Nature, space and distances in an imperial boundary network: the delimitation of the Nyasa-Tanganyika plateau boundary

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Keywords: Boundary delimitation; imperialism; imperial nature; Nyasa-Tanganyika plateau; sensation

Nature, space and distances in an imperial boundary network

This article discusses an episode of boundary delimitation/demarcation conducted between British and German imperial powers on the central African Nyasa-Tanganyika plateau in the late 1890s. The frontier between the British and German ‘possessions’ was being recast as a linear boundary (Donaldson, 2010: 49-53) and today the plateau lies within the borderlands of Malawi, Tanzania and Zambia between lakes Malawi (Nyasa in the 1890s) and Tanganyika. In this article I situate a brief account of the Nyasa-Tanganyika boundary delimitation within a broader geography of imperial territorialisation. I suggest the plateau boundary represented a fabrication resolving particular tensions: between the contradictory sources of an ‘imperial nature’ assumed to determine the ‘natural’ boundary’s spatial form, and between different circuits and spaces of geographical knowledge production.

Anglo-German imperial geopolitical rivalry in the 1890s is contextually significant. The boundary was delimited jointly by British and German commissions, but German representatives are regrettably incidental in this account and I draw only on British archives: the National Archives, Kew, and the Royal Geographical Society (RGS). Principally I have read correspondence between the boundary commissioners and representatives of the Foreign Office and Treasury (etc), but personal papers have offered important illustrations of experiences of technical work. I wish at this stage to signal problems of positionality associated with reading and interpreting this material which is both capacious and incomplete as a record of the past (Baker, 1997). My mediation of the plateau and the commissioners’ technical practice is fully dependent on the form and content of this archive and I cannot draw on personal sensory experience of the plateau to triangulate historical actors’ accounts empirically.¹ The archive sets traps for its interpreters, who may exoticize geographical and historical contexts and essentialise technical work as a masculine challenge to the environment (as its other).

To address this challenge, I emphasise the entanglement of observers and environments. But, unavoidably, the archival voices I discuss are of British imperial agents, figures critiqued for masculinist and eurocentric biases, spatial practices and representations (Blunt, 1994; Blunt and Rose, 1994; Phillips, 1997; McEwan, 2000).

¹ I am grateful to a reviewer for encouraging me to confront these questions directly.

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Aside from the fleeting appearance of a traveller, Miss Caddick, the historical figures of the plateau delimitation's archives are universally men: military surveyors, principally the British delimitation commissioner Charles Close; administrators such as the consul-general in British Central Africa (BCA) protectorate, Alfred Sharpe; diplomats and politicians. Still, other figures, usually more marginal in imperial archives, are also significant. Therefore while I am satisfied to discuss (and loosely bracket) Close and Sharpe as 'surveyor-explorers'—imperial subjects located at the centre of episodes of adventurous and scientific travel—I am also interested in people such as Wahid Ali Khan, an 'Indian surveyor' employed in BCA. Surveyor-explorers were central within bureaucratic circulations of correspondence and paper (Dittmer, 2016) between the colonial and metropolitan worlds but are archivally visible principally because of their power—as men of Victorian Britain's ruling classes—to write and command metropolitan audiences. Imperial agents such as Khan had no equivalent power. But they left archival traces saying much about delimitation practices and the historical material contexts of expedition spaces. As I will suggest, the agencies and practices of South Asian technicians were constructed in distinction to surveyor-explorers and this had material effects for delimitation.

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Writing was paramount among the embodied practices (Craggs, 2008: 50) of survey-exploration. Indeed, long after the commission a traveller to Nyasa suggested 'one should return to one's own country with the pages of one's adventures already written and seek without delay the pride of authorship' (Kellet-Smith, 1920s). But representation—whether written, mapped, sketched or photographed—was 'convoluted' (Simpson, 2017) and distant from fieldwork's objects; to emphasise it is to read the archive as a statement on/of male European subjectivities. So my interpretation of the Nyasa-Tanganyika delimitation is concerned for these subjectivities only as they are located within broader (in)human assemblages. I am interested in fieldwork sites not only as they are represented in text, but as they are produced at the boundaries between object worlds and subjective cognition (Wark, 2016). And so while a focus on delimitation commissioners as surveyor-explorers retains images of adventurous *voyageurs* (Driver, 2001: 13), rational scientists and spatial 'nomads' (Carter, 2010), I focus on the experience of technical practice to suggest that this constituted a form of imperialising power exercised in the colonial periphery with a potential to subvert metropolitan power.

This article's contribution may be summarised. 'Sensation' (Wark, 2016) within the space-time of a 'colonial nature' drives my critical interpretation of the Nyasa-Tanganyika delimitation. Sensation shows that technical practice constantly redefined the objects and methods of delimitation, undermining the possibility of a definitive plateau knowledge. To reveal this I offer a series of historical 'vignettes' centring on practice rather than a sustained historical treatment of the plateau boundary's delimitation within processes of imperial territorialisation. Finally, the archives of survey-exploration were produced by restricting who could speak: the plateau's people and the 300 African and Asian troops and porters (amongst others) attached to the British commission are as marginal in this paper as they are in the archives. But this does not mean that delimitation can be reduced to the observant practices of European men, and this is a story of sensuous natures, conflicting technical practices, and dialogues within and between colonial and metropolitan worlds.

INTO RELATIVE SPACE: THE IMPERATIVE TO TRAVEL

I refer to imperial agents' work on the Nyasa-Tanganyika plateau as 'delimitation'. This is problematic. Even before the commission Curzon (1892) distinguished between boundary delimitation and demarcation. Later, Jones (1945) described delimitation as primarily a legal activity, and demarcation as the adaption of the delimited form for a material setting and its physical inscription (Donaldson and Williams, 2008: 684). The Nyasa-Tanganyika delimitation included significant elements of demarcation but following the commission's own terminology I use 'delimitation'. Moreover, the slippage between the terms this indicates suggests that the delimitation/demarcation disjuncture *may* be read instead as continuity. The notion that a legal, diplo-cartographic circuit of metropolitan power-knowledge was discrete and separable from a peripheral or colonial counterpart, characterised by travel and fieldwork, is not supported by the archival materials considered. Rather, territorialisation was characterised by dialogues between diplomatic and colonial circuits and establishing relationships between these putatively distinctive phases of space-making is this section's focus.

