Networked Assemblages and Geopolitical Media: Governance, Infrastructure and Sites in BBC Radio

Patrick Weir

Department of Human Geography, Planning and International Development Studies, University of Amsterdam, Amsterdam, The Netherlands

ABSTRACT

The development of radio as a communication and broadcasting technology has been vital to popular, formal and practical geopolitics. This paper contributes to the nascent literature on assemblage thought in geopolitics by considering radio as a historical iteration of “the media”. Through this dialogue, it is suggested that British Broadcasting Corporation (BBC) radio is both a material and discursive assemblage, operating at multiple scales, sites and intensities of governance. The paper argues that radio cannot be seen simply as a vehicle for producing popular geopolitical imaginaries, nor as a neutral military or cultural diplomatic tool. Contributing to the use of assemblage and actor–network thought in historical–popular geopolitics, the paper begins by articulating the benefits of certain elements of these theoretical registers to the sub-field in general, before moving onto a series of empirical fragments from the archive to illustrate these abstractions in a more concrete manner. First, it does so by considering the early governance and regulation of radio in the 1920s, then the forces producing the BBC’s Middle Eastern Relay network during the late 1960s. The paper concludes with a further call to take materiality seriously, particularly in future popular geopolitical research dealing with media networks.

Introduction

Almost 50 years separated the first transatlantic radio transmissions in 1901 and the beginning of the Cold War in the late 1940s. The profound shift in the understanding of communication and action-at-a-distance that occurred during this period came about in part through radio technologies re-shaping the fields of communication, trade, warfare and entertainment. Consequently, radio broadcasting became a vital presence, entwined with the spheres of military and domestic politics. The geopolitical effects of this emergent technology included the rhetorical signalling of information broadcasts by world leaders; the growth of a truly global news environment; transmission monitoring and early warning system radar “nets” constructed by the US and the USSR; clandestine signals intelligence.
broadcasts and the cultural diplomacy of various “free” radio stations in Europe, along with the insurgent power of anti-colonial revolutionary broadcasting in the non-aligned world.

During this period, the non-military activities of the British Broadcasting Corporation (BBC) emerged as an important but often overlooked element of the politics of British power projection, representing a significant tool for the rapidly decolonising territories of the former British Empire: a material infrastructure that could outlast a formal imperial retreat and retain geopolitical influence (Pinkerton 2007; see also Pinkerton 2008; Pinkerton and Dodds 2009). Despite this importance, systematic collections of BBC radio transmissions from this era are few. What remains, however, are extensive (if not exhaustive) paper archives that provide insight into how the material infrastructure of radio was constructed, developed, maintained and projected as part (or not) of the British government’s information policy apparatus.

The purpose of this paper is to address the late/post-imperial apparatus of BBC radio as a geopolitical assemblage and, through the use of assemblage thought, to demonstrate how this imperial context drew all kinds of objects into its ambit, which are now often forgotten in conventional narratives. In this, I understand assemblage theory to be the reading of social formations at any scale, as composed of heterogeneous material and discursive components, their identities distinguished only by strength of relations between their constituent parts at any given time, rather than any a priori structuring principles (DeLanda 2006). This theoretical focus, alongside empirical fragments drawn from the written archive of BBC radio, will also help to identify processes considered to be archetypically aural in a different register.

Drawing on a sequence of fragments from the archive of British radio broadcasting and diplomatic history, this paper illustrates the benefit of using assemblage theory to understand radio broadcasting and the BBC as one aspect of Britain’s late-imperial project (DeLanda 2006; DeLanda 2015; Deleuze and Guttari 1988). Work on assemblage theory has taken root in human geography and has recently extended to investigations of contemporary and historical geopolitics (Dittmer 2013, 2016; Squire 2016). For more actor–network perspectives, see Davies (2013), Depledge (2015), and Müller (2012, 2015). I extend this work to argue that these theoretical frameworks are also germane to the study of complex technical–political object systems such as radio broadcasting. This therefore takes on the challenge articulated for popular geopolitics to look at the “[a]doption of a network ontology, which links together the people associated with media . . . and the objects necessary for the constitution of the media . . . in a techno-cultural assemblage the effect of which is the media” (Dittmer and Gray 2010, 1673). As such, the paper enlivens archived traces of radio in order to re-emphasise radio’s centrality to the geopolitics of the early-mid twentieth century.

In the age of social media, it is easy to forget the material assemblages upon which communication is predicated. This paper highlights one such
assemblage: the BBC during the twilight of the British Empire. Building on a nascent but existing literature relating assemblage thinking to historical iterations of geopolitics and technology, the paper utilises fragmentary moments from the radio archive to engage its material-discursive valences. Attending to how “Assemblage is a mode of ordering heterogeneous entities so that they work together for a certain time” and furthermore that “There are new, unexpected realities at each turn, entities congeal just to fall apart in the next instance and desire to reach an elusive goal” (Müller 2015), thereby enables us to only see part of any given network or assemblage at any given time. Our accounts of these socio-material constellations will, therefore, necessarily be partial and fragmentary.

The paper begins by locating the theoretical apparatus of assemblage as it relates to the paper’s empirical resources, identifying its utility for a historical understanding of BBC radio infrastructures as bound up with popular geopolitics. The following sections draw on archival research at the BBC and National Archives to demonstrate the material-geopolitical significance of radio in relation to Britain, first in the early years of radio spectrum regulation and, later, during the 1960s Cold War period, as exemplified by the construction and maintenance of the BBC’s Middle Eastern Relay System (MERS).

The role of radio as a geopolitical medium and as a practice has been comprehensively explored in the work of Alasdair Pinkerton, whose identification of the concept of “radio geopolitics” and, in particular, the BBC World Service, is invaluable to understanding how the BBC sought to retain its “voice around the world” through the maintenance of the World Service, and the role of this “voice” in the military context of the Falklands conflict (Pinkerton 2007; Pinkerton and Dodds 2009). I take Pinkerton’s work as a starting point, particularly in relation to the importance of the radio archive it opens up, drawing new empirical case studies into dialogue with the assemblage and materialist thinking outlined above. The reason for this is twofold: first, at a theoretical level, to add to the nascent but growing literature on assemblage theory and geopolitics through particular attention to “the media” and popular geopolitics; and second to bring to the fore a series of “radio geopolitics” case studies from the early and mid-twentieth century to contribute to studies on the history of geopolitical media in their own right.

The employment of an assemblage-based approach to this material also seeks to adopt and elaborate on Pinkerton’s distinction between radio power (conceived as a historical account of the differential development of radio worldwide) and radio relations, or “[a] tool of cultural exchange and public diplomacy” (Pinkerton 2007), bringing a more materialist dimension to the topic. Utilising this as a starting point, I argue that assemblage thought can synthesise the dimensions inherent in both of these heuristics to arrive at a material-symbolic reading of radio geopolitics. Crucially, I also take the position here that the theoretical apparatus of assemblage is intended to be
descriptive, rather than explanatory. In the words of John Law, this is intended to enable researchers to

[t]ell stories about how relations assemble or don’t. As a form, one of several ... best understood as a toolkit for telling interesting stories about, and interfering in, those relations ... a sensibility to the messy practices of relationality and materiality of the world. (Law 2009, 142)

In the sub-field of popular geopolitics, this means empowering us with a theoretical vocabulary to engage in the complexities arising from the inter-relation of power politics, technology and representation.

