



**'A Volcanic Incident': Towards a geopolitical aesthetics of the subterranean**

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## ‘A Volcanic Incident’: Towards a geopolitical aesthetics of the subterranean

### *Abstract:*

This paper experiments with the basis for a geopolitical aesthetics of the subterranean. It does so using a particular ‘Volcanic Incident’ – the brief emergence of Ferdinandea island in the Mediterranean in 1831 – and a range of visual and textual inscriptions around this geophysical event – from the art work *Emergent Landmass (A Chronicle of Disappearance)* [2006] by artist Ilana Halperin to military dispatches. Bringing together these various sources the paper considers firstly how the subterranean might ‘unground’ geopolitical ideas and practices, and secondly how we come to know, or to sense subterranean volumes, an important aspect of understanding the practices of power at work within and through them. Evolving propositions around a geopolitical subterranean aesthetics the paper explores concerns with a subterranean optics, with the sensing of dynamic earth systems and with temporal and spatial scales. From within the context of this specific case study the paper reflects on how it is that subterranean aesthetics might have wider purchase on the relations between terrains and territory, the vertical and the volumetric, and the geopolitical, geophysical and geopower.

Key words: subterranean, aesthetics, sense, geo, vertical

## ‘A Volcanic Incident’: Towards a Geopolitical Aesthetics of the Subterranean

### Prologue- Emergent Landmass (A Chronicle of Disappearance)

*A long vanished piece of the British Empire is about to resurface, according to scientists monitoring underwater volcanoes in the Mediterranean. Geologists studying the sea-bed near Sicily say there are signs that a sizable island claimed by Britain, but also by Italy and France, when it last surfaced in 1831 may do so again ‘in the near future’ (Richard Owen, The Times, 2002)<sup>1</sup>*

<Insert figure one in here>

Figure One – *Ferdinanda*, Etching from *Emergent Landmass (Chronicle of Disappearance)*, Ilana Halperin (2006)

*“In the end the island had a series of seven names”, reads the text on the gallery wall. To the left sits a Perspex box with shelves upon which have been placed some small black rocks. Further to the left are seven wood framed etchings, each titled after one of the island’s names, Sciacca, Nertita, Corrao, Hotham, Julia, Graham and Ferdinanda. Their delicate lines pick out the outlines of the volcanic structures. Sitting isolated in the middle of their white paper sheet, each etching features a different view of the island, gradually diminishing in volume as the series proceeds (author’s own notes, 2017).*

*As the site was visible for only about three months... this is an instance of a wanton multiplication of synonyms which has scarcely ever been outdone even in the annals of zoology and botany (Charles Lyell, Principles of Geology 1833)<sup>2</sup>*

### Introduction- Sensing the Subterranean

This paper proposes a geopolitical aesthetics of the subterranean. Experimental entwinings of art works and archival material (including the diagrammatic and visual apparatus of science and empire) enable the elaboration of a particular ‘volcanic incident’ that sits at the heart of my paper. In doing so I explore what aesthetics might offer for thinking about the subterranean, and in turn identify what such an aesthetics might contribute to geopolitics. Why a subterranean aesthetics? The subterranean has posed geopolitical theorists and practitioners a series of challenges around how it is we know these spaces – render them visible (or better sensible) and