Following Duncan and Ley (1993), both the delimitation commission's scientific practice—pursued through observation—and its spatial object may be

understood in terms of *topography*. Logically, the plateau and its contents are objects of topography activated in the consciousness of its observers. But topographical descriptions are always the topographical productions of powerful interests (Katz, 2001: 1214) and imperial topography was replete with power relations: white, male, military-minded practitioners described a nature they observed, their representations coalescing as essential geographical knowledges responding to exigencies of imperial power. Imperial topography, I mean, assumed that a certain kind of subject could contemplate a certain kind of (autonomous, discrete, pre-existing) object. But although the commissioners' assumptions were of Newtonian epistemology—of physically and conceptually separable observers and objects (Wark, 2016: 157)—and an Aristotelian ontology (Braun, 2006: 196) of eternally unchanging things, the archival evidence does not support them. Indeed, I interpret historical material conditions on the Nyasa-Tanganyika plateau—the plateau itself, its watershed, rivers and anthills—for their historical and geographical specificity and their '[entanglements] with the *physical constitution* of space' (Depledge, 2015: 91). The plateau did not exist in and of itself, but was produced through unfolding socio-technical practice. Far from producing objective boundary determinations, delimitation engendered *more* topographies and *different* objectivities.

As imperial topography, the plateau was produced to advance further *topological* relations, not least the plateau's capitalist integration. The Stevenson road (fig.1) was critical. Its potential lay in connecting the steamship traffic on Nyasa and Tanganyika: the road produced *distance* as colonial commerce's means of production (Harvey, 2006: 96-97). British traders required exclusive access to the road and boundary commissioners addressed its position relative to the boundary; their work considered the boundary only amongst other imperatives and, as such, reflected trends dominant in British geography. The traveller and politician George Scott Robertson (1900: 457), for instance, advocated political geography as a 'science of distances' to support 'the merchant, the statesman, and the strategist' (see also Wilder, 2010 on colonial ethnology); and in the field, topographical descriptions (Stone, 1982; Haines, 2016) generated knowledges to support the property or political economic relations of 'land' (Elden 2010). The commission's practice may be situated as localised expressions of geopower or 'imperial science' (Driver, 2001: 37-46). In the first instance delimitation responded to a 'German intrusion' (Gjersø,

2015: 832) into Africa meaning that Britain relinquished territories such as Heligoland to bulwark its African holdings. In the second, as I show below, delimitation's technical practices supported capital's access to labour and commercial distances.

By the late 1890s the patterns of Europeans' travels upon the plateau were established. In a decidedly Eurocentric history, David Livingstone, 'discoverer' of Nyasa—the 'lake of storms'—travelled across the plateau in 1859 and, heading inland from the Indian Ocean, Harry Johnston visited in 1889-90. Missionaries, traders, and engineers (Martin, 1980) also travelled within this frontier region of BCA, the British South Africa Company's (BSAC) chartered territory (which became North-Eastern Rhodesia after 1900), and German East Africa.

Stone (1988: 59) has suggested that a 'great cartographic watershed for Africa relates to the replacement of remote imperial influence with direct colonial authority'. Arguably this too neatly separates two phases of Europe's imperialistic relation to Africa (or, akin to the delimitation/demarcation binary, exaggerates their distinctiveness) but I do not substantially disagree. Indeed, the replacement added to the range of delimitation's objects: scientific observation combined with political and economic visions to produce novel regimes of colonial surveillance. This continued long after the plateau delimitation and African territories in general became the objects—or 'laboratories' (Tilley, 2011)—of scientific investigation. Northern Rhodesia 'served as a laboratory where new models of "ecological development" were tested' and throughout Africa 'colonial states [were turned] into experimental sites for long-term field studies' in biomedicine (Tilley, 2011: 138, 174). So with the 'triumph of exploration [and] new systems of communication ... the Enlightenment dream of complete knowledge ... ended in a nightmare of surveillance' (Hampson, 2007: 64).

Technical/scientific and territorialising impulses thus proceeded together. Ingram (2009, my emphasis) has noted for instance that 'governing disease is *geopolitical* in that it involves the making of borders and the separation of things, people and place'. Boundary delimitation is not unique as an example of technical practice, but it provides a further avenue to discuss the commingling of people, capitals, technical practices, and infrastructures in the production of territory (Boelens *et al.*, 2016; Mustafa and Tillotson, 2019) and to understand how the

sensuous, material environments characterised here as colonial nature assembled through practice. Therein human agents are paramount, but so too are (for example) the BSAC-owned African Transcontinental Telegraph (ATT), rivers and naming practices.

If this is to flatten ontology, I do not deny subjectivity. Frontier spaces could seem incalculable (Simpson 2017) and sense impressions complicated the ‘Cartesian perspectivalist’ (Williams, 2011: 382) tenets of geopolitics and science: different imperial agents saw differently. On the plateau at Ikomba, Close noted that German commissioner ‘Hermann *makes the watershed different* from my view of it’ (Close, 1898: 3 October, my emphasis). But ‘an irreducible gap between raw survey data and territory’, which restricted cartographic development, could only be counteracted by ‘embodied, spiritualized experience’ (Simpson, 2017: 34). Thus geographers’ ‘first-hand observation and systematic studies of people and nature’ (Clayton, 2000: 19) remained vital responses to territorialisation’s imperative to travel and observe.

Regularly, therefore, expedition spaces have been discussed for their *immaterial* dimensions, travellers and contemporary critics emphasising sense impressions over embodied practice (Pratt, 2007). Accordingly, the ‘interpretive commonplace’ exists by which a ‘colonial viewer [is identified] as a Euclidean emissary: the man who sits at Europe’s cartographic tables, who grids and tabulates, and who confirms his authority over foreign space through the power-technologies of *sight*’ (Dubow, 2000: 89, my emphasis). But ‘touch, hearing, smells, and taste’ were significant too, even if travellers required additional ‘literary skills’ to reflect upon them (Fabian, 2000: 185). On the plateau, commissioners celebrated bodily/sensual immersions in dangerous African natures: surveying the Songwe river in a dinghy, Lieutenant-Commander Sparkes was ‘pursued by a cow-hippopotamus’; in common with one of the German commission’s mules, Lance-Corporal Peacock fell into a game pit where stakes pierced his leg. The mule died but Peacock survived to suffer the fevers that regularly affected the Europeans (Close, 1899: 22). These encounters produced the plateau as an object of delimitation just as much as the technical practices of observation.