**Assemblage Theory, Popular Geopolitics and “the Media”**

Assemblage theory and its surrounding debates have proliferated in human geography in recent years, particularly through their core claims to recognize the complexity of human/non-human, nature/culture, material/semiotic formations. Central to this is a commitment against either micro or macro reductionism in explanations of these formations. A city, for example, can no more be explained through master concepts such as class, race or identity than it can the aggregate of the communities that compose it or the infrastructures that enable it to function (De Landa 1997). As such, one key characteristic of assemblages is that they are constituted and held together through the internal consistency of their components as related to each other in any given instance, rather than being overdetermined by any one individual/structural factor (e.g. power, dialectic, identity) (DeLanda 2006). Assemblage thinking should not be conceived as homogenous, however, and its popularization is matched by a significant diversity of opinion among its proponents.

As discussed above, I take the position here that assemblage thought includes the similar – although not identical – actor–network sociology of Bruno Latour. As a consequence of his belief in a general inseparability of the domains of nature and culture, Latour argues for the impossibility of separating the material from the semiotic, or assigning agencies independently within them (Latour 1993). Calling for a new vocabulary to deal with this new situation, he states that:

modern societies cannot be described without recognizing them as having a fibrous, thread-like, wiry, stringy, topy, capillary character that is never captured by the notions of levels, layers, territories, spheres, categories, structure, systems. (Latour 1996, 3)

In the idiolect of ANT/assemblage, the term “societies” does not simply refer to human societies, or even to societies where humans are the most numerous actors; all societies contain multitudes of organic and inorganic materials and actors (as well as multitudes of this kind being societies in themselves). I propose here that we bring this sensibility to bear on popular geopolitics by considering media institutions as containing myriad complex, moving parts that cannot be
extricated from each other in their workings. We can begin, then, to view historical events as the outcome of emergent socio-material processes cohering as assemblages whereby “Social worlds are always in a state of becoming, whilst recognising that there are codes and structures that shape and stabilise them at the same time” (Davies 2013, 23); events are neither over-determined by structural conditions, nor the result of chaotic flows.

In practice, this means that we cannot, in principle, reduce the effects of a geopolitical media actor to any one individual, structure or factor, whether this be important people such as managers, engineers, presenters and producers, or legal charters, orientalist representations, speech acts, buildings, regulatory frameworks, or, equally importantly, circuits, aerrals, satellites and screens. All of these components have agency (conceived here as the ability to affect), although not always in proportion to their scalar size or internal complexity. These components act to produce, at the same time, various assemblages including, but not limited to, states, cities, organizations, bureaucracies and policies. It will be the purpose of this paper, then, to engage in a creative “disassembling” of the geopolitical radio assemblage at certain historical moments in order to “show the working”. “The working” in the cases represented in this paper refers specifically to radio as a projection of material and discursive power.

Critiques of assemblage theory have regularly focused on a perceived lack of political engagement or emphasis on the importance of normative political considerations in these models of distributed agency. This is grounded in the perceived marginalization of human intentionality and structural causation, which, these critics argue, has the effect of legitimizing (or at least not challenging) damaging political decisions, policies and individuals by minimizing the individual’s responsibility for their effects. The benefit of engaging assemblage thought for popular geopolitics is that it acts as an augmentation of an already explicitly political critique (of othering, representation, etc.), rather than an attempt to supplant it.

In what follows, I use empirical material drawn from the archive of BBC radio infrastructure, reading this as a component of British decolonization/consolidated retreat, and developing this to highlight the potential of materialist, assemblage-inflected approaches for understanding these infrastructures and the (geo)political forces that surrounded them. The importance of post-colonialism in the development of critical geopolitical critiques of media texts also explicitly informs the later work of scholars of popular geopolitics (Bhabha 2013; Fanon 1994, 68–69; Said 1979). Travel writing and its mass media successor, foreign news, emerged as genres of writing during the eighteenth and nineteenth centuries, respectively, serving as a mode of bringing the “other” under representational regimes of colonialism alongside its material and economic conditions. For Edward Said, for example, this involved the ways in which the politics of domination during the colonial era were not simply conducted through systematic economic imbalance and the
threat of military force, but also through parallel growth of essentialist cultural imaginaries that cited and situated the colonized as belonging to an entirely separate political and social order (Said 1979). The sedimentation of this practice of othering was, Said argued, encoded across genres of literature, art, poetry and travel narratives from the seventeenth century onwards. Such acts of scripting are not simply symbolic; they are also material practices, in the sense that they require a manifestation or inscription or, in the physical world, broadcast capacities in order to do this, and they also bring about states of affairs, imaginaries, etc. David Slater, for example, highlights this in his suggestion that “The coloniality and imperi-
ality of power are rooted in the will and capacity to invade and penetrate – the imperial, as contrasted to the colonial, not necessarily requiring the possession of territory” (Slater 2008, 26).

The manifestations of the colonial/post-colonial world are made visible/ audible at different levels of governance, networks and sites within the radio assemblage. Colonialism is a totalising practice that operates materially at the same time that it operates discursively. Similarly, anti-colonial resistance during the 1950s and 60s, as Franz Fanon illustrated, was simultaneously conducted in both symbolic and material registers, with the Front de Libération Nationale’s (FLN) lived practices of resistance to colonial rule in Algeria augmented by the signal of the radio station The Voice of Fighting Algeria embedded within these practices (Fanon 1994, 68–69). This evidence of material-semiotic entanglement further supports the arguments for actor–networks, assemblage and associated theories, suggesting that it is counter-productive to shape our analyses in a way that reduces one to the other.

The following sections deal with three different examples of the geopolitical radio assemblage: the early governance of the airwaves in Britain and Europe in the 1920s; the development of the MERS in the mid 1960s, and, subsequently, the building of a new relay station on the island of Masirah. These points draw on a range of archival sources, including autobiographies, treaties, regulatory frameworks, maps, diagrams, minutes from meetings and government reports, to build a picture of the radio as a distributed geopolitical assemblage involving multiple human and non-
human agents and the presence of different space/times in its constella-
tion. These particular empirical cases are chosen for the way they illustrate the material-discursive nature of radio broadcasting as it relates to the geopolitical.
Radio and Geopolitics: The Assemblage of BBC Radio in the Early Twentieth Century

It did not take long for radio to become of acute interest to the arms of the British state involved in both technical governance and foreign policy. The conditions for the geopolitics of material and symbolic radio power seen in the Cold War period were established earlier in the twentieth century. It was during this period that it became clear that this new technology would provide various different challenges and opportunities to states and nations, largely based on its relative size, topography and proximity to other “broadcast” competitors. In the United States, for example, the vast spaces and nature of American enterprise meant that broadcasting in the early twentieth century was largely unregulated, diffuse and chaotic, only falling under the auspices of the law where the broadcasting of outright fraud and demagoguery were concerned. Consolidation and spectrum governance, when it occurred, was thus predicated on a profit motive, with little state involvement until 1922 when a national radio conference in Washington DC sought to establish “traffic laws” based on the belief that “[r]adio communication is a public utility and as such should be regulated and controlled by the federal government in the public interest” (Briggs 1961, 1995; Hilmes 2013). In the United Kingdom, however, the power of broadcast speech was taken seriously from the start, and a stringent system of legal regulations was constructed demarcating who was allowed to broadcast and on which frequencies. The following section addresses how the material and the symbolic assemblage of this new “radio power” was negotiated through the role of one BBC engineer in the shaping of early radio policy at a domestic and international level.

