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Geographical intelligence: American geographers and research and analysis in the Office of Strategic Services 1941–1945

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Abstract

The paper provides an interpretation of the role played by the Research and Analysis (R&A) Branch at the US Office of Strategic Services (OSS) during the Second World War, and, in particular, the contributions made by some American geographers. Richard Hartshorne was especially important because he held a key administrative position at R&A, Chair of the Projects Committee that oversaw all research publications. But other geographers were involved including Kirk Stone and Edward Ullman who produced strategic regional reports (the JANIS studies), and Arthur Robinson and Leonard Wilson who held key positions, respectively, in cartography and map intelligence. Conceptually, the paper is informed by Bruno Latour's writings on the history and sociology of scientific knowledge. Three of his ideas are especially pertinent: 'centres of calculation,' 'translation,' and 'action at a distance.'

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'Who can find their way about this lush maze of initials, arrows solid and dotted, boxes big and small, names printed and memorized?'

T. Pynchon¹

Thomas Pynchon's satirical novel, *Gravity's Rainbow*, is about the other form that conflict took during the Second World War, research and analysis. Carried out in Pynchon's book by a motley crew of boffins and mad scientists, their weapons were not the normal armoury of war, but included Pavlovian theories of stimulus and response, Zipf's Principle of Least Effort, the Poisson equation, and 'a number of reference books out of the ACHTUNG library back down the hall.'

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Their war was fought in office cubicles ('a stale smoke paper warren'), in seedy laboratories, and in the 'lush maze of initials' associated with military intelligence – ACHTUNG, PISCES, SHAEF, S.O.E., ARF. They were 'the New Chaps with their little green antennas' as Brigadier Ernest Pudding, a pukka army man, called them.²

The work of these 'New Chaps,' and they were most often chaps,³ represented a new kind of warfare that continued even more systematically once the War was over, and seen, for example, in the establishment of national intelligence agencies like the CIA (founded in 1947) and the KGB (founded in 1954).⁴ Of course, military intelligence has existed ever since the military has existed. But the Second World War represented a significant expansion in the scale, bureaucratisation, systematic application, and funding of war-directed research and analysis.

That research and analysis took two forms. The first, and the centre of action in *Gravity's Rainbow*, was the application of science to the technology of war. In World War II, it was best represented by the Manhattan Project convened at a series of sites by General Leslie Groves and Professor Robert Oppenheimer who brought together a who's who of American and émigré physical scientists.⁵ But there were other large scale science projects contributing to the Allied victory: the 'RadLab' at MIT, the site where half of the radars used during WWII were designed⁶; Bletchley Park, sixty miles Northwest of London, home to Britain's 'code breakers,' and the place where the first semi-programmable computer, the Colossus, was operated; and the Applied Physics Laboratory of Johns Hopkins University at Silver Springs, Maryland, funded by Vannevar Bush's Office of Scientific Research and Development, that developed radio proximity fuses that allowed ordnance to explode as it approached its target.⁷

The second form of research and analysis, and the focus of this paper, was the organized use of social science for understanding the knowledge of war; that is, the systematic deployment of social sciences to collect and analyse information necessary for strategic military ends. On July 11, 1941 a Presidential Order created the US Office of the Co-ordinator of Information (OCI), and later reorganized as the Office of Strategic Services (OSS) on June 13 1942.⁸ Its charter was 'to collect and analyze all information and data which may bear upon national security,' reporting directly to the President and the Office of the Joint Chiefs of Staff.⁹ The task was fundamentally an academic one, and its staff consisted of the best and the brightest of American and later expatriate European social scientists. Their purpose was not like their physical science counterparts to invent something new, but to take sources already existing and through investigation and interpretation to show their relevance in fulfilling specific military tactical purposes. Their home, therefore, was the library; their tools 3 × 5 index cards and yellow sulphite-writing pads; their product soft-cover typed research reports.

Perhaps surprising given their hitherto ambiguous relation to mainstream social sciences, American geographers were in the thick of the action within OSS. Richard Hartshorne, author of the definitive *The Nature of Geography* published in 1939 that explicitly distanced the discipline from contemporary American social science, ironically occupied a key administrative position, Chair of the Projects Committee.¹⁰ More generally, OSS was the single most important government institution employing American geographers during the war, 129 at its height.¹¹ But despite this disciplinary concentration, as well as the larger importance of OSS, little has been written about the role geographers played.¹² The aim of the paper is to begin to redress this lapse. In particular, my focus is the Research & Analysis (R&A) Branch of OSS where the bulk of social science inquiry was undertaken, and the majority of geographers worked.¹³

Informing my account is Bruno Latour's theoretical and substantive writings on scientific knowledge and practice.¹⁴ Latour's aim is to understand scientific knowledge as a fragile accomplishment, always the result of persuading various agents, both human and non-human, to work in concert, to bring their interests into alignment, and to remain within a common network. In doing so, knowledge is stabilised, offering the possibility of dissemination and effect. Latour works out this model for the laboratory sciences using the example of Louis Pasteur and his Paris Rue D'Ulm lab.¹⁵ But he also provides a version of the same model for the field sciences.¹⁶ This variant especially emphasises the geographical circulation and accumulation of knowledge around particular sites that Latour calls 'centres of calculation.' Such sites are the primary points where different materials are collected and made to work together. In Latour's vocabulary that working together is achieved through 'translation.' Translation is the process of relating different entities to achieve union and integration.¹⁷ It does not always succeed, but when it does, translation transforms the meaning of the elements, bringing into being a new product. Finally, as a result of collecting materials at the centre and translating them, knowledge is accumulated, offering those who possess it, and to whom it is given, advantages in subsequent geographical circulations, permitting the prospect of 'action at a distance.'

My suggestion is that wartime research and analysis at R&A, including the role of geographers, functioned in accordance with Latour's model of science, especially the second variant. The model's value is in connecting the specific mechanisms of knowledge gain and deployment at R&A with a larger conceptual understanding. Specifically, Latour's model highlights a series of critical moments in that gain and deployment, as well as providing a vocabulary for their analysis. Also emphasised by Latour is the hesitant and fraught nature of science in action. Centres may fail to calculate, translations may not translate, and action may not occur even at home let alone far away. Each process is troubled, and this was certainly the case at R&A. Like the production of scientific knowledge more generally, the production of military intelligence at R&A was often uncertain and faltering, only sometimes paying off.

R&A as a centre of calculation

The erudite scholars of 'R&A' did not paddle ashore in rubber dinghies or drop from the sky into enemy territory; they did not carry the famous OSS L capsule (potassium cyanide); and the only code book used in the Branch was a glossary of fractured English by the German émigrés of the Central European Section

B. M. Katz¹⁸

While US military intelligence services existed before the Second World War, they were scattered, with no clear chain of command, and subject to internecine struggles over jurisdiction. Robert Murphy, a senior US diplomat at the time, called American intelligence 'primitive and inadequate. It was timid and parochial.'¹⁹ In response, and pushed by the rise of fascism and hostilities in Europe, in July 1941 President Roosevelt created a civilian agency attached to the White House, the OCI, charged with centralising intelligence. It was headed by William 'Wild Bill' Donovan, a decorated World War I infantry battalion commander, a New York corporate

lawyer, and someone who had the ear of both Roosevelt and Churchill.²⁰ Almost immediately, Donovan established R&A within OCI. Its rationale to him was clear:

We have, scattered throughout the various departments of our government, documents and memoranda concerning the military and naval and air and economic potentials of the Axis which, if gathered together and studied in detail by carefully selected trained minds, with knowledge both of the related languages and technique would yield valuable and often decisive results.²¹

R&A was to become a ‘centre of calculation.’ It was not exactly in the same mould as envisaged by Latour, and represented by the great scientific societies, museums and botanical gardens of Western European capitals (his exemplars). But its functions were identical. First, it was to bring the rest of the world as it bore on military intelligence to the centre, in this case, to the R&A Branch at the South Building at 23rd Street and East, Washington DC. The world came to R&A in the form of various kinds of paper inscriptions and representations such as maps, photos, on-the-ground reports, census information, regional monographs, academic articles, newspaper clippings, statistical tables, line drawings, foreign encyclopaedia entries, and more. Second, R&A’s task, as in all centres, was then to join such heterogeneous sources, to ‘paper shuffle,’ to engage in ‘nth degree inscriptions,’ that is, to effect translations in order to produce yet more inscriptions. Finally, if completed successfully, R&A by virtue of the knowledge it accumulated possessed the potential to dominate other sites, to ‘act at a distance on many other points.’²²

Bringing the world to the centre: ‘assets’ and organization

To bring the world to the centre, R&A required a particular organizational form and set of assets.²³ In the middle and on the top row of every R&A organizational chart, in his own ‘box’ from which all ‘arrows solid and dotted’ flowed, was the Director, the Harvard Professor of European history, William L. Langer. At its height, he was in charge of 900 staff members, a third of who by the end of the war were spread across the globe working from R&A outposts.²⁴ As an organization, a centre of calculation, OSS rested on two sets of pivotal assets. The first was an extraordinary group of academics who undertook the collecting of knowledge and its interpretation, and who initially were drawn from America’s elite universities (someone said OSS stood for ‘Oh So Social’ given the upper and middle class origins of its staff).²⁵

All the social sciences were represented although economists, historians, and geographers were the most numerous. There were three main groups. First, established American professors like Langer, and Hartshorne. Hartshorne had been called to Washington in early September 1941 to be Chief of the Geography Division. Preston E. James had suggested him at a meeting in July 1941 convened by Donovan at Harvard to discuss R&A’s organization and personnel. James was there because he had received a commission in the Military Intelligence Reserve in 1923, and was well known in Washington military circles. Hartshorne was understandable as James’s choice. The publication of *The Nature* made him one of America’s most well known geographers, and even before its publication, Hartshorne was one of the most cited.²⁶

Second, a group of young faculty or most often graduate students who later in the post-war period were to re-shape their respective disciplines, often becoming America’s Cold War public intellectuals. Included within this cluster were Arthur Schlesinger, Jr., Walter Rostow, Paul Sweezy, Edward Shils, Sherman Kent, J. Barrington-Moore, Carl Schorske, Gregory Bateson, and Charles

Kindelberger. There were two future Nobel-prize winners, seven future Presidents of the American Association of Historians, five future Presidents of the American Economic Association, and three future Presidents of the Association of American Geographers (apart from Hartshorne, Preston James and Edward Ackerman). Other geographers prominent within R&A included Edward Ullman, Kirk Stone, Joe Spencer, J. B. Appleton, Chauncy Harris, and within the Map Division Leonard Wilson and Arthur Robinson who served as its Chief.

Finally, joining R&A only from mid-1943 onward, given security worries and extensive vetting, were a group of émigré scholars, most often from Germany, and many from the Frankfurt School of Critical Theory. Leftwing, brilliantly learned, frequently cantankerous, they included Harold Deutsch, Otto Kirchheimer, Herbert Marcuse, and Franz Neumann.²⁷

Collectively this group through their talents fulfilled the mandate of OSS, collecting and analysing all information and data bearing upon national security. As Langer reflected at the end of the war, and pointing to what was to follow:

Through the R&A Branch the specialized knowledge as well as the training in research of American universities was for the first time made the core of government service. There can be no doubt that we succeeded in pooling much of the best brain power and specialized knowledge of the country as far as the social sciences are concerned. The relationship of this type of government work to the American universities should be maintained at all costs and the existing contracts should be preserved wherever possible.²⁸

The second asset was the paper inscriptions and representations, what Latour calls ‘immutable mobiles,’ that is, information in textual or pictorial form that circulates geographically (it is ‘mobile’) while at the same time retaining its meaning (it is ‘immutable’). At R&A, it was represented by its vast expanding collection of books, pamphlets, manuals, magazines, newspapers, photos, and maps. This was the material to be ‘studied in detail by [those] carefully selected trained minds.’ Specifically, by the end of the war R&A had assembled 300,000 captioned photos, 300,000 classified intelligence documents, over 2 million assorted types of maps, 350,000 foreign serial publications, 50,000 books, thousands of biographical files, and through the prodigious efforts of Wilmarth Lewis of the Central Information Divisions, 1 million 3 × 5 index cards organized by subject, cross-indexed, and containing pictorial material.

Of course, this information was not static, but required continual revision. As an R&A report put it, ‘Much of the success of R&A has been due to the willingness of its staff to put in plain leg work in canvassing all ... available information.’²⁹ Partly updating came through other arms of OSS, including espionage, strategic intelligence, and field reports from OSS staff entering formerly occupied areas. For example, R&A prepared a ‘Memorandum for Field Terms’ for OSS staff to use in collecting field information in newly ‘liberated territories.’ ‘The field man,’ it instructs, ‘must ... prepare himself to select representations of typical photographic views which best bring out the characteristic combinations ... which make up [the military significance] of a landscape.’³⁰ Partly it came from swapping sources with Allies. Charles Fahs, Chief of the Far Eastern Division, in a memo to Langer, for example, argued for R&A’s need for ‘Russian books and magazines which may have information on Japanese controlled areas.’ But this exchange, he added, ‘must be on a trading basis. It will be unprofitable to exchange our more confidential items for their less restricted ones.’³¹ And partly it came from R&A’s own field outposts. They offered

‘the collection of fresh intelligence directly in the field, notably from points close to the battle lines or in the areas newly conquered or liberated....’³²

Finally, the organization of R&A sought to ensure that both the talent and the information collected came together in the most efficient combination given its ends. In the first incarnation, OCI was organized in terms of traditional disciplines, with each subject specialist in their own box with only their own kind. This is what Hartshorne’s initial Geography Division represented: geographers talking only to geographers. This changed radically in early 1943 when the former discipline-based grid of organization at R&A was abandoned. After that date, research and analysis was organized geographically by theatre area: Europe–Africa, USSR, Far East (including the Pacific), and Latin America. For each area, research and analysis focussed on the economy, topography, and politics, culture and society.³³

This change caused much trauma. Langer later reflected that he was ‘rather astonished that the whole branch did not break down under the strain.’³⁴ The old academic model of humanities and social sciences was broken up and put back together again in a completely different form, requiring very different research practices. The focus was not an academic discipline but a geographically defined military problem (i.e., in one of the four war theatres), and research practice involved not solitary disciplinary study but multiple interdisciplinary co-operation. Social scientists at R&A would now like their scientist counterparts at Los Alamos, or at MIT, or at Silver Springs, work as a team on specific practical problems requiring group effort to solve. The model of work at R&A became the scientific one, big science: group-projects, multi-disciplinarity, and specific problem solving using objective reasoning. After all, as an approach, big science was yielding spectacular results in nuclear research, or in development of radar, or in the design of ordnance. Of course, the change to the new model was not always smooth. There was sometimes resentment, the sense that an internal disciplinary pecking order still held sway (with usually economics on top). But there was no option. It was a military order.³⁵

Translation and production

The rationale for R&A, Donovan envisaged, was to take existing ‘documents and memoranda,’ and to use them for purposes for which they were not originally intended; in this case, to make them ‘bear upon national security.’ In Latour’s vocabulary, the task was one of translation: to persuade (enrol) actors to contribute to a larger project in which they seemingly had no interest.