Fieldwork’s tools and instruments (MacDonald and Withers, 2015) are also significant in the production of experience and an understanding of ‘apparatus’ (Barad, 2007) considers the use of instruments and their putative status as

guarantors of ‘accuracy and objectivity in survey data’ (Cosgrove, 2008: 159). Instruments generated sight over geophysical worlds and a *reach into* them; they supported imperial agents’ material reorderings of these worlds *and* displayed their own agentic capacities as space-makers. Human-machinic entanglements—rather than separations—characterised technical practice, determined the contents of knowledge, and ‘produced aesthetic effects and emotional states’ (Tresch, 2012: 12). And so I am interested in sight and observation *within* a suite of experiential, haptical and tactile sense impressions and as *elements* of an ‘inhuman’ sensation (Wark, 2016: 151). Focusing this way, I challenge the subject/object dualism assumed in survey-exploration’s imperial epistemology but which does not characterise its experiences.

COLONIAL NATURE AND THE UTILITY OF SENSATION

The agency of the fieldworkers discussed here is located principally in what I refer to as colonial nature (cf. Escobar, 2008; Ginn, 2008). I interpret colonial nature and a further diplomatic nature as the two components of an imperial nature. This may appear convoluted but the sources of colonial and diplomatic nature are distinctive, and the attempts made to reconcile them were productive of the imperial nature generating the Nyasa-Tanganyika boundary. I will sketch the contours of this argument to posit colonial nature as a locus of sensation, the counterpart to the diplomatic nature discussed here as a textual zone of ‘anticipatory geographies’ (Harley, 1992). Together they framed territorialisation processes informed by doctrines on natural boundaries, and here I locate my contribution to work on territory and borders, my archival interpretations revealing tensions and contradictions resolved spatially by imperial boundaries themselves.

The prime source of the Nyasa-Tanganyika plateau’s diplomatic nature was the 1890 Anglo-German agreement which addressed territorial claims left unresolved after the 1884-85 Berlin Conference (see Donaldson, 2010: 18-23, for a related discussion on the DRC-Zambia boundary). In this sense government was conducted in writing, through ‘recordation’ (Bhabha, 2012: 133): the agreement secured British ‘interests in Uganda, Zanzibar, Pemba Island, Witu and Nyasaland’ by cession of territories in east and south-west Africa and Heligoland to Germany (Hyam, 2002: 214; Rüger, 2014, 2017). I refer to the agreement’s text below; at this

stage it may be noted that it defined the plateau boundary—delimited nearly a decade later—with a line tracing natural features between lakes Nyasa and Tanganyika. The plateau became significant to imperial diplomacy in this context. In March 1897 the British requested German participation in delimitation (Lascelles, 1897a) and allocated £1,000 for the work, even where frontier administration transferred from BCA to private BSAC territory (UK Treasury, 1897). The sum was inadequate—perhaps the ‘unscientific keeper[s] of the ... purse strings’ considered ‘the figure of the Earth ... quite sufficiently determined’ (Holdich, 1907: 551)—but the joint Anglo-German commissions’ delimitation went ahead in 1898.

The diplomatic nature cited eight years earlier assumed natural and political dispositions should coincide, a historically-potent materialist notion. Fall (2010: 143) describes an ‘obsession [to reveal] links between topography and states or boundaries—...between nature and politics—through scientific and, in particular, geographic expertise’. This established a doctrine on the priority of nature—‘things as they really are’ (Fall, 2010: 146)—over boundaries with eurocentric precedents. At the founding of European cities, wrote Mackinder (1909: 463), ‘the most natural territorial units roughly coincided with river-basins, their frontiers being approximately at the water-partings.’ But nature’s power over the ‘shape of human societies and cultures’ (Castree, 2001: 6) became particularly relevant as Europeans defined imperialising relationships beyond their continent. Geography acquired significance as ‘a whole “body of thought” [to] help “man” manage his relations to diverse environments’ (Tilley, 2011: 63). Here nature was transcendental, social life subjected to its laws (Braun, 2006: 195-196).

As imperial rivalries escalated, ‘[u]nsurveyed and unmapped territory [was considered] a danger, as well as a disgrace, to the country possessing it’ (Mill, 1904: 670). But geographers had long been ‘at the forefront of the effort to divide the world into *absolute spaces*. The British school of geography in particular owed much of its professional existence to this kind of activity’ (Smith, 2010: 116-117, my emphasis; also Ryan, 1996: 4). Still, this absolute expansion of European states—which concluded with the partition of Africa in the 1880s—was only one phase in the production of a geography of capitalism. *Thereafter* came a principal moment of/for survey-exploration when topographical practice produced relative spaces. Fieldworkers displaced the authority of metaphysical, Euclidean geographies, or those produced by desk-bound geographers (see Lambert, 2013); and spherical

541 geometry (Harvey, 2006: 121-122) and new communication technologies eroded
542 static carto-diplomatic gazes over absolute space. But a longstanding 'valorisation of
543 the instant' (Stafford, 1984) predicated upon the representation of physical
544 engagements in new surroundings endured (Clayton, 2000: 19). So the distinction I
545 wish to draw pertains to the working practices of delimitation in the 1890s rather
546 than a transformation within empiricist cultures of exploration.
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554 Within this context I locate the imperial nature of the Nyasa-Tanganyika plateau
555 (and its two components). In diplomatic nature—the 1890 agreement—the plateau
556 boundary was produced at spatial and temporal distances from the eventual
557 expedition spaces where its referents—inert and self-contained—were sought and
558 observed. Diplomatic nature, then, was *written* to guide its own empirical
559 verification. But in colonial nature, commissioners could not only enact diplomatic
560 instructions to demarcate/inscribe an impression of the 1890 boundary, simply
561 finding and observing objects. Rather, practice established spatial relationships
562 between these things to create the boundary network's multiple locations and its
563 spatial relations within the broader geography of imperialism.
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570 This practice spoke back to and deferred metropolitan power because colonial
571 nature encompassed technical practice, experience *and* interpretation. Bhabha
572 (2012: 135):
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575 Between the Western sign and its colonial signification there emerges a map
576 of misreading that embarrasses the righteousness of recordation and its
577 certainty of good government. It opens up a space of interpretation ... that
578 inscribes an ambivalence at the very origins of colonial authority.
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581 Experiences of expedition space, then, were 'transformed into the acts of
582 governments and the discourse of authority in *another place, at another time*'
583 (Bhabha, 2012: 135, original emphasis). Technical practice was imperial power. But
584 the vitality of colonial nature—revealed in the intersections of people, natural and
585 technical materialities—demonstrated colonial authority's ambivalences rather than
586 its potency. How, then, did delimitation illuminate ambivalence? As above, imperial
587 subjects' power was tenuous and material worlds also participated in space-making.
588 Moreover, experience undermined the possibility of their delineation. In this sense
589 colonial nature was produced by 'sensation', objects and subjects of knowledge fusing
590 as 'an undecidable assemblage' of material forms and sense impressions (Wark,
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2016: 18-21). Recordation was destabilised as colonial nature was produced as something vital and unanticipated in metropolitan worlds.