If state power sought to rapidly adapt to the novelty of radio technologies, then this kind of governance can be seen, at least in part, as a response to geographical imperatives. The material and symbolic power of broadcasting in a relatively small, densely populated area, as opposed to a vast, sparsely populated one, is obvious: smaller force levels will be required to dominate the air and prevent radio from being used to foment political unrest. The immediate consequence of these restrictions was the closure of the first broadcast entertainment stations in the UK – 2MT and 2LO – and much of their apparatus and personnel were thus brought under the licensing umbrella of the Post Office. This organization then became the British Broadcasting Company, and later the BBC. In this nascent radio ecology, Captain Peter Eckersley was, perhaps, Britain’s first radio celebrity, having risen to prominence broadcasting on 2MT in the early 1920s. Eckersley subsequently became the BBC’s first head of engineering, boasting extensive experience of the developing field of wireless technology from the First World War. It was during this time at the BBC that he worked to create and sustain agreements on the allocation of wavelengths across what was becoming an increasingly crowded European airwave and radio space.
In the remainder of this section, I draw from Eckersley’s autobiography, *The Power Behind the Microphone*, to utilize the tools of assemblage thought outlined above to show both how early radio engineers such as Eckersley became implicated in the material assemblages of broadcasting and the governance assemblages of regulation, and also how the question of the materiality of early radio spectrum governance was shown to be of acute geopolitical concern.

The primitive nature of the relationship between political knowledge and engineering expertise in the early years of wireless transmission was such that broadcasting and regulation evolved indistinctly. Leaps in material capacities needed to be matched by concurrent shifts in thinking about how these capacities affected the geopolitics of inter-state relations. Recounting the beginning of his career with the BBC, Eckersley illustrates some of these problems, and how techno-cultural assemblages such as the BBC needed to be created in order to overcome these:

The BBC was formed as the expedient solution of a technical problem; it owes its existence solely to the scarcity of wavelength … We, the post office, must have the right to decide the power, location and wavelengths of transmitting stations. We shall thus supervise the technical side of broadcasting through our agent: the BBC.  
(Eckersley 1941, 23)

Following his success at 2MT and 2LO, Eckersley was appointed the first head of engineering for the newly formed BBC. This was perhaps in response to the initial failure of the Post Office and British Government to appreciate the potential of Guglielmo Marconi’s equipment, techniques and vision. Eckersley was hastily appointed to a position, the parameters of which he was left to design and establish almost entirely by himself. He was thus a human component implicated in an increasingly dense web of relations with the electrical and conductive equipment he was supposed to be mastering.

I decided to start work by finding a new site for the London transmitter. In those days, to avoid the expense of masts, we generally used factory chimneys to hold up the transmitting aerials… I had to think out a technical policy. I decided that everyone should be able to hear the programme clearly on a cheap set… I wanted to use my skill to enable the listener to forget about the technique of the service.  
(Eckersley 1941, 23)

This statement illustrates the way in which the material pressures on the creation of a viable broadcast system relied, in part, on the way in which the technical configuration of the network could be made to mask its own presence. Thus, the listeners receiving a given broadcast were to be “transported” by the medium while forgetting the apparatus sustaining it. For this to take place successfully, the material components involved had to, to an extent, recede from perception. This withdrawal of the radio set is a *technique*; this was to include all of its material components – thermionic valves, aerial, fuse, circuitry – all of the “invisible” waves it conducts and the apparatus for the broadcasting of these.
All that was to be present to the listener was the sound of the song or voice. It is this negotiation of how to present and obscure various components of the radio network that are likewise central to an understanding of early radio power. Inverting this negotiation, when its reception or signal breaks down, the material components of radio are suddenly brought into presence. This can happen for any number of reasons: other forces or objects act upon the signal (birds, bad weather, broadcasts on nearby frequencies). The result, however, is almost uniformly the same: the object itself becomes suddenly conspicuous, its presence jarring and demanding attention through what the philosopher Martin Heidegger (1962, 103) termed “unreadiness-to-hand”. Rather than simply rendering other spaces purely as a representational medium, for example through a music broadcast from the concert hall or news from elsewhere, radio technology (or more accurately the equipment of tools “ready-to-hand”) actively produces space via the capacity of objects within the equipment to operate successfully in the transmission and reception of electromagnetic waves. The value of thinking assemblage in these registers is clear: they are able to “account for the mobilization, organization and operation of various assemblages composed of bodies, machines, raw matter, ideas, discourses, affects etc” (Bousquet 2013, 95).

In this register, then, the broadcast is territorialized to the extent that its signal is clear, audible and undisturbed, but also to the extent that the organization managing and broadcasting it can control and have primacy over the frequencies it chooses to broadcast on. This is a consequence of the various material components within it acting to code the assemblage as such. When this breaks down, or in the idiolect of assemblage, when it is deterritorialized, these elements become “loosened” and the homogeneity and consistency of the entire assemblage is reduced. The history of early broadcasting and transmission, then, is equally one of friction between developing organizational assemblages of engineers and technologies seeking to overcome these problems inherent to broadcasting. In order for a successful transmission environment to be maintained, the material assemblage of radio equipment and broadcasting had to be brought into a series of relations with legal and regulatory regimes, some of which had to be formulated from scratch. The contact of material, individuals, organizations and geopolitical exigencies all coalesced in the form of the radio assemblage, but they had to be constantly wrestled and disciplined as component parts resist human intentionality.