This charge was clearly set out in an R&A Report written to justify the workings and aim of the Branch. While the Report recognised it was important to gather new data, the ‘collection of bits of information ... does not add itself up into a significant and reliable description that in itself gives answers to questions.’ Rather, ‘the function of the Branch ... is to secure all possible elements of intelligence from all available sources, to evaluate and compare them, to assess them against standard bases of measurement and, by analysis, to digest them into an essentially new product.’³⁶ Such function necessarily required translation; that is, creating a new product by bringing together heterogeneous sources, making them work together.

The ‘Memorandum for Field Terms’ quoted above, for example, was R&A’s attempt to turn ‘the reality’ of a war-torn messy landscape of a newly ‘liberated territory’ into information easily translatable, that is, in the form of an immutable mobile. The new object – in this case

photographs and field notes taken by the OSS ‘field man’ – once in the hands of R&A could be further translated. It might be turned into a printed map drawn by Arthur Robinson, or clipped to one of Wilmarth Lewis’ index cards, or used as an illustration in R&A Report 1373, *Agricultural Production in Southern France*.

The process of translation at R&A was strictly managed and disciplined. Emphasis was on the ‘logical processes of scientific reasoning’ mirroring the practices of natural scientists.³⁷ Enforcement came through a set of internal bureaucratic rules and procedures, at the centre of which was often Richard Hartshorne. When R&A was established a deliberate separation was made between Langer and the various functional intelligence divisions he directed. Between the two, acting as a governing body, was the Board of Analysts (the so-called ‘College of Cardinals’). Its executive arm was the Projects Committee, and chaired from November 27 1942 by Hartshorne.³⁸ It was an immensely powerful position. The Committee prioritised, set the standards for, and vetted all individual intelligence reports written by R&A staff.³⁹

Proposals for intelligence reports were submitted to (or solicited by) the Projects Committee. Proposals included a cover sheet indicating the number of hours of work required, whether there was a need for maps, the project leader, and the ‘probable consumers’ of the reports. If approved, the report was written, typically collaboratively, and once completed sent to three independent assessors for review. Only with positive reviews, and a go ahead from Hartshorne, was the report mimeographed and released.⁴⁰

There were strict guidelines about both the style and the nature of the content. Each Division had a professional editor, and an Editor and Production Chief worked with the Projects Committee. Hartshorne was central to all aspects of their production. For example, the Minutes of the Projects Committee for 8th September 1943 reported, ‘There was some discussion about the use of footnotes and whether a consistent policy could be formulated concerning their use. It soon became clear that the subject was a difficult one to settle and the action was to postpone it until the return of Dr. Hartshorne.’ Other issues discussed were word choice (‘generally speaking, it is desirable to avoid the use of words that are not to be found in the ordinary abridged dictionary’), and the need for editorial intervention (‘If it seems likely that the readers of a paper will misunderstand ... the meaning of a sentence, the sentence presumably requires change.’)⁴¹ As Katz writes, Hartshorne ‘assisted by a grammatical police force of editors, translators, and secretaries’ ensured the removal from finished intelligence reports of all ‘grammatical “peccadilloes,” “stylistic misdemeanours,” and outright “crimes against objectivity.”’⁴²

That last phrase goes to a second issue, the nature of the content of the reports. For Hartshorne intelligence reports were above all to be objective. Ex-Frankfurt school members lodged especially in the Europe–Africa political division, and who spent much of their earlier intellectual lives disputing precisely the idea of a presuppositionless logic were doubtful. Hartshorne’s response was a guide to preparation of political reports.

It is of the utmost importance that our political intelligence reports should strive for the highest degree of objectivity. We should cultivate what might be called a clinical attitude. ... The rules of objective writing are presumably familiar to all the research workers on our staff; experience suggests that it is necessary to remind ourselves of them. The most obvious and yet most common crime against objectivity is the use of hortatory and value words and phrases. Generally speaking ‘should’ and ‘ought’ – not to mention ‘must’ are taboo. Value

adjectives and nouns are to be avoided no matter how much they appear to add literary quality. Intelligence reports find their merit in terseness and clarity rather than expressive description. Proust, Joyce, or Gertrude Stein would all be equally out of place in R&A⁴³

Translation for Hartshorne, then, meant laying out only the facts in the clearest, most grammatically correct style possible. It meant taking various objective data from different textual sources, and carefully re-arranging them within a different text, the intelligence report. Absent should be recommendations, absent should be even the word should.

However, controversies around enforcement, the proper form of translation for the research reports, continued to erupt even during the latter stages of the war. There were a series of bitter memos, and Machiavellian manoeuvres around a set of research reports written in June and July 1945 by the usual suspects, members of the political subdivision of the Europe–Africa Division. Hartshorne wrote on June 15, 1945 to Sherman Kent, Chief of the Europe–Africa Division, that R&A Report 2345, Food Production of Germany West of the Oder, was unacceptable because it contained ‘undemonstrated conclusions not essential to the problems under analysis.’⁴⁴ This was the first of a series of rebuffs to the political subdivision culminating in the rejection of R&A Report 1549 Germany’s Social Democratic Party one of whose authors was Marcuse.⁴⁵ Hartshorne says ‘the essential issue is whether this report represents sound, mature and objective scholarship. Several readers have doubted that the paper was up to R&A standards.’⁴⁶ Those standards, however, were precisely the ones being called into question by the political subdivision; that is, how translation should be carried out.

To that end, Kent along with Carl Schorske, former Acting Director of the Division, went behind Hartshorne’s back and wrote directly to and later met with Langer. ‘There clearly exists no agreement over standards of political objectivity or maturity of judgment between the offices of the Projects Committee and myself’ wrote Schorske to Langer. And Kent penned a handwritten memo to Langer titled, ‘Whose judgment should rule in the determination of objectivity and maturity in political research – the originating section or Hartshorne and his staff?’⁴⁷

Hartshorne’s response was an eight page single-spaced memo to Langer reasserting the power of the Committee and the power of objectivity. The Committee members were the guardians of objectivity, and through the authority vested in them by the very organizational structure of R&A, they would unflinchingly maintain the Branch’s standards of purity.⁴⁸ The timing made the memo moot. Within a month, Hartshorne stepped down as Chair of the Projects Committee and returned to civilian life, and within two months, OSS was dissolved.⁴⁹ It allowed Hartshorne to go back to Science Hall at the University of Wisconsin in Madison to defend until he died forty seven years later a definition of the region couched in objective terms (the region as an element complex composed of objective facts). And it also allowed the dissidents in the political subdivision, especially Schorske and Marcuse, to practice quite different forms of translation in their subsequent academic careers, one in which values were indissolvably connected to facts.⁵⁰

Recirculation and action at a distance

Latour is keen to emphasize that centres of calculation not only receive and translate information, but also send reconstituted information out. Such recirculation permits the centre to effect action at a distance. To use one of Latour’s examples, the various voyages during the eighteenth century of the British Royal Navy Captains Cook, Vancouver and Bligh provided

plant species for King George III's Kew Gardens that then became a centre of calculation.⁵¹ Under the expert supervision of the naturalist Joseph Banks, in combination with heterogeneous resources, plants were propagated, optimal conditions for growth determined, and new seed varieties collected. Those new seeds were then re-circulated. They were taken to British colonial holdings in India or the Caribbean or SE Asia that produced a cash-crop plantation agriculture that utterly transformed those regions. This was action at a distance with a vengeance.