Discussing sensation, Wark (2016: 151) emphasises *apparatuses*, ‘the machines that mesh with our flesh’. Apparatuses are not simply the passive, observing instruments of an experiment. Nor are they social forces. Rather, they are ‘productive of (and part of) phenomena’ (Barad, 2007: 142), an ‘*inhuman* thing, [that is] neither object nor subject’ (Wark, 2016: 151). Objects, apparatus, phenomena and observer exist configured within a particular experimental ‘situation’ (Wark, 2016: 158) which we may seek to repeat or communicate. On the plateau commissioners’ apparatuses produced ‘position-sensation’ (Wark, 2016: 157-158) within relative space, using various methods to observe, record and represent. A panoply of sensations were generated, their apparatuses producing inhuman phenomena rather than a knowledge of the world itself. *More* data did not refine a singular knowledge form; a profusion of sensations only generated knowledges of competing ‘situations’ (Wark).

The politics, possibility and history of objectivity are widely discussed (Daston and Galison, 2010; Shapin, 2011) and ‘social agreement’ (Barnes, 2007: 1545; also Galison, 2004) supported the objectivity the delimitation commissioners required. However, I am arguing something a little different: in the commissioners’ realism—where knowledge was a value-free representation of the world—a longitudinal meridian’s position could be established with no regard to who or where an observer was, or how they worked. Observers who could disappear ‘could really witness with authority rather than gawk curiously’ (Haraway, 1997: 25), and data and abstraction created a ‘scientific Real’ (Žižek, 2015: 10) into which observers could retreat from (their own) phenomenal worlds. But Barad (2007) and Wark (2016) do not abandon realism so much as espouse a different realism, of knowledge production *processes*, which I borrow from. Simply put, there were too many sensations on the plateau.

POSITION-SENSATIONS: HUT, WIRE AND CAPE

After the Nyasa-Tanganyika delimitation Charles Arden-Close became director-general of the Ordnance Survey (1911-22) and president of the RGS (1927-30). But in 1897 as Captain Close of the Royal Engineers—he became Arden-Close in 1938 (O’Brien, 1992)—he was appointed British delimitation commissioner (McGrath,

1976). Close's writings reveal an 'intentional world of historical individuals, [and their] active, spatial choices' (Carter, 2010: xvi) and his descriptions of fieldwork are informed by the diplomatic, commercial and strategic exigencies which inflected it. In London, for example, the War Office required the delimitation complete within a single dry season. So the British commission performed a 'triangulation ... of a rough frontier kind' and Close criticised the German commission's excessive concern for accuracy (Close, 1929). He regarded their astronomer as 'capable and conscientious' (Close, 1899). But Dr Kohlschütter was 'anxious ... to get a post in the [Prussian] Geodetic Institute. It was quite immaterial to him whether the Commission delimited the frontier or not, but he was very desirous of executing a triangulation which should attract notice.'² The Germans' 'methods [were] well known, but [required] much more time than was available, and such refinement [was] of *no use for geographical purposes, its interest being purely scientific*' (Close, 1899: 33-34). Here 'scientific' interests diverged from the military surveyor's.

But Kohlschütter's interests only supported German diplomats seeking 'trustworthy points of departure for [future] mapping' (Hatzfeldt, 1897). British intentions barely differed (Ardagh, 1898b). However the British chose a distinctive method to determine a longitudinal baseline for delimitation. Whereas the Germans used highly accurate astronomical methods (repeat observations of stars) to determine longitude, the British exchanged time signals over '1900 miles of [telegraph] wire' (Arden-Close, 1949) between Nkatha Bay (Nyasa) and the Cape Observatory (Cape Colony). The ATT wire had arrived in Nkatha Bay on 20 June 1898 (Twynam, 1953). Using this, theodolites and zenith telescopes, longitude work was underway by the end of the month at the Nkatha telegraph hut (Close, 1898: 23-24 June). Reportedly this was the only location in the tropical African interior 'absolutely determined by telegraphic communication' (Sharpe, 1898), a 'fixed point of this part of Africa' (Boileau and Wallace, 1899: 592) later marked by a pillar and guarded by the BCA administration. However the immediate effect in 1898 was for the boundary network to begin to unfold around a new objectivity of the telegraphic baseline and a new potential for interventions in materiality.

The telegraph promised objectivity precisely because it essentialised the prospects of the commissioners, reducing them to interchangeable recipients of time

² Kohlschütter became president of the Prussian Geodetic Institute in 1922.

721 signals. Anyone *could* do this, although it helped to be a European military surveyor
722 with access to the Astronomer at the Cape, David Gill. I suggest, therefore, that the
723 telegraph only corresponded to *another* situation (Wark) as opposed to a particularly
724 truthful one. Still, its wires and insulators apparently separated human actors—pure
725 subjects—from an external world of disruptive actors. Storms, damaged wires, and
726 even the passing of a Sunday delayed signal exchanges with the Cape (clouds also
727 thwarted the observation of stars). The telegraph did not separate the commission
728 from nature so much as produce new dialogues with inhuman actors. But longitude
729 was eventually ‘brought up [from Nkatha Bay] by a battery of chronometers’ to
730 Kambwe to establish a delimitation base 200 miles north of the telegraph hut by
731 around 12 July. This ‘fundamental point’ (Close, 1929) was near Karonga, which the
732 telegraph only reached in October.

733 The telegraph hut, set in relation with the Cape observatory, was vital for the
734 Nyasa-Tanganyika delimitation. Imperial space-time was reproduced by their signal
735 exchanges, the materiality of wire, and a connection to Greenwich. The hut embodied
736 colonial Africa’s ‘geographical attachment’ (Arden-Close, 1950: 256) to Europe that
737 Close personally recognised. It conveyed the wire’s disciplining, territorialising
738 power and, above all, produced telegraphical position-sensation and a
739 technologically-refined spatial knowledge. But the commissioners knew this would
740 not automatically displace older knowledges: in July 1898 the telegraph produced
741 Karonga’s longitude as 33°E56’6” which made the 1897 calculation of Lieutenant
742 Rhoades, working under Alfred Sharpe, ‘very wrong’ (Close, 1898: 9-14 July). The
743 novel position-sensations of the telegraph, then, generated longitudinal ambiguities
744 and Close’s remark to Sparkes, that ‘the survey of the Songwé [*sic*] river [would be]
745 important’ (Close, 1898: 21 July), was prescient.