One reading of the above would view radio technologies as a way of transforming the air itself into what Heidegger terms bestand or “standing reserve” (Heidegger 1977). A mountain (or indeed any other physical geographic feature) is no longer itself; instead, it becomes “enframed” for human use, a potential facilitator or disturbance to the passage of radio waves or, put another way, understood relationally in terms of how it enables or hinders this passage. This is a potential that Eckersley addresses explicitly when he states that:
One of the main difficulties in broadcasting is to get rid of extraneous noises (bangs, crackles, hums, whistles, etc.) which are apt to accompany the reception of programmes. Broadcast intelligence is diffused by modulated waves created by a transmitter; the waves form the link between a unique programme source and the scattered listeners. Wireless waves are unfortunately also created and radiated by electrical machinery, such as trams, refrigerators, flashing neon signs, electric motors and so on. These waves, since they cause interference and are not wanted, are called parasitical waves. The audible signals, I mean the nasty noises, created by parasitical waves made by electrical machinery are referred to as “man-made static.” ... Atmospheric wireless waves are very powerful, they can make noises in sensitive receivers located in England, even though the thunderstorms which create them are taking place in Central Africa. The tropical east and the Gulf of Mexico are also centres of atmospherics. (Eckersley 1941, 65)

These recognitions of the interplay between physical geography, atmospheric conditions and radio reception are peppered throughout Eckersley’s account of his life in radio, juxtaposed with reflections on the embodied nature of listening practice itself:

It is curious to observe the reactions of ordinary people to loud-speaker listening. Nearly everyone likes the loudspeaker to which he is accustomed and detests anything else. This is because the ear gets drugged by the distortions it constantly hears. ... The “intimate” microphone technique brings the enlarged voice into a new kind of perspective, the voice has all the character of softness but, owing to the electrical amplification, the reality of loudness. (Eckersley 1941, 110–111)

The ways in which the material-technical and the embodied filter into the macro-level legal and institutional interplay of international political regimes can be seen in Eckersley’s role in the structuring of international wireless regulation, where this new technology was first brought under the remit of (geo)politics. Charged with representing the intersection of British radio-diplomatic interests, he sought to create this agreement through L’Union International de Radiodiffusion. At a series of meetings during the inter-war years, various engineers, civil servants and diplomats attempted to introduce a rationalised, geopolitical equation for the measuring of claims to exclusive use of wavelengths “Inspired by logical bases of A (area), B (population) and C (commercial importance or number of telephone calls and telegrams sent per annum)” (Eckersley 1941, 89).

The desire on the part of major European powers to rationally manage and allocate (read distribute according to their prejudices) was, however, frustrated by what they saw as the petty intransigence of other continental European nations. Eckersley, chairing a conference in Geneva, illustrates this imperial chauvinism well:

My flow had stopped because I had seen a hand uplifted by a rather shy-looking man sitting half-way down the table.
“Pleeze Mister the President,” he said, “may I talk pleeze in English?” and before I could say that I supposed that was what he was doing:

“Pleeze Mister the president, my country is a very long country with many many beeg mountains and our wave lengths pleeze is a very very short wavelengths. And pleeze…”

“Yes, Yes!” I replied. “I quite understand, but perhaps this rather particular national question could be settled or discussed later; I now want the plan to be considered in its international aspect. As I was saying…”

The little man sat back, looking very miserable. After another 10 minutes of my oratory, up went the hand again.

“Pleeze, my country is a very long country,” he wailed.

“My country is a very long country,” became in after years, the slogan to typify those delegates who never came to a conference without a desire “to come out with more than in I went.” The usual method was to air particular grievances to the complete disregard of general interests and hold up all progress until satisfied. The “long country” people were more successful than they should have been because patience is not inexhaustible. (Eckersley 1941, 87)

I quote Eckersley at length here because he demonstrates a mode of discourse that will come to typify the “soft” colonial/imperial geography of the airwaves. The engineering “equation” on which wavelength allocations were to be based was constructed without reference to physical geographic properties such as the shape and features of mountains, which would have impact on wave propagation. The fact that baseline “area”, “population” and “importance/density” of communications were privileged in the equation further evidences the role of power politics in shaping the material contours of early inter-state radio governance regimes. I will demonstrate this further in the next section, drawing from other radio archives of the 1960s, where the material and the discursive are inextricably bound together. It is through the unruly matter that radio broadcasting attempts to harness, contain and instrumentalise that the forces that press upon the BBC/British attempts to establish a modicum of aerial sovereignty are evidenced, whether this is conceived at an atmospheric, topographical, political or cultural scale. In relation to his discursive constructions, however, Eckersley’s episteme here is that of the rational engineer striving to rise beyond the querulous, feminised nations of Europe whose special pleadings rest on appeals to geography. In fact, Eckersley only manages to achieve anything when he is introduced to a French engineer, Braillard, to whom he

(t)ook an instant liking, a liking for his quick understanding of technical problems, his flair for the political implications of technical proposals, and above all for his ability to translate technical fact into the language of juridical compromise. (Eckersley 1941, 89)

Eckersley also lavishes praise on Braillard for the success of the subsequent Paris conference because Braillard was able to “understand French and the
French” (Eckersley 1941). Eckersley is able to see in Braillard a man with whom he can work, in contrast to the grasping bureaucrats he has hitherto encountered. Braillard’s Frenchness is no barrier to Eckersley because they share a common worldview: that of the (imperial) engineer; in this, the ideology of nationhood can be translated into the professional discourse of scientific rationality. Just as the great power conferences since the nineteenth century had been convened to carve out mutually agreed boundaries on appropriated land, so too were the wireless conferences convened to allocate the global common space of the radio spectrum and specific wavelengths to those states with voice and power enough to claim them. This territorialization of the frequency spectrum, however, was to be done by engaging the engineer’s (apparently) dispassionate gaze. The urgency of thwarting the petty bureaucrats is underlined:

Obviously, said the bureaucrats, no European agreement could possibly be come to now and not very likely in the future. We were wasting our time. But meanwhile reception was being ruined. The howls of some lonely station wandering about in the night with no place to go became ever more plaintive, more piercing... I thought it was a waste of good air not to try. (Eckersley 1941, 88, my emphasis)

Ultimately, the formula was a diplomatic-engineering artifice that bore little relevance to reality as it made no reference to and took no account of the quality of wavelengths allocated: “The plan we built on these ‘logical’ bases was very little different from that ordinary ‘technical-compromise’ plan which I tried to get accepted at Geneva” (Eckersley 1941, 89). This artifice of compromise constructed by the engineering/diplomatic skill of Braillard and Eckersley thus saved (as they saw it) the nascent Union Internationale from the same fate as its geopolitical relative, the League of Nations.7 It also meant that “[t]he jurists were thus satisfied by the mere existence of logical bases even if they were not used. Technicians were delighted because a plan could be accepted which prevented the worst interferences” (Eckersley 1941, 90). The historian of technology, Daniel Headrick, clarified this point well when arguing that new technologies:

...do not spring out of nowhere. While their origin is seldom predictable, their implementation and diffusion result neither from pure technical necessity nor from the rational choices of their inventors or their users. Rather, organizations mediate between the machines and society, influencing both. These organizations—in effect control the flux of interactions between technology and society by purchasing, investing, subsidizing, patenting, sharing or withholding secrets, and many other means. (Headrick 1981, 18)

The international radiotelegraphy conferences of the inter-war years provided the first indications of the problems of sovereignty and governance in relation to the invisible fields produced by radio technologies. Despite this there seemed a remarkable degree of agreement over the regulations for
transmission of telegraph messages across national boundaries. In terms of international relations theory, such agreements could be attributed to the costs of reneging/backsliding/cheating outweighing those of adhering to international agreements over the terms of trans-European telegraphy regulations. Such a view, as Andrew Barry suggested, means that:

Technology . . . is often regarded as something that exists outside of politics. If we understand technology to refer to any kind of association of devices, techniques, skills and artefacts which is intended to perform a particular task, then the deployment of technology is often seen as a way of avoiding the noise and irrationality of political conflict. (Barry 2001, 7)

Where I would diverge and perhaps take Barry’s reading further is that where he identifies broadcast media as a vector of liberal democracy in technological societies, which complicates the relationship between scientific expertise and policy, we must not forget that broadcast media is itself a complex technological infrastructure that is at once material and semiotic.