Many at R&A would have liked their reports to have action at a distance with a vengeance, but it was frequently not the case. They often struggled just to have their voices heard. There was much inter-branch rivalry among intelligence organizations – OSS competed with the Office of Naval Intelligence, the Army's G2, the FBI, and the State Department. Donovan once said (and he was thinking primarily of J. Edgar Hoover, the FBI Director), 'our greatest enemies were in Washington, not in Europe.'⁵²

Key to R&A getting out their message was the circulation of their immutable mobiles, the 3000 research reports that were written, and more than 8000 maps drawn. Specifically, R&A 'established early the principle that all studies should be directed at specific users to fit their particular needs.' The reports were automatically sent to the Washington-based arms of government and military – the White House, the Joint Chiefs of Staff, the State Department, and so on – and then farther a field to probable consumers who were as diverse as specific Army Divisions fighting in Greece to other Allied intelligence forces. They were sent by 'pouch communication' leaving the South building on Monday and Thursday mornings.⁵³

Perhaps the most successful of the R&A projects operated out of the London outpost, the Enemy Objectives Unit (EOU). It became clear in US bombing raids that much ordnance, as well as aircraft and their crew, were wasted on unimportant targets. A rigorous assessment and prioritisation of targets was needed, where assessment and prioritisation were based on the level of damage to Germany's overall war effort, and an evaluation of the costs of bombing to the US Air Force in terms of human lives and equipment. The EOU, consisting primarily of young economists like Charles Kindelberger and Walter Rostow, precisely because it was based in England 'could supply American Air Forces with vital intelligence on European Targets at a time when target analyses in Washington were accumulating in unused files in official safes.' Even the painfully recalcitrant US Army and Navy signals were willing to supply them intelligence. Furthermore, EOU made use of their analytical skills to produce a simple ratio to determine quantitatively the worthiness of any given target: 'impairment to enemy/cost to us.' As a ratio, it did not seem much but it resulted in the concentrated targeting of especially German synthetic fuel plants (Operation OCTUPUS) that grounded the Luftwaffe, and caused Panzer tanks to grind to a halt.⁵⁴

Langer discussed other achievements of R&A in a summing up memo to Donovan written at the end of the war. They included 'the study of German war production through serial numbers,' 'the study of German losses through newspapers,' and 'less concrete but equally important ... the analyses of the intentions of other nations.'⁵⁵ These were important accomplishments, demonstrating action at a distance. But as Latour stresses, any network along which circulation proceeds is only as strong as its weakest link. And there were many weak links in R&A's network. The jealous inter-agency feuding over ownership of intelligence was one.⁵⁶ A deep suspicion by the military that academics cannot contribute to war was another. Competition over who had the ear of the President was yet one more. And even adequate human resources at the 'centre' was another (R&A staff were continually transferred and called up for active duty in one of the

theatres). Certainly the archival records of R&A are full of opportunities for R&A to intervene, to act at a distance, but which were not taken up.

For example, Hartshorne reported to the Board of Analysts that the R&A Report ‘Russo-Turkish relations since 1939’ will be ‘called to the attention of General Donovan as an example of an R&A study whose effectiveness is probably limited by lack of information from the outside agencies.’ Or again, in a series of memos among Edward Ackerman, Donovan and Langer, ‘deep regret’ is expressed that R&A was not able to give Colonel Caraway ‘all the data in completed and final form’ that he asked for in order to prepare a military planner’s appraisal of the Dodecanese area of the Aegean. In this case, ‘a shortage of staff has made it utterly impossible to put together [the data] in acceptable form.’ Or yet again, 1st Lt. Edward Dickinson writes to Langer on October 29, 1943 about ‘destroying the main Marista Bridge of the Sofia-Istanbul railway to prevent or delay shipments to Germany of Turkish chrome ore under the Clodius agreement.’ The issue was whether blowing it up would permanently stop such shipments. Dickinson was in doubt and wanted a report. But clearly one was not produced given that Hartshorne was still discussing the matter with Donovan five months later.⁵⁷

As Latour continually emphasises, maintaining the circulation of knowledge along a network is a fragile accomplishment making action at a distance always an achievement. Boats sink, information is garbled, informants do not inform, potential allies do not listen, promised re-circulated information never arrives, does not work, or is never produced. R&A conformed to these general problems besetting any scientific network, and which explains why it only sometimes achieved action at a distance.

Geographers and R&A

‘Geography finds its chief applications in the military fields of intelligence.’

J. A. Russell⁵⁸

The problem for some geographers working at R&A, though, was that they believed they failed to achieve action close at hand let alone at a distance; that is, their effectiveness was limited even within the institutional confines of R&A. The cause, they suggested, was their inadequate disciplinary training. Their geographical education thwarted their ability to contribute to military intelligence rather than enjoining and enhancing it (as J. A. Russell bullishly asserted).

Those worries, and voiced primarily by younger geographers at R&A, turned on their concern that they lacked the preparation necessary to participate fully in research and analysis especially after the January 1943 Branch reorganization. That reorganization should have been one in which geographers flourished given the new regional geographical focus. Instead, the reorganization made the inadequacies of geographical training seem that much starker. In the original structure of R&A, Geography was its own Division, involving intra-disciplinary discussions. But in the new structure, the team-based, problem-oriented science model, geographers were compelled to interact with others, and to try to translate their vocabularies and skills into the new form of military intelligence. Here problems arose.

There were three published airings of those problems all appearing after the War. The first in 1945 was by Edward Ackerman, the Harvard trained and appointed geographer hired at R&A in Fall 1941, and one of Hartshorne’s first appointments after he became Chief of the Geography

Division. The second in 1946 was a report by the National Research Council's Committee on Training and Standards in the Geographic Profession that Hartshorne chaired. That Committee consisted of fifteen geographers, four were at R&A, and another four worked in other branches of the military and government. And the third in 1948 was by Leonard Wilson who for much of the period was in charge of Map Interpretation in R&A's Map Division.⁵⁹

Ackerman's and Wilson's assessments were the most blunt, the Committee's more muted. All pointed to 'various deficiencies ... in the previous training of professional geographers that handicapped their ability to carry out their work with maximum success.'⁶⁰ Those handicaps included 'ignorance of foreign languages,' 'lack of competence in topical or systematic subjects,' 'superficiality,' absence of 'an established body of principles,' 'lack of sense of problem,' an 'overloading [of] unnecessary material,' the 'need for much more grounding in statistics,' and 'a naïve ... approach to political and economic problems.'⁶¹ For Wilson and Ackerman, the culprit was the regional approach that had dominated American geographical thought. Ackerman said 'our deficiencies can be explained by the pre-war emphasis on the regional method.'⁶² And Wilson wrote:

... war-time research placed geographers trained in the regional human tradition in a vulnerable position regarding their ability to find uncontested areas of study that required their type of training for explanation. Wherever they trained those geographers found themselves confronted by other social scientists, with earlier and better developed claims. Too often discussions with non-geographers ended in debates about the outer limits of regional human geography; and too seldom were geographers able to back up their assertions with the only acceptable proof – useful publications or unique techniques.⁶³

In Latour's terms, the difficulties that at least some geographers experienced at R&A were a consequence of their inability to translate their traditional geographical skills and practices into the kind of work and knowledge regime that military intelligence now demanded. When geographers interacted, as they must, with other social scientists, they 'ended' at the 'outer limits' of their discipline. Translation came to halt, and causing their difficulties.