746 **SENSATIONS OF IMPERIAL NATURE**

747 The telegraph hut was far to the south of the ‘boundary zone’ isolated by the 1890
748 agreement. So defined in diplomatic nature, the plateau became a topography
749 (object) of imperial interest: the container of the future Anglo-German boundary,
750 produced to effect its own eventual rupture in colonial nature although in places a
751 boundary was inscribed before the delimitation commission (Anderson, 1890). The
752 1890 agreement defined the boundary as

a line which ... [runs] westward ... till it reaches Lake Nyassa; thence striking northward, it follows the eastern, northern and western shores of the lake to the northern bank of the mouth of the River Songwe; it ascends that river to the point of its intersection by the 33rd degree of east longitude; thence it follows the river to the point where it approaches most nearly the boundary of the geographical Congo Basin defined in the 1st Article of the Act of Berlin....

From that point its strikes direct to the [Congo basin] boundary; and follows it to the point of its intersection by the 32nd degree of east longitude; from which point it strikes direct to the point of confluence of the northern and southern branches of the River Kilambo, and thence follows that river till it enters Lake Tanganyika.

Within this flat carto-diplomatic space objects awaited activation in consciousness. But shorelines, hydrographic boundaries and riverbanks took vital, unanticipated forms in colonial nature. Mountains—locations for trig points etc—existed in unexpected or inaccessible locations, or not at all (Bassett and Porter, 1991). Or they receded from (triangulating) sight where bush fire haze or other mountains, their presences unanticipated, intervened. Colonial nature, I suggest, inhered in terms of its internal relations, decentring human agency.

Diplomatic minds effectively understood this. Before delimitation Hatzfeldt (1897), German ambassador to London, wrote that if it was discovered that the territory in question is so mountainous and inaccessible that a triangulation and accurate topographical survey could only be executed with great difficulty, the commission are authorised to submit proposals for another boundary line in the territory.

Possibly this is no more than imperial pragmatics: delimitation surveying necessarily required passage among a boundary network's multiple locations. But presence, mobility and the production of scientific distances—the networked topologies of triangulation—were the means of delimitation. Moving bodies, mapping and writing in notebooks, generated a knowledge of specific position-sensations—if not a measure of the world—and so the form technical work took under the material conditions of colonial nature was significant. If terrain was excessively mountainous, technical work could be moved different locations, generate different texts (e.g. maps), and underscored the tenuousness of metropolitan authority as Hatzfeldt recognised.

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842
843 With or without such hitches, delimitation proceeded through recoding the
844 objects of diplomatic nature within colonial nature's internal relations. This did not
845 merely inscribe 'ownership', but 'wired' (Easterling, 2016: 77) space to support
846 certain forms of life. In the archives, if not on the plateau, it proceeded prosaically to
847 reproduce epistemic violences. Chichester (1898), commander of the British escort,
848 noted:
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852 The neighbouring chiefs have had explained to them the meaning of the
853 [boundary] posts. Magnetic bearings have been taken from both the old and
854 new posts to all available mountains and hills in the vicinity.... I witnessed the
855 destruction of the old and subsidiary posts.
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859 Monuments to former situations (Wark) were erased. But the new boundary posts
860 had minimal effect until set in magnetic relation to hills: earthly materials and
861 abstractions (magnetic vectors and geometrical knowledges) combined within
862 Chichester's situation, and the hills—constants while boundary posts were replaced
863 or re-sited—narrated the spatio-temporal modulations of geopower that fieldwork
864 instituted. Chichester, it seems, felt he had only to explain the presence of the posts
865 to the plateau's people as passive recipients of this information. Delimitation was
866 thus consonant with the broader racialising practices of imperialism.
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871 Elsewhere, Close noted that the 'watershed laid down in the [1890 agreement]
872 ... is generally easy to distinguish and the natives readily understand that if a village
873 is on a stream flowing south, it is British; if on a stream flowing north, German'
874 (Close, 1899: 32). Here was the 'raw material, the forces, of politics and the
875 ontological conditions under which politics [could] emerge' (Yusoff *et al.*, 2012:
876 988): water and gravity, activated by magnetism and turned to territorialising ends.
877 The watershed *cited* in diplomatic nature, became vital in colonial nature as a source
878 of separation/rupture in imperial cosmology. The effects on the lives of the plateau's
879 people are beyond my current knowledge, but the commission's experience of the
880 material relations between, for example, water, gradients, maps and compasses
881 drove territorialisation in its specifically phenomenal registers, and produced an
882 imperial nature loaded with the meanings that made African people, places and
883 polities newly, variously and differently imperial.
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895 **CROSSINGS I: RIVERS AND MERIDIANS**

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In June 1897, too late to begin delimitation before the rainy season, it was agreed that British boundary commissioners would arrive in BCA in March 1898 (Lascelles, 1897b). The delay prompted Alfred Sharpe in Zomba (BCA) to seek a temporary boundary. Sharpe set out to meet Elpons, administrator of 'German Nyasaland', at the mouth of the Songwe river on 27 September. After a further meeting (4 October) he had 'little doubt' that the 1898 commission would reproduce their temporary boundary (Sharpe, 1897b) which resolved a problem of diplomatic nature: the 1890 agreement assumed the longitudinal meridian 33° east of Greenwich would transect the Songwe to produce a location where the boundary would diverge from the Songwe to follow a path to the Congo basin. Without the intersection diplomatic nature would founder and the natural boundary fail.

Sharpe suspected no intersection existed. He hoped to test this by projecting the meridian towards—possibly across—the river. To do so, the meridian had to be definitively located, and Sharpe succinctly summarised his situation (Wark): the 'only thing we can do in longitudes with a chronometer is to work east [and] west from a fixed point in the country whose longitude is accepted' (Sharpe, 1894a). With the telegraphic baseline not established in 1897, the appropriate fixed point was the BCA station at Blantyre, more than 450 miles south of the approximate meridian/Songwe intersection. And so position-sensation was produced with watches and a knowledge of Blantyre, a 'pleasing English arcadia, set in the middle of harsh African savagery', 'a place of roses and geraniums, pink-cheeked English children, large-uddered cattle' (Johnston, 1889-90: 10). Named for Livingstone's Scottish birthplace, once it had lain at 'the threshold of ... unknown country' but by the 1890s it sat 'on the great natural highway from the eastern seaboard into the heart of Africa' (O'Neill, 1885: 435). Its imperial significance was commercial, commemorative and, after 1897, territorial. But Sharpe could not *only* carry longitude to the Songwe from Blantyre and instead invoked it within a 'citationary' (Gregory, 1995: 51) history of travel and technical situations.