The establishment of fixed costs per letter in telegram communication and the multiple different, competing material sub-species of telegraph machines across the continent were two key problems for the architects of these regulations. The solution to the former was a qualified reduction of language into code, enabling it to fit the borders of a technical apparatus. Linguistic communication had, literally, to be re-configured to “fit” into the expanding machine networks that began to crisscross physical space in a way that “flattened” local differences in expression and created a standard that could be charged accordingly in multiple places. This process happened relatively late in the development of technologies of communication and supports the view that space-time compression, so often identified alongside the rise of modernity, was, in fact, non-linear, unevenly distributed and non-totalising (Thrift and May 2003). The wording of the early telegraph regulations is instructive as to how certain relations of these early technological-linguistic assemblages came into being. For example, §8 of the International Telegraph Convention of Saint-Petersburg (1865) had already stated that:

Combinations or alterations of words contrary to the usage of the language are not allowed; the same rule applies when the combinations or alterations are disguised by reversing the order of the letters or syllables. Nevertheless, the names of towns and countries, family names belonging to one person, the full names of places, squares, boulevards, streets and other public ways, names of ships, compound words admitted as such in English and French which can be justified if necessary, whole numbers, fractions, decimal or fractional numbers written in words, may be grouped as a single word.8

In practice, this illustrates the geopolitical and techno-cultural forces acting upon the construction of radio assemblages, the essence of the territorializing and deterritorializing facilitated by the material and expressive components of
radio being actively coded and decoded by, and through, linguistic capacities.\(^9\) This was, to use DeLanda’s reading of assemblage thought, yet another mode of linguistic engineering expanding out into the (geo)political field, which he refers to in relation to vernacular standardization, which was to have a lasting impact in relation to its co-evolution with technologies such as the printing press.

This international diplomatic-legal structure of communications governance that had been in the process of being formulated since the 1920s, sought to bind and codify communicative language through machine logic, a complex assemblage of objects, radio waves, legal regimes, scientific-technical discussions and power politics. For language to be “relayed” in this way, it is encoded and decoded through these material circuits, and the regulations, conventions and meetings, such as the ones Eckersley recounts, are central and overlooked components of this geopolitics of the air. Following on from this, I will now move onto the second iteration of the radio assemblage: how material infrastructures in radio networks such as the BBC came into being and were constituted at specific sites, territorializing the radio waves into material-symbolic projections of geopolitical power.

**The Middle Eastern Relay Network**

The affective radio power and soft-cultural diplomacy that the BBC is regularly credited with possessing is, and almost always has been, the result of a vast, unseen network of technical and bureaucratic operations. There are multiple operations that enable and sustain this power, which are important regardless of whether they are decisions that transform radio waves into objects of governance or, conversely, whether the material capacities of radio transmission act to alter forms of communication themselves. As such, in the absence of broadcast materials, I turn to materials held in the BBC’s written archives to narrate the “moving parts” of the radio assemblage: the objects, institutions, individuals and ideas existing in a specific historical-cultural moment of British broadcasting. Such a reading produces the radio assemblage as a geopolitical effect of these components, manifested in the archived material relating to this assemblage in topographical space.

The MERS was a vital part of the BBC and Diplomatic Wireless Service’s (DWS’s) strategic apparatus of broadcast to the Arabian Peninsula, parts of North Africa to the West, Iran and Afghanistan to the North, and as far east as present-day India and Pakistan. The system was initially conceived as a “chain” of stations that relayed BBC programs from London, via Cyprus, to the Middle East and beyond. By the mid 1960s, however, the need for a major program of investment in the technical capacities of the system was apparent, in order that they keep pace with both the BBC’s aims as a broadcaster, and the Foreign and Commonwealth Office’s political aims to retain British influence by means other than colonial occupation. In the case of the British MERS, which moved from
Perim, Aden (Figure 1), to the island of Masirah, Oman (Figure 2) in the Arabian Sea, this manifests itself as a shifting assemblage of institutions, people and matter, tidal currents and weather, diesel generators and bureaucratic meetings, military outposts and anti-colonial affect. Added to which there were thousands of radio sets primed to receive these signals, spaces producing and productive of the technologies, institutions, individuals and histories composing them. In the following sections, ideas about the network and the bureaucratic assemblages involving a particular set of sites around the MERS construction and maintenance during the 1960s are addressed in order to
consider the contexts, processes and interactions of objects and temporalities in radio spaces.

Figure 3 shows a coverage map held in the engineering section of the BBC’s written archives. It is at the same time a technical, organizational and cultural document and, like Latour’s mobile cartographies, contains multiple space-times layered within it. The geopolitical imaginaries embedded within this kind of mapping is, as discussed above, that of the engineer, where the relevant cartographic legends are radii of projection from various fixed points in space and time, along with other potentialities in the future (i.e. the areas of “planned coverage”). The medium-wave transmissions are broadcasts between 520 Khz and 1611 kHz and, as the map shows, they cannot travel as far on their own as short-wave transmissions that are able to “skip” or “bounce” off the ionosphere. Consequently, the points on the map are “relay” stations, whereby broadcasts are relayed in a particular assemblage of objects acting at a distance.

As a textual artefact, the colouration indicating coverage patterns on the map (both existing and planned) belong to the imaginary of colonial outposts and contact zones of the mid-late nineteenth century. The arcs of transmission, demarcating the frontiers of coverage yet to be “explored”, however, were still
being pursued in 1967, a time when television was beginning to make its mark and threatening to supplant radio’s status as the dominant broadcast medium.