In this light, what was to emerge later around the quantitative revolution from the mid-1950s, and more generally a systematic approach to geographic study, can be interpreted partly as the culmination of these early frustrations of geography's engagement with other social sciences. This later work was an attempt to go beyond the 'outer limits' of traditional regional geography, to re-translate the interests of geographers so that they became part of the larger network of social science rather than isolated outside it.

That said, there were two areas within R&A in which geographers played leading roles. Both, however, were in fields that required little translation to fit with the work of non-geographers. Prior geographical training was therefore sufficient, although even here there were still some complaints of under preparedness, and a need to do things differently.

The first was in the production of the Joint Army and Navy Intelligence Studies (JANIS), the US complement to the World War II British Naval Intelligence Handbooks produced at Oxford and Cambridge.⁶⁴ In total thirty-four JANIS regional studies were produced between 1943 and 1947. As items of research and analysis, they conformed to the kind of work and product with which geographers had in the past been most associated: the regional monograph. Specifically, the mandate of JANIS was 'to make available in one publication ... all the necessary detailed information upon which may be based a war plan ... in a given area.' R&A was one of twenty

agencies involved in their preparation, but the most important. It had a representative on the Joint Intelligence Studies Publishing Board (JISPB) that oversaw JANIS's production. Furthermore, geographers at R&A were those most heavily involved in their making. Ackerman, who had gone back to Harvard, was brought in as an external reviewer both to vet the template and to review the first volumes. In addition, Kirk Stone was R&A's first representative on JISPB, and succeeded by Edward Ullman who later became JANIS's director.⁶⁵

The idea for JANIS was first mooted in summer 1942, and a template drawn up for the volumes. But following criticism that it was insufficiently sensitive to 'actual areal descriptions,' it was redrafted, and finally an acceptable 'Outline Guide' was agreed in April 1943 (albeit modified further over time).⁶⁶ That Outline mandated that the JANIS reports begin with the physical geography of the region, including 'Landing Beaches,' move to chapters on transportation including 'Port Facilities,' and conclude with a description of the region's human geography, 'Cities and Towns,' 'Resources and Trade,' and 'People and Government.' The volumes that were produced were dryly written and heavily descriptive. They were neither great synthetic pieces of writing like classic regional monographs, nor possessed the readability of some of the Naval Intelligence Handbooks that continued to be used for teaching regional geography courses in some British universities until the 1960s.⁶⁷ The JANIS studies were more instrumental, and narrowly focussed.

Difficulties in the preparation of the JANIS reports surfaced early on. Kirk Stone wrote a dyspeptic memo to Hartshorne shortly after he was appointed to JISPB in 1943. While 'I believe in this whole thing with all my heart and want it to "take" so badly,' other members of the board, he wrote, were 'deadheads.' About one of them, a Major and former insurance salesperson, Stone says, 'he states that he is not a writer; how can one be qualified for a position on this board with such a background and with such beliefs? Other than he is the second highest ranking member of the three, it does not appear that he has much to be proud of when here.' In addition, Stone experienced problems in acquiring information and co-operation from others in military intelligence. While they 'continue to draw their checks,' their purpose, he said, was only to 'fight harder to build their fences higher.'⁶⁸

Ullman who followed Stone was more forgiving of his colleagues, but he was leery of relying intellectually on the 'regional human tradition' to produce the JANIS volumes. Instead, he increasingly argued for, and tried to put in place a 'functional' approach (and anticipating his later post-war intellectual trajectory). Indeed, he used the new model of research that had emerged at R&A as a blueprint to improve the JANIS studies. As he put it in a 1944 memo:

Specialized knowledge of a subject is more important than knowledge of an area. A port for example is a port, and a beach is a beach anywhere in the world. Experience at JISPB and with the OSS for more than 2 two years has demonstrated the practicability of this approach. When the Research and Analysis Branch at OSS was first organized, it was set up primarily on a regional basis. Work on all topological subjects in a country, ranging from railroads to power dams, was carried out by the same individual. Although some good work was produced, most of the product was poorly organized, unbalanced and of only preliminary value. Later the branch was reorganized and some functional sections were set up to deal with specific topics such as transportation, communications, electric power, etc. This specialization allowed workers trained in specific field to concentrate on the field they knew

and also enabled additional personnel to be trained in as much as each analyst was allowed to specialize in one topic until they gained competence. The same procedure has been used in dividing up work for JANIS. The result is a better, more useful product.⁶⁹

In this way, Ullman was trying to push regional geography into a different direction, although clearly there were limits to what he could accomplish, and, in fact, its fulfilment would take almost two decades to realise.

The second leading role geography played in R&A was in the Map Division, and the single biggest employer of geographers at OSS, at its height 38. Arthur Robinson was Chief. He had only recently completed his Ph.D. at Ohio State when he was recruited in October 1941 by Hartshorne who had serendipitously stopped overnight in Columbus, Ohio, to visit a friend while driving back to Washington with his two young daughters.⁷⁰

In a summary report to Langer in September 1945, Robinson defined the three goals of the Division.

1. Procurement and maintenance of a collection containing comprehensive intelligence and reference foreign map coverage or records of its availability.
2. Preparation of map research and analysis studies pointed toward the evaluation and use of maps in the field of intelligence.
3. Preparation of the maps required in the fulfilment of the intelligence functions of the Branch.⁷¹

It was not always easy, though, as Robinson makes clear in his reminiscences. He says, ‘we were never really confident that we were doing the right thing, both technically and conceptually.’ With respect to cartography, there were no trained cartographers at the Division other than Robinson. Instead, there were only ‘engineers or draftsmen.’ ‘They could draw but knew nothing of cartography or geography.’ Furthermore, there was ignorance about the mass production of maps. ‘What non-cartographers might imagine would be simple, mechanical problems, such as lettering, color and pattern production, reverse line work, registering, and so on, mushroomed to enormity.’ Workers in the Division were like ‘a researcher requested to prepare a written report who did not know how to compose sentences or paragraphs or write with a script legible to a typist – and knew he did not know.’⁷²

Leonard Wilson speaks of similar initial problems at Map Intelligence that Robinson also supervised, and charged with acquiring knowledge about and from maps, as well the procurement of domestic and foreign maps. While there existed large collection of maps within the US, catalogue information about them was often non-existent, and when it existed wrong. Wilson and his small staff began from scratch with accumulation, reproduction, classification, cataloguing, and filing, and by the end of the war had accrued 350,000 titles, two and a half million sheets, and an additional 200,000 maps on microfilm. Those maps were acquired from a myriad of sources. Early on Donovan’s nation-wide radio appeal garnered a large number of maps, and later there were swaps with Allied intelligence, secret deals with foreign booksellers, and enemy maps captured following successful battles and the liberation of formerly occupied territories.⁷³

In spite of these problems the Map Division proved itself ‘an essential and integral part of intelligence operations.’ Over its four-year life, it answered 50,000 requests for map information, distributed over 5 million intelligence maps, provided the cartography for four Roosevelt–Churchill

summits, and produced 8200 new maps.⁷⁴ Partly its success can be attributed to the fact that the geographers who worked there did not need, as many of their human-regional colleagues did, to re-translate their knowledge into new forms. The role of maps and the practices of cartography were well established, as were their centrality in prosecuting and winning wars. They did not have to prove themselves, and reflected in the fact that the Map Division after January 1943 was co-equal with the other functional intelligence units at R&A.

