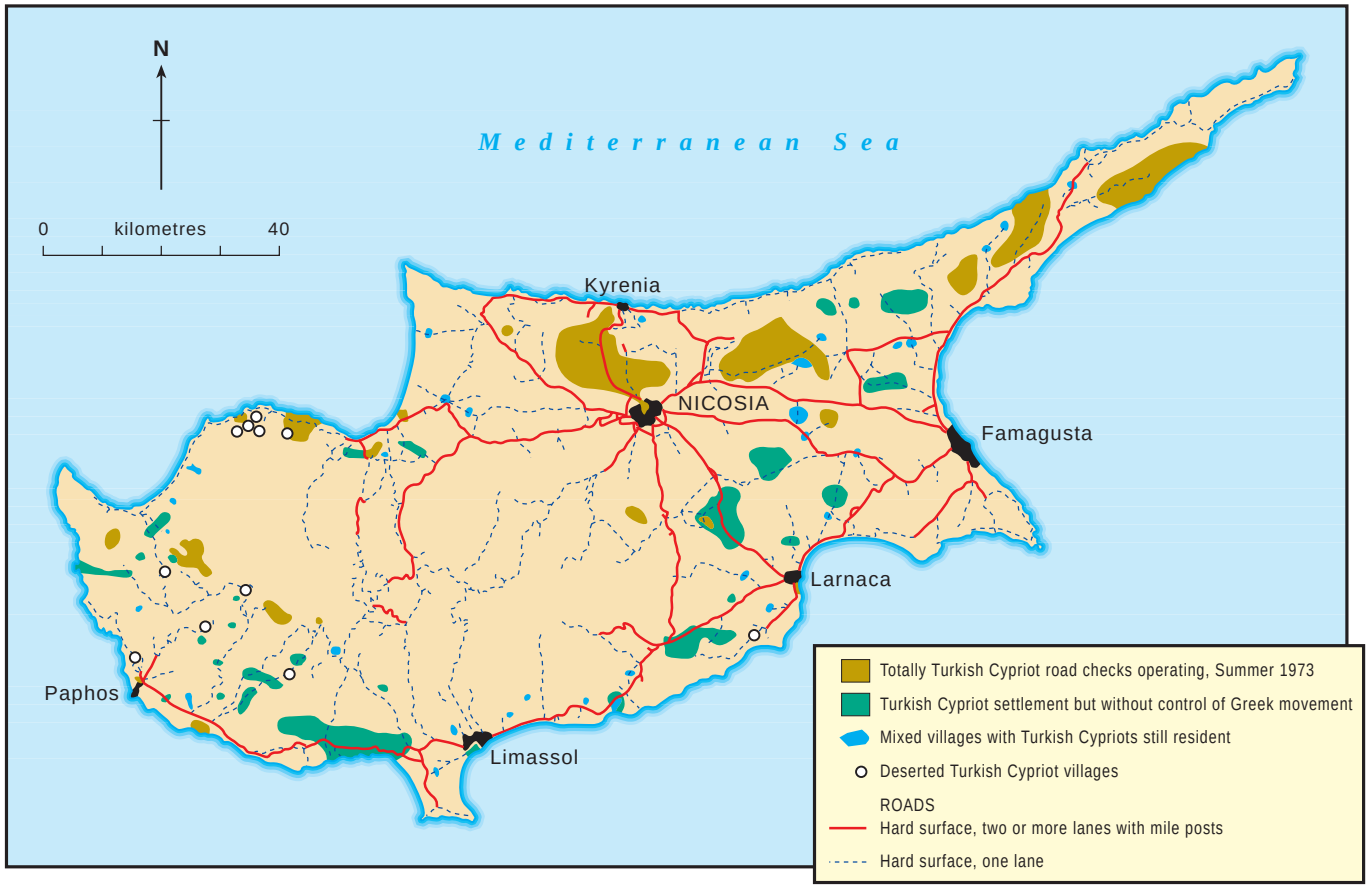
Because effective occupation and administration can be a crucial element in establishing title to territory, what is actually on the ground can be important. This is often best established by fieldwork, supported by aerial photography and satellite imagery where appropriate. In many land boundary disputes, the human geography can be crucial, and field evidence collected in borderlands may give important clues not only to title to territory, but to what territorial delimitation might be acceptable to the people, and what delimitation would be consistent with patterns of interaction.