The colonial intertext at work in Figure 4 can be said to reflect the anxieties of the early 1960s over decolonisation, the loss of empire and the desire to retain some or any degree of control and influence. These were all regions of the empire through which, in 1960, the British Prime Minister Harold Macmillan had stated that “the winds of change” had been blowing in the previous decade, manifested through the decline of British influence in and control of large areas brought about as a result of national consciousness exploding into full blown independence movements. The coverage maps can be seen as indicative of just one facet of a post-imperial cartography, expressed in the short-wave coverage map that shades areas in the same striking pink as that used to produce imperial maps of the late nineteenth century, delineating British imperial territories. Reports from the BBC’s external monitoring service in 1968 show how these coverage maps did not always correspond to received signal strength and led to highly differential local experiences of reception in some of these zones. This contrasts sharply with the idealised (colonial) mode of understanding expressed by the cartography above and highlights the friction between image and matter present in geopolitical media assemblages:

Figure 3. BBC External Services Map showing medium-wave coverage: existing (shown in pink) and proposed (shown in blue) (1967) (Copyright BBC Written Archives Collection).
On the UK channels, in contrast the strength of the Ascension Relays in the West, central and South Africa was such that the full extension of the telescopic rod aerial was not always necessary for good reception... Very few of the ordinary listeners could specify the channels they received, the comment being “The BBC comes up here, here and here and we choose”. In West Africa, including Brazzaville, the popular tuning points are almost always signals from Ascension – in these areas, particularly in the morning period, it is a matter of tuning through and stopping at the first strong signal which will almost certainly be Ascension.11

Following on from the proposed “imperial chain”, which was to be constructed by Marconi’s Wireless Telegraph Co. for the Imperial Telegraph Service in the early twentieth century, the generation of relay stations proposed in the late 1960s would make broadcasts from London more audible to zones relative in distance and area to their transmitter power.12 These maps shift from chains to ranges, overlapping as frequencies became congested. They still operate, but at the traditional (geo)political level of force multiplication and governance: a more powerful transmitter means less licence fee spent, greater distance broadcast and a larger audience reached (captured). The technical discussions, in this sense, are similar to the parallel debates in the 1960s amongst defence intellectuals and military стрategic planners about the control and domination

Figure 4. Short-wave coverage map: existing (coloured in pink) and planned (coloured in blue), 1967(WAC E36/35/1 (1967) Copyright BBC Written Archives Collection.
of space and utilizing the maximisation of destructive payloads of nuclear weapons transmitted over distance (see Cohn 1987). The geopolitical discourse mobilised in the frequency maps and reports exists as part of the material agency of the radio waves and equipment implicated in these formations. Crucially, both these geopolitical imaginations and material capacities were vital to the geo-strategy in which the BBC was implicated as a part of British information policy in the post-war era. Thus, it was utilising the advanced broadcasting capacities available to it to the greatest extent possible, maintaining and developing this specifically in order to retain influence in the territories of the empire/commonwealth and capacity to broadcast to Europe and other areas of Soviet influence.

As the planned and existing coverage areas shown Figures 3 and 4 show, the MERS did not constitute the totality of Britain’s overseas broadcasting network. With major relay stations on Ascension Island in the South Atlantic Ocean, and at Aldabra in the Seychelles, the strategic significance of the MERS justifies the focus in this paper. This significance is further emphasized, as I will argue below, due to the location of the relay and its ability to broadcast to a “crescent” of British colonial territories simultaneously in a range of language patterns.

The inter-textuality of broadcast-media technologies and weapons of mass destruction evoked through the radii of effective signal strength is also not incidental, as can be found in the writings of several scholars on technology and media theory. The importance of the MERS as a field of force, crossing between the semiotic and the material in this manner, is underlined in a letter on the updating of the network:

*We regard this task (the updating of MERS) as an urgent political priority since the BBC Arabic service represents our main information weapon in the Arab world, and the area over which medium wave coverage has been lost (the Arabian Peninsula and the Persian Gulf) is at present precisely the most disturbed and vulnerable part of the target area.*

Both broadcast media and, in particular, radio objects and nuclear weapons are, then, objects (as well as assemblages) that not only occupy and move in, but also actively produce space. The spaces produced by “older” modes of radio technology, as demonstrated by the coverage maps in this section, show them to be replete with the same kinds of “pertubations” of social space argued for in contemporary geographies of technology (Ash 2013). This further supports Andrew Barry’s contentions that the entanglements of technological object systems and socio-political orders produces disturbances on multiple social and political scales. “Old” technologies were once, for want of a better term, “new”, and hence the ideas we apply to our representations of the new can be equally translated into previous historical contexts. This again demonstrates how the material-discursive approach can be an effective tool in (dis)assembling media institutions in popular geopolitics.
– by considering them as geopolitical assemblages in their own right, rather than simply vectors for the “real” geopolitical “work” of representation to be transmitted.

**The Masirah Relay Station**

The vital strategic importance of islands to the fields and radii generated in the coverage maps are clear from the documents of both the BBC and the DWS. Radio assemblages become territorialized in specific sites then selected for geopolitical, geographical and technical reasons. The synthesis of wireless communications and military necessity in the 1960s was such that although Euclidian distance was now thought of in global terms, waystations and stop-off points were still necessary for military aircraft, while relay stations were required to transmit radio signals over large distances since waves travel faster and with less interference over sea than land. This is a fact that again recedes from presence to all but those explicitly involved in this materialisation of the radio assemblage. The islands in and around the Arabian Sea were, in this regard, strategically important, both for state militaries and organizations. In the broadcast cartography of the imperial chains, radii and projection became primary. Straight lines were replaced with points and zones of reception; flight-times (aircraft and radio wave) were also central to this. Documents in the National Archives relating to Perim, off the coast of Aden, and the previous location of the Middle Eastern Relay prior to Masirah testify to this. In a report on the strategic importance of Perim, it was noted that despite having no direct strategic importance (it was, after all, microscopic in absolute terms), its value was attributed entirely to the prospect of allowing hostile or non-aligned powers control over it:

In the case of certain territories it was necessary to retain them, not so much because of the facilities they offered but because of the adverse effect of their acquisition by hostile powers. He (Sir William Oliver) cited as examples Kamaran Island and Perim Island in relation to Aden Colony.15

The contradiction inherent to this is, however, that if the strategic value of seemingly negligible islands resides not in the facilities they offer, but in the impact of allowing others to occupy them, then surely this suggests that these territories have potential facilities **worth acquiring**. Such facilities are not defined, but they are surely non-human in their dimensions, and not entirely symbolic either. The island appears to have a value, or set of potential, unexercised capacities (Dittmer 2014), not entirely reducible to its component elements (location, soil type, distance from political instability, etc.). Thus, while certain sets of relations might gain primacy at any given moment, these are not fixed and remain open to fluctuation and change.
Despite the statements discussed above reflecting the importance of the MERS from a foreign policy perspective, the Masirah Relay Station was not the inevitable outcome of a linear “masterplan” of media/foreign policy management and BBC/government co-operation. The origins of the updating of the MERS lay in a major report commissioned by the government and authored by a senior civil servant, Sir Thomas Rapp, who, in 1965, recommended the updating of the external services broadcasting capacities of both the BBC and the DWS in order to make Britain’s “voice more audible” within the context of the Cold War. Rapp wrote that:

> [i]n the world at large broadcasting has again advanced at an extraordinary pace since the early 1960s . . . whereas five years ago, a 100 Kw transmitter was considered very powerful, the accepted power for new transmitters being installed by the BBC as well as its rivals is now 250 Kw. Previous studies undertaken in the 1950s had indicated [that] overseas broadcasting requires a large investment in technical equipment which makes the cost of overheads relatively high in comparison with what is spent on actual programs.

A subsequent decline in this period was tempered somewhat by modernisation to the relay stations on Cyprus and Berbera (present-day Somaliland), which ensured that the MERS and the BBC Arabic service (which was the first of the BBC’s foreign language services) remained a strong regional force in the contested post-imperial/Cold War space of the “Transmitter War”. The conclusion reached by the External Services division was, however, that

> [i]t was only by the establishment of powerful relay stations under our own control that BBC broadcasts could in future be properly heard in these areas of high priority, where there was a ready audience if only we had the means to capture it.