Conclusion

C'est magnifique, mais ce n'est pas la guerre.
T. Pynchon⁷⁵

Capt. 'Pirate' Prentice's motto in *Gravity's Rainbow* described at least what he thought about his role as a military intelligence officer. But it is a belief belied by the novel. The boffins and mad scientists, the lush maze of initials, the seedy laboratories, and even the reference books that populated Pirate Prentice's world shaped, directed, and contorted the war, made it into something different than it would have been otherwise. Military intelligence might be magnificent but it was still war.

R&A engaged in war by the systematic application of social science. It was not the first institutional body to do so, but it was hitherto the most comprehensive and organized. I argued that Bruno Latour's work provides the basis for an understanding of the operations of R&A, as well as the role of geographers within it. Latour is interested in the mechanics of acquisition and dissemination of scientific knowledge, 'science in action.' While the context is different, R&A was fundamentally also about knowledge acquisition and dissemination, military intelligence in action. Given this equivalence, Latour's vocabulary and explanatory framework are well suited. They provide an understanding of the larger functions, apparatuses, and practices at R&A, as well as the role and problems facing particular groups of social scientists working there such as the geographers.

This last point goes to a theme implicit in the paper, the relation of war to geographical thought. The role of geographers in war is now well documented.⁷⁶ Brian Hudson argues that the very institutionalisation of geography as an academic discipline in nineteenth century Western Europe was partly a consequence of the subject's strategic military potential.⁷⁷ Geographers could help win wars, as well as to conceive territorial conditions for peace. In such work, geographers applied their traditional geographical training to military ends — by drawing and interpreting maps, by interpreting topographical features, by writing monographs about regional boundaries. Geographers did what they always did, and while they might have come out of war as changed individuals, the discipline they practiced did not significantly alter.

This was less true for American geography after the Second World War. The discipline began to change in response to its application, or in this case lack of application, to military ends. The very experiences of some of the geographers at R&A as they tried to apply their geographical training to war altered their conception of geographical research, helping to propel the discipline to a different form (and seen in later post-war writings of such R&A alumnae as Edward Ackerman, Chauncy Harris, and Edward Ullman). It took a long time, but by the late 1950s, parts of human geography began to model themselves on research practices introduced at R&A

emphasising multi-disciplinarity, team-based collaboration, problem-focussed research, and rigour and numerical methods. Approaches to war now shaped geographical thought.

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Notes

1. T. Pynchon, *Gravity's Rainbow*, New York, 1975, 76.
2. Pynchon, *Gravity's Rainbow*, 1975. The quotes are from pages 18, 17, 76, and 77 respectively.
3. The gendered nature of “defence intellectuals” is well explored by C. Cohn, Sex and death in the rational world of defense intellectuals, *Signs: Journal of Women in Culture and Society* 12 (1987) 687–718. Apart from pointing to the obvious fact that most defense intellectuals are men, she argues that their research and analysis is at every turn coloured by masculinism. Katz in his study of the OSS begins to try to find the almost exclusively female producers of ‘4000 cubic feet of typescript ... [whose] only archival trace were [their] ... initials at the bottom left hand corner’. B. Katz, *Foreign Intelligence: Research and Analysis in the Office of Strategic Services 1942–1945*, Cambridge, MA, 1989, 25. Mechtild Rössler, however, says that women at OSS were not confined to the typing pool, suggesting that up to 25% of the research force was female, and often engaged in espionage because they were less likely to be caught. M. Rössler, Geographers and social scientists in the office for strategic services (OSS) 1941–45, in: V. Berdoulay and J.A. van Ginkel (Eds), *Nederlandse Geografische Studies 206: Geography and Professional Practice*, Utrecht, 1996, 75–85.
4. Michael Heffernan provides a useful account of British military intelligence up to the end of the First World War, the origins of which are historically longer standing and more complex than in the United States. M. Heffernan, Geography, cartography and military intelligence: the Royal Geographical Society and the First World War, *Transactions of the Institute of British Geographers* 21 (1996) 504–533.
5. The three primary locations for the Manhattan Project were Los Alamos, New Mexico, Oak Ridge, Tennessee, and Hanford, Washington. Some 30 other research sites across the US also contributed. Consultants and active researchers working on the Manhattan Project included Niels Bohr, Enrico Fermi, Richard Feynman, Leo Szilard, and Edward Teller.
6. R. Buderer, *The Invention that Changed the World: How a Small Group of Radar Pioneers Won the Second World War and Launched a Technological Revolution*, New York, 1996.
7. Bush claimed proximity fuses increased the effectiveness of weaponry sevenfold, neutralising V1 rockets, kamikaze Japanese pilots, and producing victory at the Battle of the Bulge. The nature and historical development of proximity fuses is exhaustively discussed at, <http://www.history.navy.mil/faqs/faq96-1.htm#anchor1191195>.
8. There were at least two historical precedents for OCI/OSS. The *Comité d'Etudes* established in Paris in February 1917 was made up among others of historians, economists, and geographers, and published a series of volumes on France, its colonial holdings, and its prospective role in the New World Order. Vidal de la Blache was a prominent member. Similarly, the Inquiry founded in April 1917 in New York employed at its height 150 researchers across a range of disciplines, and engaged in fact finding and political geographical interpretation. Isaiah Bowman was key, and accompanied Wilson to the Paris Peace Conference in 1919. Unlike the *Comité* and the Inquiry, however, OCI/OSS was concerned with using social science for immediate wartime strategic military ends and tactics. While