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3 calculable – so making them available for exploitation and control.<sup>3</sup> Whether the Arctic sea bed,  
4 military tunnels or mining deposits around the world, subterranean and submarine spaces often  
5 attract attention in part through their resistance to or complication of regimes of visualisation.<sup>4</sup>  
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7 The story I tell here combines surface and subsurface, subterranean and submarine in a tale of  
8 volatile matters, earthly forces and energies and thwarted colonial practices and inscriptions.  
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10 Such an entwining recognises the ontological and epistemological condition of islands as being  
11 located within a transition zone between land and sea, and parses a version of what Hayward has  
12 termed ‘aquapelagos’. By the latter he means ‘assemblages of marine and terrestrial spaces’, a  
13 land-oceanic continuum that when mobilised here requires that we resist any easy distinction  
14 between the subterranean and submarine.<sup>5</sup> Not because they are spaces that should be collapsed  
15 together, but because these are topographic distinctions that are refused any durability in space  
16 and time by the dynamic tales of terrain told here.  
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24 Taking up aesthetics enables a complication of thinking around how it is we know subterranean  
25 spaces, their dimensions, dynamics and materialities, all features important to their geopolitical  
26 significance.<sup>6</sup> As such, thinking about the geopolitical dimensions of what is a wider project on  
27 aesthetics and the subterranean is to both draw from but also to contribute to recent geopolitical  
28 engagements with the complexities of the volumetric and the vertical, of terrain and territory,  
29 and the geopolitical and geophysical.<sup>7</sup>  
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36 I begin from a ‘volcanic incident’ and a range of inscriptions (visual and textual) made about it,  
37 including one piece of art work - *Emergent Landmass (A Chronicle of Disappearance)* [2006] by artist  
38 Ilana Halperin. The art work consists of a series of seven etchings, a set of rock samples in a case  
39 and an essay *An Anecdotal History of Volcanoes* sometimes given as a performance lecture.<sup>8</sup> If the  
40 artwork forms one site for the exposition of a subterranean aesthetics, equally important is my  
41 archival work on the location the work forms a trace of, the ephemeral volcanic island  
42 Ferdinandea. Ferdinandea was but one of the seven names given to the volcanic island that  
43 surfaced for six months in late 1831 in the Mediterranean between the island of Pantelleria and  
44 the town of Sciacca on the Sicilian coast. Situated on a key trade route between Europe and  
45 Malta, in the ‘gateway to the eastern Mediterranean’ the island’s diminutive height (but 65m) and  
46 short life span belied its importance as a geopolitical and geological flashpoint. In a story often  
47 tinged with the sublime in its telling, a series of earthquakes in late June signalled the subsurface  
48 activities that birthed the island. Emerging above the surface by mid-July, reaching its maximum  
49 circumference of 4km sometime soon after, it was gone by January 1832, eroded by waves and  
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3 wind. What remains is a rock platform some six metres below the surface understood since 2002  
4 to be the outcropping of a much larger submarine volcano. During its brief life above the surface  
5 the island was claimed, under the 'island born from the sea' law, by four powers – Britain,  
6 France, Spain and the Bourbon court of Sicily. It also offered European geologists a living  
7 laboratory in which to test their evolving theories about the inner architecture of the earth and  
8 its geophysical processes.  
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14 In this paper this 'volcanic incident' (as it has been termed by a nineteenth century Maltese  
15 Historian) and its multiple inscriptions offer a site from which to propose some dimensions of a  
16 subterranean aesthetics, and to explore their pertinence to the geopolitical.<sup>9</sup> The paper studies a  
17 range of traces of this 'subterranean wonder' (as it was described by travellers) – from military  
18 dispatches, the log books and sketch-books of sailors and travellers, newspaper articles, the  
19 accounts of learned societies around the world, key nineteenth century geological texts and  
20 several centuries of art works. Piecing together an account of this 'ghost' island, the paper  
21 responds to the challenges that the volumetric in general, and the subterranean and submarine in  
22 particular, have posed to geopolitics, wherein the subterranean resists a geopolitics based on two  
23 dimensional cartographic imaginaries and practices of power designed to work over fixed,  
24 definable surfaces.<sup>10</sup> Like the volumes of airspace, the subterranean and submarine demands we  
25 'consider the manner in which spatial volumes are experienced, inhabited, and made present to  
26 the lives that live them' and the powers that seek to control them.<sup>11</sup> In short, one of the  
27 challenges of volumes in general and the subterranean in particular is how exactly it is that we  
28 can come to know these spaces, and hence render them legible and controllable.  
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40 The subterranean is no stranger to concerns with aesthetics. Indeed, imaginaries and visions of  
41 underground spaces and depths – whether caves, grottos or marine trenches – are central to the  
42 classic aesthetic form of the sublime.<sup>12</sup> Since Edmund Burke's key essay on the topic from the  
43 mid 18<sup>th</sup> century (wherein the sublime was twinned with, but distinct, from the beautiful), the  
44 sublime has been associated with the unknowable, with awe and terror excited in the hearts of  
45 humans, by vast, ungraspable scales and spaces of nature that whilst sensible to human faculties  
46 largely exceeded their powers of understanding.<sup>13</sup> Yet an aesthetics of the subterranean is not  
47 exhausted by the ideas of the sublime, not least because contemporary scholarship on aesthetics  
48 now demands that we move beyond understanding aesthetics principally through preconditioned  
49 categories such as the sublime and the beautiful.<sup>14</sup> Williams, for example, offers us an aesthetics  
50 of the underground (although it is not framed as such) through close readings of 18<sup>th</sup> and 19<sup>th</sup>  
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3 century novels that elaborate the intersections of subterranean imaginaries with ideas of nature,  
4 technology and culture.<sup>15</sup> Whilst within Geography, Gandy and Garrett engage with the  
5 aesthetics of sewers through embodied experiences and representations of these spaces.<sup>16</sup> In the  
6 former case this concerns the underground photography of Felix Nadar and its role in making  
7 visible the rationalising modernity of Parisian Sewers. In the latter case this concerns not just  
8 images but more multisensory, embodied experiences of these sewer spaces, directing us to such  
9 wider understandings of aesthetics, that take account of its origins as to do with the senses as  
10 such. More particularly we might hone in on the two lenses through which aesthetics have come  
11 to matter to Geographers of late. On the one hand, and within Geopolitics in particular, we find  
12 concerns with aesthetics as offering tools to reflect on art (or other forms of creative practices)  
13 and their effects in the world.<sup>17</sup> Alan Ingram has been key to promoting this understanding of  
14 aesthetics, especially with respect to art, through the lense of two key, if rather different,  
15 aesthetic theorists, Terry Eagleton and Jacques Rancière. He makes a compelling case for a need  
16 for a more careful understanding of aesthetic theories in order that Geopolitics grasp more  
17 clearly what it is that art is and does.<sup>18</sup> On the other hand we find a more expanded sense of  
18 aesthetics which takes account of is multiple histories and locations within Geography as a  
19 discipline, and which seeks to acknowledge the histories of aesthetics as the senses as such<sup>19</sup>.  
20 Thus while making space for aesthetics and art, such an understanding of aesthetics also takes  
21 account the aesthetics of landscape and environment as well as a range of everyday aesthetics  
22 whether these be of built forms or vernacular practices. Such accounts, perhaps unsurprisingly,  
23 tend towards a theoretical breadth in their approach, taking seriously Eagleton's and others  
24 observation of the breadth of aesthetics, and that 'there can be as many understandings of  
25 aesthetics as there are aesthetic theorists'.<sup>20</sup>