The tensions in the acceptance of the Rapp report are best thought of as those of organizational components within the radio assemblage, which were simultaneously members of many other different assemblages. For example, the BBC, the Foreign Office, the Treasury and the Combined Communications/Electronics Committee were all stakeholders in the process of receiving and implementing Rapp’s recommendations. Rules around “official” communication are to be found in “turn-taking” micro-behaviours such as exchanges of letters, minutes from meetings and the observance of general rules around collegiality.

The first wave of re-development of the relay system occurred in response to this in the early 1960s, when four projects – in Cyprus, the Maldives, Sarawak and Ascension Island – were proposed, and when the political sensitivities around these re-constructions due to the process of British decolonisation were implicitly acknowledged:

> Of these projects, only the first has so far been completed. The South Atlantic station on Ascension is expected to be in operation by the end of 1966. The Sarawak and Maldives schemes have not been started due to insuperable political difficulties;
because, in fact, the geographical assets we once had for broadcasting from those dependent territories are no longer ours to use... the growth of nationalism and the fear of anything smacking of neo-colonialism render it increasingly difficult to find permanent sites for alternative relay stations.

The importance of these “areas of high priority” are reinforced in the minutes of later BBC discussions with the DWS about the future of the MERS:

The complex language pattern through the area, which permits widespread cross listening, on the one hand and the very large potential audience on the other, underlines the need for carefully planned co-ordination in our current affairs output as relayed from Masira (sic), and its close relationship to the political sensitivities and priorities of the area.

The creation of Masirah II as the solution to the issues raised by the Rapp report is revealed by the archive as nonlinear, and a consequence of non-human objects enacting the geopolitical forces upon each other, translating and recomposing their relations. In the register of assemblage theory, the “push” and “pull” of coding/decoding can be witnessed within these documents as when: “The identity of any assemblage at any level of scale is always the product of a process and is always precarious, since other processes can destabilize it” (DeLanda 2006, 28). The attempts at territorialisation are frequently subverted by other forces, as we shall see, such as the affective power of anti-colonialism, an accidental fire terminally damaging transmitter buildings (see Figures 5 and 6), or a bureaucratic wrangle over funding. This relates explicitly to Stephen Legg’s work relating the interlinked but distinct assemblages/apparatus’ of Deleuze and Foucault, which lead to “order, striation, re-territorialisation, long-term effects and scaling as much as to dis-order, smoothing, deterritorialization, short-term effects and de-scaling” (Legg 2011, 129). The materiality contained within the traces of these things is still “live”, albeit fossilized. The network of associations that once composed the broadcast assemblages they constituted are all that remains in these pictures and the technical reports surrounding them.

The 1960s were a tumultuous decade for the already destabilised and disintegrating British Empire. The object-politics of radio transmission geography should therefore be considered firmly in the context of these upheavals, which were as much a part of the North/South “theatre” of the Cold War as specific, individual instances of national self-determination. The bureaucratese of the foreign and colonial office documents, and those of the BBC in relation to the relay systems, are pregnant with the presence of anti-colonial insurgence in the Middle East and North Africa at the time. In February 1966, as preparations were being made to authorize the Masirah project, a 10 Kw transmitter, based in the station at Perim, was substantially
damaged in a fire. Suspicion immediately fell on a shifting landscape of anti-colonial resistance groups in the area who had previously been suspected of sabotage. However, following an intensive investigation, it was suggested that the cause of the fire was most likely a technical malfunction. The investigation, by a DWS team sent to Perim in consultation with engineers, political actors and other experts in the area, revealed that the failure of a piston, which ultimately caused the fire, had been observed in a number of other Deltic diesel generators of the same kind, although only in this instance had a fire been the result. The executive summary of the findings reads that:

This fire... first thought to be an act of sabotage, but on closer investigation by the experts, including an expert in sabotage techniques, it was agreed that the fire was caused by the breaking up of a high-powered diesel engine whilst running. This started a chain reaction which caused damage to the extent mentioned above. Although the damage was extensive, the fire burnt itself out before reaching the main units of the high-powered transmitters, which were not badly damaged.

This is important for the ontology of assemblage I am arguing for, because it highlights the difficulty of locating and assigning agency between humans

Figure 5. Photograph of failed piston recovered from Deltic generator, Perim Island 1965 (National Archives/NA/FO953/2230).
and materials in the complex socio-technical systems that act in a geopolitical capacity. The fact that human agency (in the form of sabotage) was initially suspected, and a full investigation (including the interrogation of local support workers) was required to establish that it was a material failure in the system emphasizes this further. Assemblage theory has spoken to these kinds of concerns in the past, most notably through Jane Bennett, who highlights the case of the electrical blackout across the US Eastern seaboard in 2004. Bennett argued that the case shows that there are now levels of technological infrastructure where the isolation of individual causal components in shutdowns/meltdowns is almost impossible, and that the elements of this assemblage, while they include humans and their (social, legal linguistic) constructions, “also include some very active and powerful nonhumans: electrons trees, wind, fire, electromagnetic fields” (Bennett 2009, 24).

In this register of assemblage thought, we can see that event of the fire brought into sudden focus for the managers the fragility of the network’s physical infrastructure and also the proximity of regional anti-colonial and insurgent movements. These points in assemblage are non-hierarchical and correspond only to the strength of relations to other points in any given
point within the network. The investigation into the fire at Perim encountered both the vibrancy and disobedience of complex technical networks, alongside the historical forces of imperial decline and anti-colonial independence movements hovering in the wings of the geopolitical stage.

The existing MERS composed relay stations at Cyprus and Berbera and the latter moved to Perim and, ultimately, to Masirah off the coast of Oman. In the BBC and DWS engineering files, there is a cartographic impression of the geo-strategic/geo-technical mesh within which the Masirah project was based; these are shown as Figures 7 and 8.

These two maps illustrate the geopolitical imaginary in which Masirah became incorporated during the BBC’s project management in the 1960s. This is, as in the earlier global map of short-wave and medium-wave coverage, linked to the shift between the colonial-ethnological and post-colonial engineering gazes discussed in the introduction. Both of these gazes are dependent on shifting connections between and relations to objects; for example, measurement/exploration instruments. In the case of Masirah, these are objects that produce cartographies that radiate outwards rather than inward. The overlapping cartographies based on linguistic distribution and the exploded view offered by the technical map of the object (aerial) were designed to show the action of objects simultaneously at

Figure 7. Masirah II coverage plans. Colour scheme identifying different language patterns broadcast directionally (Copyright, BBC Written Archives Collection).
different geopolitical scales, an attempt to “link between the two… the ‘hard’ regime of entropic energy consumption and production of not just things but also of material waste; and the immaterial regime of semiotics and signs – what we usually call ‘media’” (Parikka 2013, 6). It was during these exchanges of letters and
intensive meetings that the materiality of Masirah station emerged around the end of 1965, with a view to the station being operational by the middle of 1967.