- OCI/OSS represented an archive of information, it emphasised above all social scientific *analysis*. Michael Heffernan writes about the *Comité*: Mars and Minerva: centres of geographical calculation in an age of total war, *Erkunde* 54 (2000) 320–333. History, Geography and the French national space; the question of Alsace-Lorraine, 1914–1918, *Space and Polity* 5 (2001) 27–48. The first of Heffernan's articles cited also discusses the Inquiry. A more extensive treatment, emphasising especially the role of Bowman, is found in N. Smith, *American Empire: Roosevelt's Geographer and the Prelude to Globalization*, Berkeley, 2003, chs. 5 and 6.
9. Both the July 11 Executive Order that created OCI, and the 'Military Order of June 13, 1942,' that transformed the OCI into the OSS are reprinted as appendices in T.F. Troy, *Donovan and the CIA: History of the Establishment of the Central Intelligence Agency*, Frederick, MD, 1981. The quote is from page 423. Numbers of staff employed at OSS increased precipitously over the course of the war from 2,000 at its formation to over 13,000 by 1944.
 10. R. Hartshorne, *The Nature of Geography: A Critical Survey of Current Thought in the Light of the Past*, Lancaster, PA, 1939. Neil Smith argues that by focussing on only geography's past, and in particular, one national version of that past, Germany's, Hartshorne 'committed geography to a museum-like existence. The museum perimeter was jealously fenced by a ring of conceptual distinctions that kept geographers in and effectively discouraged would be intruders'. N. Smith, Geography as a museum: private history and conservative idealism in *The Nature of Geography*, in: J.N. Entrikin and S.D. Brunn (Eds), *Reflections on Richard Hartshorne's The Nature of Geography*, Washington DC, 1989, 91–120, 96. Other, often contextual, interpretations of Hartshorne's book are found in the same volume in which Smith's essay appears. Hartshorne's own account of how he came to write *The Nature* is found in R. Hartshorne, Notes towards a bibliography of *The Nature of Geography*, *Annals of the Association of American Geographers* 69 (1979) 63–76.
 11. A. Kirby, What did you do in the war, daddy? in: A. Godlewska and N. Smith (Eds), *Geography and Empire*, Oxford, 1994, 300–315, 306. By way of a benchmark the membership of the Association of American Geographers in 1936 totaled just over 200, S. McCune, The young geographers and their research: 1936–1943, *Professional Geographer* 38 (1986) 359–365.
 12. There are some exceptions: D.J. Robinson, On Preston E. James and Latin America: a biographical sketch, in: D. Robinson (Ed.), *Studying Latin America: Essays in Honor of Preston E. James*, Syracuse, NY, 1980, 1–101; Kirby, What did you do in the war, daddy? M. Rössler, Geographers and social scientists in the office for strategic services (OSS) 1941–45, in: V. Berdoulay and J.A. van Ginkel (Eds), *Nederlandse Geografische Studies 206: Geography and Professional Practice*, Utrecht, 1996, 75–85. A few reminiscences exist such as K. Stone, Geography's wartime service, *Annals of the Association of American Geographers* 69 (1979) 89–96. A.H. Robinson, Geography and cartography then and now, *Annals of the Association of American Geographers* 69 (1979) 97–102. C.D. Harris, Geographers in the US Government in Washington, DC, during World War II, *Professional Geographer* 49 (1997) 245–256. There are also scattered references in P.E. James, *All Possible Worlds: A History of Geographical Ideas*, Indianapolis, IN, 1972; J.A. Russell, Military geography, in: P.E. James and C.F. Jones (Eds), *American Geography: Inventory and Prospect*, Syracuse, NY, 1954, 485–495.
 13. OSS came to be divided into five main branches, one of which was R&A. The other four were Secret Intelligence, Secret Operations, Morale Operations, and X2 (counter-intelligence).
 14. Latour's writings are numerous. Four key books that outline his ideas are: *Science in Action: How to Follow Scientists and Engineers around Society*, Cambridge, MA, 1987; *The Pasteurization of France*, Cambridge, MA, 1988; *We Have Never Been Modern*, Cambridge, MA, 1993; *Pandora's Hope: Essays on the Reality of Science Studies*, Cambridge, MA, 1999. Latour's ideas are widely discussed by geographers. Two early users were J. Murdoch, Inhuman/nonhuman/human: actor-network theory and the prospects for a nondualistic and symmetrical perspective on nature and society, *Environment and Planning D: Society and Space* 15 (1997) 731–756. N.J. Thrift, *Spatial Formations*, London, 1996.
 15. Latour, *The Pasteurisation of France*, 1988.
 16. The model appears as chapter 6, Centres of calculation, in: Latour, *Science in Action*. It has been discussed and developed by both historians and geographers: A. Pagden, *European Encounters with the New World*, New Haven, CT, 1993; M. Bravo, Ethnographic navigation and the geographical gift, in: D.N. Livingstone and C.W.J. Withers (Eds), *Geography and Enlightenment*, Chicago, 1999, 199–235. Particularly germane to my paper is M. Heffernan's article that uses the idea of centres of calculation to understand the contributions of geographers in the UK, France,

and the USA to military and political intelligence during the First World War, and its immediate aftermath: Mars and Minerva, 320–333.

17. While translation is couched often in terms of combining different human and non-human elements, Latour makes clear that translation applies also to the joining of different kinds of texts, or even manipulations within texts. For example, ‘equations are sub-sets of translations and should be studied like all other translations’: *Science in Action*, 238–239. More generally, the issue of translation arises whenever different objects, texts, skills, or even people, come together to produce a common product. Sometimes translation fails, however, because differences are too great. But even then, re-translation is possible, although eventually it too may falter. Trevor Barnes uses the idea of translation to understand the history of the regional science movement, *The rise (and decline) of American regional science: lessons for the new economic geography?* *Journal of Economic Geography* 4 (2004) 107–129.
18. Katz, *Foreign Intelligence*, xii.
19. Quoted in *Office of Strategic Services: America’s First Intelligence Agency*, <http://www.cia.gov/cia/publications/oss/art02.htm>.
20. C. Ford, *Donovan of OSS*, Boston, MA, 1970; T.F. Troy, *Donovan and the CIA: History of the Establishment of the Central Intelligence Agency*, Frederick, MD, 1981.
21. R&A was established on July 31st 1941, and became operational on August 27th. The Donovan quote is from *Office of Strategic Services: America’s First Intelligence Agency*, <http://www.cia.gov/cia/publications/oss/art02.htm>.
22. Latour, *Science in Action*. The quotes are taken respectively from pages 254, 239, and 222.
23. Langer titles a memo to Donovan, ‘Assets of the R&A Branch,’ 23rd August 1945, RG226, Box 9, Folder 3, NARA.
24. By the end of the war, there were a dozen such outposts. The first was set up in London in April 1942 (and even makes it into *Gravity’s Rainbow*). They functioned primarily as subsidiary centres of calculation, feeding information back to R&A in Washington, although they did have some local autonomy.
25. *Office of Strategic Services: America’s First Intelligence Agency*, <http://www.cia.gov/cia/publications/oss/art02.htm>.
26. In an admittedly light-hearted classification drawn up by Wallace Atwood in December 1939 of number of citations, Hartshorne was already at ‘Genius’ standing. He had 45 citations, James 34, and Atwood himself zero (and so was designated by his own scheme as an ‘Idiot’); D.J. Robinson, On Preston E. James and Latin America: a biographical sketch, in: D.J. Robinson (Ed.), *Studying Latin America: Essays in honor of Preston E. James*, Syracuse, NY, 1980, 1–101, 60, fn. 132. Robinson’s chapter is the source about the meeting at which James suggested Hartshorne as Chief of the Geography Division, pages 62–63.
27. B.M. Katz, The criticism of arms: the Frankfurt School goes to war, *Journal of Modern History* 59 (1987) 439–475. A. Söllner from political dissent to scholarly integration: the Frankfurt School in American Government, 1942–49, in: B. Robbins (Ed.), *Intellectuals: Aesthetics, Politics, Academics*, Minneapolis, 1990, 225–244.
28. William L. Langer to William J. Donovan, Assets of the R&A Branch, 23 August 1945, page 1, RG 226, Box 9, Folder 3, NARA.
29. Functions of Research and Analysis in strategic services, R&A No. 2700, no date, page 8, RG 226, Box 9, Folder 3, NARA. The collecting began almost as soon as R&A was created, and continued throughout the war. For example, in July 1942, Kirk Stone was sent to rifle through the holdings of Pan Am Airways in San Francisco and Seattle and brought back Pacific airline route manuals, 625 maps, pictures of ‘Pacific stations,’ and meteorological data. Kirk H. Stone to William J. Donovan, July 1 1942, RG 226 Entry 1 Box 7, Folder 14, NARA. That said, prising lose information could be difficult especially from other branches of the US military and its allies. The Projects Committee minutes for October 19 reported that ‘Mr Hartshorne stressed the difficulty, under severe circumstances, of getting material from military agencies’ Projects Committee Minutes of Meetings, Book 1, October 19 1942, RG 226 Entry 59, Box 1. The Army and Navy signals intelligence were especially resistant. In his history of American secret intelligence, Christopher Andrew says R&A ‘were denied access to the best intelligence of the war, Ultra and Magic [decoded enemy intercepted signals], and their work suffered accordingly’. C. Andrew, *For the President’s Eyes Only: Secret Intelligence and the American Presidency from Washington to Bush*, New York, 1995, 133.
30. Intelligence Photographic Documentation Project: Memorandum for Field Terms, no date, page 2, RG 226, Box 4, File 10, NARA.
31. Two memos from Charles Fahs to William L. Langer and Edward A. Mason, Materials on the Far East which we desire from the USSR, 15th January, 1944, RG 226, Roll 103, frames, 24–28, NARA.