In a brief longitudinal history, Sharpe (1897b, my emphasis) describes how the RGS

adopted Consul O'Neill's position for Blantyre (longitude) as being *one of the fixed points of the world. This is 35°2'30"*. Working from this with chronometers Commander Robertson and myself in 1894 took a series of observations for longitude from Fort Johnston up to Karonga which placed

the latter station in 33°59'30" ... within about a mile of the position for longitude ascertained by Messrs Stewart and McEwan some twelve years ago (33°57'24"). On my journey with Herr von Elpons we adopted as the longitude of Karonga 33°58'0".

In 1884 Henry O'Neill (British consul in Mozambique) established longitude at Blantyre. Derived from much more data, 84 sets of lunar observations were calculated with the RGS (O'Neill, 1883-84b). O'Neill's objectivity was one of rote work: repeated observations of the moon, his instruments and logbooks (Wark, 2016: 157; see Withers, Rae and Souch, 2015, on the RGS and instruments). O'Neill recognised 'how great the advantage would be if the longitude of one place in the interior was really accurately fixed' (O'Neill, 1885: 434) and hoped to establish 'a [secondary] meridian in East Central Africa' (Geographical Notes, 1884: 477)—*determined astronomically* rather than with an electrical connection to Greenwich—for reliable mapping. The RGS recognised the mean of his calculations as Blantyre's longitude (Coles, 1883-84). This was 35°3'54" rather than Sharpe's quoted figure (Geographical Notes, 1885: 538).³

In 1894 Sharpe carried O'Neill's Blantyre/1884 longitude north to generate longitude for Karonga (Sharpe, 1894b). He sought to verify this in a decade-old measurement attributed—perhaps inaccurately—to the Scottish engineers James Stewart and William McEwan. Stewart had travelled across the plateau in 1879 (American Society of Naturalists, 1880) to survey a route between the lakes; after Stewart's death (1883) McEwan was 'appointed to superintend the construction of the road' and in 1884 fixed longitude for Karonga as 33°53'00" (Geographical Notes, 1884: 579; McEwan, 1884-85). Sharpe and Elpons agreed on *another* Karonga longitude in 1897 from which they again projected time over distance, west from Karonga, to generate the 33rd meridian's intersection of the Songwe.

As anticipated, Sharpe could not project a meridian—tied to O'Neill's sight of the moon at Blantyre in 1884—across the Songwe in 1897. Colonial and diplomatic natures were incompatible: the meridian/Songwe intersection could not be rewritten in the 1890 agreement, nor made material in expedition space. The solution

³ Note variations in these figures. Sharpe fixed longitude for Karonga on 26 February 1894 as 33°59'0". He did not have the Nautical almanack for 1894 and calculated longitude using tabulated equations of time and the sun's declinations published in the RGS expedition guides *Hints to travellers* which specified time to minutes rather than seconds (Sharpe, 1894b).

reconciled diplomatic nature's integrity with a functional boundary. The Katendo or Lagangi—a Songwe tributary—was selected to extend *a Songwe* across the 1897 meridian to produce the location assumed in 1890 (Sharpe, 1897b; also Stewart, 1879) and the Katendo/Lagangi was incorporated into the boundary network as *the Songwe*. Lieutenant Rhoades observed it to reach Vimba village 'directly under the 33rd degree' (Sharpe, 1897b). Cairns were built either side of the Katendo/Lagangi (Close, 1899: 2) to produce the intersection, their construction effectively a material co-mapping reconciling data and territory to support imperial ownership at an intersection activated by geometry. But the cairns also traced Sharpe's chronometers and longitude's contestation within colonial nature's interpretive space-time.

Indeed, perpetual dialogues of imperial space-time characterised delimitation's technical work. At the meridian/Songwe intersection in 1898, the British commissioners equipped with a telegraphically-derived position-sensation, felt the 1897 party's boundary posts were '[not] so bad', if 'about 1100 yards too much to the West'. A new post was built at the 'real 33rd meridian' under the direction of Chichester and German assistant commissioner Glauning (Close, 1899: 22). Here the boundary diverged from the Songwe (Katendo/Lagangi) to follow a straight line running 15 miles south-west to a trig point at Ngungulu Hill where it recovered nature: the Congo watershed. This 'switch' was marked by a boundary post: three saplings 'wedged into a cleft in the rock on the summit' (Close, 1898: 31 August-1 September; Close, 1899: 17). Position-sensation in its 1897 and 1898 formats translated diplo-cartographic meanings for different phenomenal contexts.

The saplings, like the cairns, number among the micro-materials of delimitation. Similar encounters reveal delimitation's intersections with nonhuman creatures. At Mambwe pillars were built into two anthills and bearings taken from them. The colonial insects' nests were invisible from the carto-diplomatic prospects of 1890 but were of obvious utility for colonising humans generating position-sensations. Burnett (2001: 112) has noted that surveyors 'had to see suitable landmarks, make permanent inscriptions on trees and stones, and erect cairns and obelisks ... to reconcile places in the world with [a] plot of property' and similarly Demeritt (1997) discusses material 'proofs' used to construct objectivity. But the anthills show something different: demarcation did not inscribe a linear boundary so

much as produce a networked spatiality mediating metropolitan recordation—and its abstract territorialisation—and phenomenal experiences of colonial nature.

This section has hidden (Driver, 2013) the commission's 'non-European' co-travellers of 1897 and 1898: porters, interpreters, 40 soldiers—'Yaos and Atongas'—and their Sikh *havildar* (Close, 1898).ⁱ The journeys relied on Indian 'linesmen' such as Wahid Ali Khan, BCA's 'First Indian Surveyor', described by Close (1898: 8) as 'the best surveyor who ever left India to work abroad.' Khan and his colleagues Kadir Sharif and Kudrat Ali executed detail and elevation surveys while Europeans performed the trigonometrical work which promised 'a perfect geographic panopticon' (Edney, 1997: 113). Addressing a different setting Shapin (1994: 406; also Shapin and Schaffer, 2017) notes how Robert Boyle depended on the labour of his technicians: he 'spoke for them and transformed their labor [*sic*] into his truth'. Close did similarly, not least with respect to a location near Mambwe depicted in a sketch map (fig.2) bearing his signature. The map depicts a flag Khan raised in September 1898 as the 'criterion for the 32nd meridian'. 1,308 feet east and 3,958 feet south of the flag, on the watershed, a boundary post was built (Close, 1898: 29 September) to produce the location 'where the geographical watershed of the Congo [was] cut by the meridian 32° East of Greenwich' (Close, 1898: 117). From there the boundary left the watershed to follow a straight line westwards.