Understanding maps and cartography

According to Dennis Rushworth (former Director of the Mapping and Charting Establishment, UK Military Survey) only 20 or so land boundary disputes have been arbitrated since 1920, four by the International Court of Justice (ICJ) and the remainder by *ad hoc* tribunals.[11] Until about 1950 tribunals in boundary cases typically consisted of a lawyer (usually as President) a geographer and a surveyor. Since about 1970 such tribunals have usually consisted entirely of lawyers, as does the ICJ. Of course it is right and proper that lawyers should take control of cases because ultimately decisions must be reached in accordance with international law. Lawyers will however inevitably have to consider a great deal of geographic evidence.

According to Rushworth, both *ad hoc* tribunals and the ICJ have been less efficient and effective because of the absence of any *"built-in geographic expertise."* He cites three main reasons:

1. The significance and meaning of geographic evidence may not be properly understood, and may not always be given its correct weight;


N
Mediterranean Sea
0 kilometres 40
Kyrenia
NICOSIA
Famagusta
Larnaca
Paphos
Limassol
Totally Turkish Cypriot road checks operating, Summer 1973
Turkish Cypriot settlement but without control of Greek movement
Mixed villages with Turkish Cypriots still resident
Deserted Turkish Cypriot villages
ROADS
Hard surface, two or more lanes with mile posts
Hard surface, one lane

2. Tribunals may be unaware of the wide range of geographic techniques that can help them understand, evaluate, and apply geographic evidence;
3. Judgements tend to be addressed to lawyers (to justify the legal decisions taken) whereas the most important recipients of the judgement are diplomats, geographers and others who have to demarcate and administer the boundary. They require a clear, graphically-based delimitation which is practical and workable.

A classic example of what can go wrong is the ICJ Judgement in the Burkina Faso-Mali case. The agreed delimitation was depicted at a scale of 1:400,000 and in places the map is scarcely legible. Moreover the way in which the map was originally made (by the French Institut Geographique National) using air survey with sparse astronomical control could have resulted in errors of up to a kilometre in the position of detail. An accurate and cheap solution would have been to use existing air photography to define the boundary turning points, or even satellite photography to prepare orthophotos on which key points could be marked, as on the 1994 Israel-Jordan border agreement.[12]

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Dennis Rushworth and Ron Adler[13] between them have drawn attention to a large number of common errors in the use of maps, and in cartography associated with boundary delimitation. Some of their most useful work has appeared in IBRU publications. Both would argue the case for surveyors or geographers to have a role in ensuring that maps are properly deployed and understood when they are used in arbitration. For example, the technical limitations of geographical coordinates are often overlooked; maps of unsuitable scale may be used, or no evaluation of map quality or accuracy is undertaken.

Maps of course cannot by their existence constitute title to land. The legal force of maps is only acquired when they are incorporated into the text of a treaty or judgement. In other respects they are of no greater value than any other kind of evidence. But they are an indispensable tool in boundary negotiations as background to delimitation or demarcation proposals. They are also critically important when communicating a new boundary to the public.

Analysis of coastal geography

Looking through the index of the 1982 UN Convention on the Law of the Sea, one is struck by the number of geographical terms. They can be summarised as follows:

Physical features:	36	(eg islands, bays, continental shelf etc.)
Geographical concepts:	24	(eg adjacent coasts, semi-enclosed sea,)
Geographical zones and areas :	11	(ocean-floor, safety zone, EEZ, archipelagic waters etc.)

Many of these geographical terms have given rise to difficulty because they have never been properly defined. One factor is that the UN Convention was formulated for application at a global scale, but its implementation depends largely upon local geography. A surprisingly large number of scholars and experts have wrestled with these problems from a variety of backgrounds. Lawyers, hydrographers, geographers and surveyors are among those who have contributed to the literature.