Conclusions
This paper has demonstrated, through the example of the BBC, that the history of radio as a medium and material technology is inseparable from the wider current of geopolitical forces within which it is located. The three examples drawn from the early years of radio and telegraph regulation, which emphasise the influence of imperial imaginaries, phenomenological experiences of listening, and the presentation of geopolitical power as scientific and engineering rationality, illustrate the material-symbolic entanglement of radio as a medium and an object of regulation. Bringing together the nascent theoretical program of assemblage theory in offering more capacious accounts and descriptions of geopolitical practices and processes, the paper has also sought to draw attention to the materiality of historical, popular geopolitical media organizations, addressing a gap in the literature that has, with some exceptions, focused on the practices of representation made audible in popular geopolitical texts, rather than the materialities and infrastructures that act to distribute and broadcast them. In this way, the role of the material and the discursive overlapping and co-constituting each other should structure future geopolitically inclined studies of the media as a technological-cultural assemblage.

The examples drawn from the BBC and DWS archive relating to the expansion of medium-wave coverage reflect, through historical case studies, these underlying rationalities adapted and expanded to the Cold War world and the unique role played by the BBC in the underlying “information war” conducted during this period. The “carving up” of the European airwaves conducted by Britain in its late-imperial heyday is no longer possible and, instead, the focus shifts to the maintenance of “soft” imperial power of radio relations in recently or soon-to-be vacated colonial spaces. Just as practices of mapping, building and infrastructure development were integral to the British imperial project in the nineteenth century, so the investment and debate around the MERS mirrors these alternate time-spaces. Parallel to this, the fire and damage to the relay station at Perim, acting as one (among many) of the drivers for the acceleration of the move to Masirah, sheds light on the power of material components in socio-technical assemblages to bring about effects vastly disproportionate to their perceived scalar importance. The faulty part or unattended gauge to blame for the fire that damaged the relay station, alongside the anti-colonial affective forces, which meant that suspicion initially fell on saboteurs, reveals the complex, shifting landscape of people, objects and things that coalesce at specific instants. As I proposed at the beginning of the paper, what is relevant to the assemblage approach to
geopolitical media is its attention to the effects of forces, agencies and objects alongside a wider series of events and practices. This approach could lead to the opening of more “black boxes” of material-semiotic organization in the historical study of geopolitical media (Müller 2012), giving equal attention to the patterns of discourse and representation and also to the wider fields of material objects and relations within and through which these representations are embedded and broadcast.

Notes

1. I consider “assemblage thought” in this paper to include a range of theoretical positions including actor–network theory, “new” materialism and Object Oriented Ontology. While the disagreements and arguments between the nuances of these positions are great, they are all broadly relational approaches which all share a degree of commitment to rejecting an a priori distinction between the discursive and the material, grounded (broadly) in a belief that the various linguistic/textual “turns” in the social sciences, humanities, and philosophy since the 1980s have resulted in the absence of material and materiality in these disciplines. I accept that this is not an uncontroversial position, but is one taken in order to draw on the added value of these theories for the study of popular geopolitical media, without becoming trapped in abstracted debates. For more on these distinctions and the nuances of these debates, see Anderson, Kearnes, McFarlane, and Swanton (2012), Bryant, Srnicek and Harman (2011), and van der Tuin and Dolphijn (2012).

2. Most notably through an engaged dialogue in human geography journals found in Anderson and Mcfarlane (2011), Anderson, Kearnes, McFarlane, and Swanton (2012), and Adey (2012).

3. For a detailed discussion of the linkages between ANT and Assemblage theory, see Harman (2007).

4. Particularly in Urban geography, e.g. Brenner et al. (2011).

5. It is interesting to note that in the shift from analogue radio to digital, the degree of agency by which listeners may respond to fluctuations in signal reception are substantially altered. Previously the dial could be tuned by hand, or even by an automatic scanner. DAB digital radios, however, often come with pre-set stations and do not allow for individual atunements. Consequently, when signal is disturbed, interrupted or lost, no activity can be undertaken to ameliorate this.

6. In this respect, we might think of static as broadcasting deterritorialized to such an extent that it no longer retains the necessary identity to count as a broadcast. This shows, once again, that this theoretical paradigm is more suited than most for discussing radio in particular, given the obvious metaphorical similarities between the two.

7. The necessity of the existence of such formulae when devising architectures of geopolitical cooperation has been demonstrated many times since, most notably in the design of the Bretton Woods institutions, where voting quotas were made to seem as scientifically arrived at as possible, and yet were almost entirely reflective of the preferences of the most powerful countries (Stone 2011).

8. Archives of the International Telecommunications Union available at http://www.itu.int/en/history/Pages/LibraryAndArchives.aspx.

9. Early twentieth century writers also expressed the problems of incorporating linguistics and communications machinery: “While ours is a growing language, it is not a growing
code. The telegraph companies forbid their operators to extemporise code words or to use any which are not on a standard list... the wires are thus constantly shrinking the popular vocabulary, hastening the retirement of words of the less useful sort” (O’Brien 1904).

10. (WAC. E36/35/1) N.b. primary documents from this research from the BBC Written Archives Centre are given their original archival category codes in these notes, e.g. (E36/35/1) “The Boundaries of Short-Wave coverage shown in red on the Map represent the primary coverage achieved, based on the maintenance of competitive signals of adequate strength, in the wavebands tuned by an average type of short-wave receiver for the major part of the peak listening period. Reception will vary considerably in the red striped secondary areas from almost primary standard to inferior secondary standard with fading noise and interference. Very occasionally primary standards will be achieved in almost all areas” (WAC E36/35/1 1967).

11. WAC., letter of 6th March 1968 to K. J. Machnoochie from Charlton Higgs (BBC), my emphasis.

12. As Asa Briggs points out, decisions as to where to situate relay stations in the UK was one similar to the allocation of frequencies internationally, where quantitative demographics (population, area) were placed alongside more nebulous qualities like “civic value” in assessing which cities should get relays.

13. It is perhaps a co-incidence, but an illustrative one, that Samuel Morse’s first message sent by that medium: “What hath god wrought?” is reflected in Oppenheimer’s quotation of the Baghvad Gita in response to the deployment of nuclear weapons; “I have become death, destroyer of worlds”. The association of the technological with the divine is a persistent and central element of the intertext of modernity.

14. WAC/15th November 1965, emphasis added.

15. National Archives (CO 1015/1646). n.b. all primary documents from the national archives cited here are given their original section codes.

16. Indeed, the problem of “poor audibility” is referenced more in the Rapp report than any other term.

17. FO 953/2236.

18. FO 953/2236.

19. FO. 953/2236.

20. G.T.M. de M. Morgan. WAC, E36/48/1.

21. FO/953/2230.

22. FO 953/2230.

23. WAC E36/7/1.

24. WAC E36/48/1.

25. As notably discussed by Felix Driver (2001) in his analysis of “geography militant”.

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