Khan's archival presence is a series of traces in maps (see Stotesbury and Khan, 1898) and the commissioners' narratives. He was not straightforwardly a technician 'who [was] physically present' but 'epistemologically invisible' (see Haraway, 1997: 27).⁴ He exercised a technical agency distinct from that of a European empiricist elite (Clayton, 2000: 36): his topographical work relied on the plane-table and mobility within a network of locations not encountered by British commissioners. Despite their embodiment/presence, the latter still sought abstractions—diplomatic nature's plateaus, boundary networks and imperial space-time itself—and so generated a requirement for subservient, idiographic technical agencies which Indian surveyors fulfilled.

⁴ Women were epistemologically *and* physically invisible (Haraway, 1997: 27), a suggestion the plateau delimitation supports.

The technical situations (Wark) of specific delimitation commissions therefore varied, sustaining different objectivities according to racialized assumptions and divisions of technical practice (see also Haines, 2015: 112-121, on ‘the location and cost of cartographic labour’ in Northern Rhodesia after the plateau delimitation). But this does not directly undermine the apparent esteem in which the British held the Indian surveyors (Sharpe, 1897a; 1898). Or maybe up to a point: the Government of India did not reward their excellent work other than with ‘a bonus in addition to their pay’ (Ibbetson, 1897). Perhaps this is unsurprising. Khan joined the 1898 commission for £35 per month, for four months: a ‘trained man [was] quite worth’ the ‘high pay’ but had still to find his own food and clothes (Close, 1898: 2 June). If Khan’s knowledge—produced as he sold his technical labour to BCA—was not ‘the captive knowledge of enslaved people’ then, nonetheless, it was ‘incorporated into European maps and geographical discourse’ and thereby lies at the core of survey-exploration’s ‘European occlusions’ (Lambert, 2013: 118). These must be reversed in our histories and geographies for ethical and intellectual reasons. And to write of ‘the survey’ is to ignore its multiple technical worlds and reliance on subaltern agencies.

CROSSINGS II: ROAD AND WATERSHED

That delimitation commissioners’ experience was directed, paradoxically, towards the status of abstractions is reinforced by the production of the Nyasa-Tanganyika plateau itself. Before the plateau could be divided by a boundary it had to be stabilised as imperial topography. Its ‘irregular surface’ (Close, 1899: 23-24) had to be flattened, and the paper prospects—the abstractions—of diplomatic nature mimicked to ‘build in’ (Mitchell, 1989: 229) objectivity. The phenomenal plateau was not a thing in itself and before delimitation was of ‘indefinite width’ (Close, 1899: 23), an area depending ‘upon the limiting height chosen [in 1898]. If a height of 5,000 feet were taken, it would consist of ... some 1,000 square miles; if 4,000 feet ... ten times this amount, and so on’ (Close, 1899: 24). So rationality—a measure of elevation—*could* isolate an object of diplomatic nature, produce its resources and populations, according to vertical/altitudinal axis. But this spatial choice was never required because the experience and mobility of survey-exploration—the journey itself—was used to abstract a plateau and mimic diplomatic nature’s ‘boundary zone’. Close (1899: 24) intended ‘to survey a strip of country from lake to lake some 50

miles wide, and this ... [was] approximately ... carried out', technical work generating its object.

A lack of resources did not obviate the plateau's imperial value. Gold deposits, once considered potentially significant, were unrealised and 'disforestry' disrupted water supplies, leaving 'healthy country' (Johnstone, 1889-90: 14) uncultivable. Nonetheless, by the mid-1890s experiments with export crops—coffee, cotton and sugarcane—were underway across BCA. Still, the plateau was most significant as 'part of the shortest way into the heart of Africa' (Close, 1899: 28)—Sharpe's (1918) continental 'backbone'—from the Indian Ocean. Johnston (1889-90: 36) had identified the 'Zambezi—Shire—Nyasa route [as] unquestionably the quickest and easiest way into the heart of Africa' although the Shire river's falling levels made navigation increasingly difficult (Withers, 1949: 24); and O'Neill (1883-84a) had travelled from Blantyre in 1884 not only to determine longitude but to lay down 'the shortest overland route from the lake district to the coast'. But in 1898 it was the Glasgow-headquartered African Lakes Corporation (ALC, formerly the Livingstonia Trading Company) that recognised 'how important this strip of land ... [might] eventually become' (Moir, 1898). Delimitation became commercial interest.

In the mid-1890s the ALC ran two steamers on both Nyasa and Tanganyika (Withers 1949, 24). But on Nyasa cargo could not be unloaded at Karonga's 'defective' anchorage and, between the lakes, the plateau's rivers were unnavigable (Close, 1899: 29). Therefore the plateau—though 'as worthless a bit of country as any in Africa'—became 'a road into the heart of the continent' (Close, 1899: 34) and the lakes. In two additional senses it became imperially significant *as land*: firstly as a zone of *dry* distances, of portage and labouring bodies carrying goods, machilas and servicing wheeled transport (e.g. rickshaws); and, secondly, according to the political-economic relation (Elden, 2010) of 'land'. In this sense the ALC feared alterations to the *de facto* boundary might 'hand over to Germany several native villages, the inhabitants of which have been friends and allies of the British and from whom a large number of carriers, so much needed on that portage, have been recruited' (Moir, 1899). Delimitation thereby projected imperial biopowers to produce an imperially useful plateau population, the object of basic quantitative knowledges. 'Tribes' were defined by 156 village locations (and therefore as 'British' or 'German'), occupations (iron smelters, carriers) and pursuits (hippopotamus hunting). Cattle were counted, water sources noted and supplies listed. Close was

confident of the benefits for tribes deemed 'British' and believed he 'cheered [Zombé's] heart by telling him ... his villages are in [British] territory' (Close, 1898: 20 October). Delimitation again exceeded inscription, and now reproduced plateau populations as labour reserves within networks of 'British' or 'German' villages.

The plateau's nonhuman contents became similarly significant. In the 1880s James Stevenson, a Glasgow manufacturer, and the engineer James Stewart considered how best to incorporate 'Lake Tanganyika into the trading sphere of the Livingstonia Trading Company'; Stewart was content to 'bribe and bully' (Wolf, 1971: 367) the evangelical London Missionary Society, which ran a mission on Tanganyika, to support the creation of an overland supply route from the Indian Ocean. In 1881 Stevenson's offer to part-fund (£4,000) road construction was accepted. Stewart and then McEwan supervised road construction over 50 miles from Karonga to Wanda before both engineers succumbed to malaria. Owing to financial troubles the road itself succumbed to indeterminacy: beyond Wanda it had 'no pretensions to being laid out in any way' even if a 'very passable road' for 'rough wheeled transport' existed within BSAC territory. Within the BCA administration, extending 60 miles west from Nyasa, the road was neglected: 'No money is spent on it, and ... no effort has been made to build rest-houses, or to improve the conditions of travel along [this] important thoroughfare' (Close, 1899: 30). It was a 'rather wasted "tour de force"' (Johnstone, 1889-90: 25). Where the road was 'merely the scraped and stumped surface of the jungle' (Close, 1899: 27) its singularity of presence, direction and identity was difficult to discern. But this tenuous materiality permitted the commissioners to rewire the plateau and incorporate the road within a British-dominated network of water commerce.