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42 The subterranean aesthetics that feature in this discussion braid together dimensions of these  
43 variegated senses of aesthetics. On the one hand, sitting central to the concerns of this paper are  
44 sensory experiences of that which is not visible, or not easily and generally visible to humans –  
45 the underground – and how it is that various technologies might offer the sensory apparatus by  
46 which we come to know the subterranean. This might be through attempts at scientific  
47 descriptive or diagrammatic and cartographic precision that are resisted by the volatile matters  
48 and animate processes of the volcano. I follow here those geopolitical literatures that have  
49 foregrounded vision and other senses in practices of rendering legible, and hence controllable,  
50 state spaces. For whilst these might not be signalled as aesthetic practices in their use of the  
51 senses as part of statecraft they surely are.<sup>21</sup> On the other hand, are those perspectives that key  
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3 into more artistic understandings of the aesthetic. These appear here in terms of the animated  
4 sublime accounts of travellers, landscape depictions of the island that conform to aesthetic  
5 standards of the day, or most clearly the art work of Ilana Halperin. Towards the end of the  
6 paper, as my focus narrows to Halperin's work I experiment briefly with the possibilities of  
7 Elizabeth Grosz's formulation of 'geoaesthetics.' While this is a fruitful thread, especially around  
8 rethinking the 'geo' in 'geopolitics', the specificity of Grosz's aesthetic formulations do not serve  
9 my wider concerns with a subterranean aesthetics, thus it is a discussion I ultimately leave open  
10 for further work.<sup>22</sup>  
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18 It might seem odd to have so many understandings of the aesthetic in one paper. I think what is  
19 crucial here is that aesthetics does not, nor ever has, conformed to one single theorisation. I am  
20 driven here by the sense of what resources are demanded by the particular story I am telling, by  
21 what complex subterranean aesthetics emerge from this particular story and what is needed to  
22 understand them and their work in the world. And what they do is not one single set of things,  
23 but multiple and sometimes complicated critical manoeuvres within the realms of statecraft,  
24 science and empire as well as the discourses of contemporary Geopolitics as a Geographical sub-  
25 discipline. I will reflect further in the conclusion on how it is that the subterranean aesthetics that  
26 emerge through this 'volcanic incident' might themselves 'unground' any pursuit of a singular  
27 understanding of aesthetics.  
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36 I elaborate my argument as follows. In the first part of this paper a series of intersections are  
37 posed between my historical reconstruction of this 'subterranean wonder' and contemporary  
38 geopolitical discussions around the entwining of the geophysical and the geopolitical; the  
39 volumetric and vertical and notions of territory and terrain. In exploring how the underground  
40 might 'unground' normative thinking about the 'ground' of geopolitics, questions emerge around  
41 knowing the subterranean.<sup>23</sup> Thus, the second part of the paper takes leave from accounts of  
42 the underground that have demonstrated rich intersections between subterranean optics, or lack  
43 thereof, and the command and control of often imagined subterranean volumes – whether  
44 mineralogical or military. By way of a response, a series of aesthetic dimensions of this particular  
45 subterranean story are explored, focused around a subterranean optics that, in a thoroughly  
46 modern sense of vision, combines other senses too. The paper closes by moving away from this  
47 specific 'volcanic incident' to reflect on what a subterranean aesthetics might offer to wider  
48 geopolitical concerns, foregrounding how such an aesthetics might sensitize us to the need to  
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account for, and hence work with, the multisensory ways volumetric practices of power work in world.