32. Functions of Research and Analysis in strategic services, R&A No. 2700, no date, page 12, RG 226, Box 9, Folder 3, NARA.
33. R&A Administrative Regulation, January 21, 1943, page 4, RG 226 Entry 1, Box 1, Folder 2, NARA.
34. William Langer to Kermit Roosevelt, March 5th, 1947, quoted in Katz, *Foreign Intelligence*, 22.
35. K. Stone, Geography's wartime service, *Annals of the Association of American Geographers* 69 (1979) 89–96, provides a good account of the nature of co-operation that existed between geographers and those in other disciplines at R&A. Preston James in a letter to Chandler Morse, head of the London R&A outpost, complained about 'a certain amount of friction at the so-called working level ... between geographers and economists,' Preston James to Chandler Morse, 3rd August 1944, RG 226, Entry 146, box 83, NARA, quoted in M. Rössler, Geographers and social scientists in the office for strategic services, 75–85, 78. It was also telling that Hartshorne wrote a memo to Langer on 'Branch morale' four months after the new organisational form of enforced interdisciplinary co-operation was enacted, and began, 'The honeymoon is long since over.' Richard Hartshorne to William Langer, Branch morale, 9th June 1943, RG 226, Box 1, Folder 18, NARA.
36. Functions of Research and Analysis in strategic services, R&A No. 2700, no date, pages 2–3, RG 226, Box 9, Folder 3, NARA.
37. Functions of Research and Analysis in strategic services, R&A No. 2700, no date, page 2, RG 226, Box 9, Folder 3, NARA.
38. Katz, *Foreign Intelligence*, 5; Projects Committee Minutes of Meetings, November 18, 1942, RG 226, E59, Box 1.
39. 'All requests for studies are referred to the [Projects] Committee and it considers all projects for studies instituted within the Branch. It assigns priorities and designates what division is to be responsible and what other units should cooperate or be consulted in the preparation of the work. Finally, it passes upon [sic] finished reports and controls their distribution.' Functions of Research & Analysis in Strategic Services, no date, RG226, Box 9, Folder 3, NARA.
40. The reviews could be tough. One reviewer for R&A Report 1589, Grain Requirements of Western Yugoslavia, noted, 'The author uses "banovina" as the plural, whereas it is actually the singular, and the plural should be "banovine" or "banovines".' Reviewer's report, December 3 1943, RG 226, E 60, Box 1, NARA. On the process of the production of reports, see also B. Smith, *The Shadow Warriors: OSS and the Origins of the CIA*, New York, 1983, 363. There was no prescribed length for the reports or a set structure. Authors should strive for 'terseness and clarity,' and a report's organisation should 'fit the specific purposes for which they are intended.' R. Hartshorne, Draft of proposed guide to preparation of political reports, pages 10 and 9, no date, RG226, entry 37, Box 5, Folder 3, NARA.
41. Projects Committee – Minutes of Meetings, 8th September 1943, and 17 April 1944, RG 266, Entry 59, Box 2, NARA.
42. Katz, *Foreign Intelligence*, 15.
43. R. Hartshorne, Draft of proposed guide to preparation of political reports, pages 7, 8, and 10, no date, RG226, entry 37, Box 5, Folder 3, NARA.
44. Richard Hartshorne to Sherman Ken, R&A No. 2345, page 1, 15th June 1945, RG 226, Entry 1, Box 4, Folder 1, NARA.
45. R&A reports do not have author's names. Hartshorne's memo to Langer about the paper, however, implies Marcuse is an author. Richard Hartshorne to William L. Langer, Issues raised by the Europe-Africa Division, 23rd July 1945, page 3, RG226, entry 1, Box 4, Folder 1, NARA.
46. Richard Hartshorne to Sherman Kent and Lt. Carl E. Schorske, R&A No. 1549, page 1, 14th July 1945, RG 226, Entry 1, Box 4, Folder 1, NARA.
47. The quote from Schorske is found in a memo from Richard Hartshorne to William L. Langer, Administrative problems involved in the current controversy with the Europe-Africa Division, 23rd July 1945, page 3, RG226, entry 1, Box 4, Folder 1, NARA. The title of Kent's memo is found in a second memo from Richard Hartshorne to William L. Langer, Issues raised by the Europe-Africa Division, 23rd July 1945, page 3, RG226, entry 1, Box 4, Folder 1, NARA.
48. The memo is divided into two parts: the first reaffirming the structure of decision-making in the Branch, and Hartshorne's authority within it; and the second repeating unfavourable comments from referees (who included Hartshorne). Memo from Richard Hartshorne to William L. Langer, Issues raised by the Europe–Africa Division, 23rd July 1945, page 3, RG226, entry 1, Box 4, Folder 1, NARA.

49. There were several reasons for the dissolution of OSS. President Roosevelt's death in April 1945, and his succession by Truman, was the important catalyst. Donovan was Roosevelt's friend, not Truman's. Further, Truman was anxious to disband the apparatus of war quickly, and more generally, was suspicious of peacetime espionage (which he regarded as an 'American Gestapo'). Donovan's wartime clashes with Edgar Hoover, who remained head of the FBI after the war, as well as with other chiefs of military intelligence further hobbled OSS's future. The highly critical Park report that alleged gross incompetence and waste at OSS that was given to Truman just after he took over the Presidency sealed the issue. However, four months after disbanding OSS on September 30th 1945, the National Intelligence Authority was created, giving way in September 1947 to the Central Intelligence Agency. A good account of the demise of OSS and the rise of the CIA is found in Andrew, *For the President's Eyes Only*, ch. 5.
50. Richard Hartshorne to William L. Langer, Issues raised by the Europe-Africa Division, 23rd July 1945, RG226, entry 1, Box 4, Folder 1, NARA. Much of Hartshorne's subsequent post-war career at the University of Wisconsin turned on defending his pre-war *The Nature of Geography* and its view of the region as an 'element complex' of objective facts. While the boundaries of regions themselves could not be objectively described, the elements that composed them could. Hartshorne's exact definition of the region has been a vexed one, but Robert Sack provides a lucid account in Chorology and spatial analysis, *Annals of the Association of American Geographers* 64 (1974) 439–452. Schorske's writings are numerous, but his article, The new rigorism in the human sciences, 1940–60, *Daedalus* 126 (1997) 289–309 offers both a critique of objectivity and a discussion of an alternative. Marcuse's writings are also numerous. An excellent commentary is B.M. Katz, *Herbert Marcuse and the Art of Liberation*, London, 1982.
51. Latour, *Science in Action*, 220.
52. C.T. Pinck and D. Pinck, The best spies didn't wear suits, *The New York Times* (December 10, 2004).
53. Functions of Research & Analysis in Strategic Services, no date, page 4, RG226, Box 9, Folder 3, NARA; R&A Administrative Regulation # 2, March 12 1943, RG226 Entry 1, Box 1, Folder 2, NARA.
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