The Stevenson road was unconstrained by any 'natural' sphere of British imperialism. It crossed the watershed and the ALC feared that sections of 'our British road' (Moir, 1898) would be given over to German territory and exclusive British access to it undermined. A *British* road necessitated a particular relation between the road and the boundary and the mobility produced by the road facilitated the British commission's production of position-sensation. They travelled a well-surfaced if winding route and the 'stream separating British Central Africa from British South Africa [was crossed] about 3 miles from Nyala' on 4 August (Close, 1898). All the while the road remained south of the materials conveying the boundary: the Songwe then, west of Ngungulu, the watershed.

1321 But, west of Fife on 9 August, Khan observed the watershed to cut the
1322 Stevenson road (Close, 1898). Here, a natural boundary could not make a British
1323 road. Close (1899: 32). Turning Khan's labour into his truth, Close therefore
1324 proposed
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1330 that the boundary line should be 2 miles north of the road at this point...

1331 [Hermann] said that he was prepared to agree to the north edge of the road
1332 being the boundary, but that he had been strictly forbidden to make any
1333 further concession... I told [Hermann] that it was impossible to accept this
1334 arrangement, and wrote to the Collector at Ikawa, pointing out the desirability
1335 of moving the road further to the south for the few miles affected. He agreed,
1336 and ... the road was shifted well clear of the watershed shortly afterwards.
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1340 Here was a spatial choice to separate diplomatic and colonial natures, a counterpoint
1341 to the exploration of the Katendo/Lagangi where their intersection conjured a
1342 location for delimitation. Now, to avoid an intersection, the British renegotiated
1343 materiality: the road was moved south and Close (1898: 1 September) '[took] the *real*
1344 *watershed* as the boundary'. A party under Boileau soon 'finished the Road':
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1348 there is only some hoeing and stumping to be done ... The new road is $7\frac{1}{2}$
1349 miles long, or $\frac{1}{2}$ mile longer than the old. *The old road is blocked by abbatis,*
1350 *and is absolutely impassable.* The new road is nowhere within fifteen
1351 hundred yards of the watershed (Close, 1898: 14 September, my emphasis).
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1355 The labourers' hoeing, stumping and—using defensive architecture—the
1356 blockade of the road's previous iteration reordered exchange values on the plateau
1357 around the natural boundary. Diplomatic nature's meaning was, in this case,
1358 retained through active material engagements. In this sense delimitation mediated
1359 the relation between diplomatic nature (a textual what-has-been) and colonial nature
1360 (a sensuous here-and-now) to produce the *image* of a unified, coherent imperial
1361 nature stretching across space-time. This had formatted the plateau for its usefulness
1362 to imperialism and capital, as the road and boundary's abstract container. Imperial
1363 nature, in this sense, was 'dialectics at a standstill ... not progression but image,
1364 suddenly emergent' (Benjamin, 1999: 462).
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1374 CONCLUSION

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The image of imperial nature which supported a boundary assemblage on the plateau took a concrete form: 23 posts demarcated the boundary over 250 miles between the lakes. The line followed natural features apart from where, for 29 miles and six straight lines, it traced geometry. The triangulation survey was finished by 20 October 1898 (Boileau and Wallace, 1899: 594) and the commissioners put their names to a map (Close and Boileau, 1899). The boundary was less an inscription of imperial topography than a fabrication to resolve the contradictions of its sources: 1890's anticipatory, textual knowledges and the sensations of 1897-98. These expressions of imperial power revealed its production in metropolitan *and* colonial worlds.

Delimitation practice produced a boundary as a *moment* in imperial space-time. Metaphysical and noumenal specifications on space were translated into material and phenomenal forms and this, I suggest, was the utility of sensation within imperial territorialisation processes. But sensations in colonial nature uncovered the fragility of recordation and the ambivalence of metropolitan power, a perspective a little different to those which emphasise the fragility of representation. Instead, I have suggested that the geographical knowledge of the plateau followed not only from social agreements among imperial agents, but as the border itself was produced as a spatial artefact to resolve the contradictions of competing technical situations.

Nonetheless, commissioners still asserted the powers assumed of idealised imperial subjects. Mischievous naming practices (conjuring a 'Songwe'), material interventions (admitting the transcendence of nature and moving the Stevenson road) meant that they made 'cuts' (Wark, 2016) in the phenomenal reality of colonial nature to make human agencies *appear* to rise above their inert surroundings, having struggled heroically and intellectually therein. This was only superficially possible and I have described colonial nature as a vital, sensuous source of challenges to imperial power and delineated subjects. Indeed, knowing more about colonial nature compounded the problems of delimitation and imperial governance generally. Blantyre's longitude may be considered accordingly. Although fixed by the RGS (Sharpe, 1897b), Close considered this unresolved after the 1898 delimitation because the British commission was 'unexpectedly prevented from determining [it] telegraphically' (Close, 1900: 75). But could *more* data provide objectivity, or just another objectivity—of Greenwich, wires and insulators—challenging O'Neill's lunar

observations and logbooks? It did not matter much: Close (1900: 75) wrote that Blantyre's accepted longitude would 'not be more than half a mile in error', adequate for a military surveyor concerned with a workable boundary.

Figures

Fig.1. UK Foreign Office. (1890). Africa, Equatorial & Central. Central Africa:
Unofficial map showing proposed boundaries in accordance with Anglo-German
Agreement initialled by Lord Salisbury and Count Hatzfeldt

Fig.2. [No author]. (1899). FO 925/322. Nyasa-Tanganyika Boundary: Map of the
country near the intersection of the watershed with the 32nd meridian.

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NYASA - TANGANYIKA BOUNDARY

MAP OF THE
COUNTRY NEAR THE INTERSECTION OF THE WATERSHED WITH THE 32nd MERIDIAN
Reproduced from Enclosure N° 4 in Capt. Close's Despatch N° 4
Dated Jan. 27th 1899

S^d Herrmann
Hauptmann & Deutscher Kommissär

C. F. Close Capt. M. C.
British Commissioner
11th Nov. 1898

Zimod at the Intell. Div. War Office, July 1899