### Emergent Landmass- Ungrounding

**'if its just a little island... we are not going to start a big fight over it'** <sup>24</sup>

*It was in great activity, throwing up a vast quantity of ashes, which became hard in a few hours. The fall of these rendered it difficult to land, but Captain Senhouse managed to do so, and planted the British flag, taking possession in the King's name. This, I imagine has been merely done to prevent any other nation (America for instance) taking the same advantage and asserting the right of possession. If the volcano should form itself into an inhabitable island, it will properly belong to Sicily being about 25 miles distant from that ideal...I should not wonder however it if disappears as Sabrina did' (Malta Gazette, July 27 1831). <sup>25</sup>*

*A bizarre diplomatic row is brewing over the ownership of a submerged volcanic island that may be about to reappear after 170 years in the seas off Sicily because of seismic activity around Mount Etna. Italy's official maritime organisation demanded yesterday that Rome lay claim to the island before Britain, France, Libya or any other state does so. A British claim could be based on the fact that a British admiral planted a flag when the island emerged from the sea for six months in 1831. The Italian Naval League, founded in 1897 to promote Italy's maritime traditions...said that Italy must carry out a "preventive strike" to declare the island "a contiguous maritime zone, otherwise it could be claimed by other countries, including Arab states such as Libya" (Times-Malta 2002).<sup>26</sup>*

80 years prior to the emergence of Ferdinanda, the great Lisbon earthquake of 1755 had not only shaken the city to its foundations, but had also shaken the belief structures of human environmental relationships, setting in train the production of the modern subject that strained to elevate itself to a 'position where it is safe from being crushed and buried by the earth's upheavals'.<sup>27</sup> As Clark and others have persuasively demonstrated, the moving of the earth has long been a site that has ungrounded key tenants of thinking. In storying an ephemeral territory Ferdinanda offers us a geopolitical flashpoint, not only through the apparently ongoing wranglings of the four countries seeking territorial control, but also in how it works to 'unground' individual and collective geopolitical understandings.