Geographers have played an important but as yet inconclusive part in the debate. Perhaps some of their best work has been in relation to straight baselines, from which coastal states measure their offshore claims to territorial sea, continental shelf and EEZ. Prescott was among those who drew attention to the abuse of straight baselines over a decade ago. More detailed documentation is included in the volumes edited by Ashley Roach and Robert Smith, *United States Responses to*

Excessive Maritime Claims (1994 and 1996).[14] Lawyers too have published books on straight baselines, but regrettably one by Reisman and Westerman was savaged by Prescott for its geographical inaccuracies.[15] IBRU has undertaken detailed work on the baseline system of a certain state, comparing its declared baseline claims with a strict interpretation of the guidelines in UNCLOS.

Another area in which geographers have offered assistance is in the role of islands in maritime boundary delimitation. One major problem is disputed islands, which is invariably a political, historical, and legal matter. More often islands pose questions of definition (is it a rock or an island as defined in UNCLOS Article 121?), or of what weight to give to an island when drawing a maritime boundary. Geographers have addressed this technical aspect; Hodgson's work in 1973 is still useful although it pre-dates the final draft of UNCLOS.[16] Several geographical texts including Prescott give guidelines about how to measure half effect and full effect of islands.

Perhaps the main contribution of geographers in coastal geography has been to heighten awareness of the technical pitfalls.

Much more could be said. Attempts to make geographical sense of such terms as 'deeply indented coast' and 'general direction of the coast' have been made, especially by the staff of the Office of the Geographer at the US Department of State. Some of this is technically fine work but it has never been formally adopted, or widely publicised. A good example is Hodgson's proposals for quantitative tests as to whether a group of islands fringe the coast or not, and whether a coast is deeply indented or not.[17] The problem is deciding who these guidelines are intended to guide, and how they might be implemented. Perhaps the main contribution of geographers in coastal geography has been to heighten awareness of the technical pitfalls.

IBRU has prepared technical reports on the importance of scale, especially in measuring coastal length, on various ways of assessing 'opposite' coasts, and on coastal direction. We commissioned a fine briefing on *Technical Aspects of Maritime Boundary Delimitation* by Peter Beazley [18] which is less intimidating than the authoritative volume on the subject by the International Hydrographic Organisation, but the course of latter remains an indispensable work of reference.[19]

Studies of state practice

It is surprising how many clients are seeking good well-informed geographical background briefing from IBRU. Some such studies are clearly commissioned in connection with specific boundary disputes, although at what stage in the proceedings, or for precisely what purpose we do not always know. Finding out state practice in other parts of the world may provide clues to a solution to the problem in hand. A foreign ministry, for example, asked for an inventory of special arrangements for giving access to the sea, or across unfriendly territory, the focus of interest being on designated 'corridors'. Following requests for data, we have also taken considerable interest in conservation areas along international boundaries following up the superb work undertaken by the World Conservation Monitoring Centre at Cambridge. Several governments and agencies are becoming very interested in the potential for confidence-building presented by transboundary conservation areas. Drawing on some of the best practice worldwide, IBRU was able to offer guidelines for a 'peace-park' in a region where there had been heavy fighting only a few years ago.

A third example: we were asked to detail the alternatives to state territorial sovereignty already in operation worldwide, such as no-fly zones, buffer zones, neutral zones, shared zones, demilitarised zones etc. There is particular interest in common or joint development zones offshore; 18 are already in operation as alternatives to maritime boundary conflict, and most appear to work well. Indeed the time is ripe for a serious examination of their operation and management.

Conclusion

Both on land and at sea there is a great deal of work to be done in the delimitation and peaceful management of international boundaries. Most of this work will engage teams of experts working in close collaboration under the leadership and direction of lawyers. Geographers clearly have a significant contribution to make and this is well understood. There is some evidence that lawyers could make better use of their technical experts by earlier involvement, better communication and more consultation. In general however the legal and technical aspects of boundary questions are being well handled, and experience is being gained all the time.

Hand in hand with these practical tasks, the time has come to begin rethinking the future of international boundaries. A start has been made in the social sciences, and geographers have played a prominent part in this debate. International boundaries may be fading fast in some parts of the world, and in Europe at least borderlands are being seen as regions of opportunity. New territorial arrangements may need to be considered such as transition zones, regions of integration, shared territories, layered sovereignties, and a variety of other imaginative devices. There is an urgent need for lawyers to join this debate so that it can be moderated and fashioned by legal reality.

Based on a talk given by Gerald Blake at the Lauterpacht Research Centre for International Law at the University of Cambridge, 23 October 1998.

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