Recent years have witnessed the awakening of a quiet, stilled earth in general social science and arts and humanities discussions as well as within geopolitical concerns.<sup>28</sup> Indeed, whether we are



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3 thinking about the field of Geopolitics persay, or about the expansion of social and political  
4 theory towards a new kind of *geopolitics*, or ‘geologic politics’, an expanded sense of Geopolitics  
5 has emerged. From the perspective of social and political theory, this is a Geopolitics ‘concerned  
6 as much with the temporal dynamics and changes of state in Earth systems as it is with more  
7 conventional political concerns revolving around territories and nation-state boundaries’.<sup>29</sup> For  
8 those working within the existing field of Geopolitics, such concerns with the ‘geo’ appear most  
9 valued for their address to an ‘ongoing constitution of the geopolitical stage’ that replaces any  
10 sense of the earth as a static backdrop across which Geopolitical debates take place.<sup>30</sup> As  
11 Depledge observes ‘while the economy of critical geopolitics is starting to be opened up to allow  
12 nonhumans to participate in this drama not just as features but as actants, the stage itself, and the  
13 “earth” from which it is comprised, remains under-theorised’.<sup>31</sup> This is, as Elden a key  
14 proponent of these ideas suggests, to ‘think about geopolitics not simply as global politics or as  
15 international politics, but very much as a politics of the earth...thinking about the materiality of  
16 the ‘geo’ in terms of how we think about the question of geopolitics.... [the politics that results  
17 is] not, then, simply a politics of the solid land, but politics in relation to water, ice, subsoil and  
18 the submarine.’<sup>32</sup>

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31 *When the Malta Government Gazette reached the Neapolitan Court. His Sicilian Majesty, through the Prince of*  
32 *Cassaro, registered a vehement protest to the British representative in Naples, Mr Hill. It was stated that His*  
33 *Majesty could never have thought that someone would have been dispatched from Malta to plant the flag of His*  
34 *Britannic Majesty on an island formed by nature so close to his domains. He therefore called upon the government*  
35 *of Malta to explain its action and to desist therefrom...meanwhile the patriotic’ Sicilians’ embarked from the*  
36 *neighbouring port of Sciacca, only 25 miles away from the island, which they retook and placed the flag of the*  
37 *Kingdom of the Two Sicilies instead of the British Ensign*<sup>33</sup> (recounted by Gando, Malta Historical  
38 Society, 2010).

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45 *Sicilian divers will this week try to plant a flag on a bubbling underwater volcano to thwart any claims of British*  
46 *sovereignty should it resurface. The black lump known as Graham Island is threatening to reappear 169 years*  
47 *after a British naval captain planted a union flag and proclaimed it part of the empire. To bolster their case,*  
48 *Sicilians, who call it Ferdinanda, summoned the descendant of the Bourbon King of Naples. In a ceremony*  
49 *filmed by a flotilla of camera crews, Prince Carlo di Bourbon lowered a plaque into the waves and told cheering*  
50 *locals: It will always be Sicilian.* (Carroll, The Guardian, 2000)<sup>34</sup>  
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3 *Clutching a Union Flag to my chest, scrutinised by six increasingly suspicious Sicilians, I stand at the bow of the*  
4 *motor yacht Piga, and stare through clear water to the rocks visible just below the surface...there was hardly a*  
5 *sound, just the lapping of the waves. It was time to telephone the Foreign Office. My chest bursting with pride, I*  
6 *would like to reassure Her Majesty's Government that I am in a boat, off Sicily, about to reclaim Graham Island*  
7 *for Britain... there was a long pause... Pardon?...*  
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11 *I unfurled the flag. For the first time since 1831, the Union flag fluttered proudly over Graham Island. The*  
12 *Sicilian Sailors with me on the Piga weren't muttering suspiciously any more. There were loud references to Tony*  
13 *Blair: not all of them flattering. Shouts of Italia also featured. ... you write Ferdinanda is British, you die, you*  
14 *die... I was warned (Lusher, The Telegraph 2002).<sup>35</sup>*  
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20 Islands have long taken up a particular place in territorial imaginaries, especially state territory,  
21 indeed, it is claimed that the modern state is a 'derivation of an ideal typical state conceived of  
22 as an island'.<sup>36</sup> As Steinberg notes, 'the modern, or Westphalian, idea of the state as territorially  
23 bounded, unambiguously governed by a sole authority and culturally homogenous is a  
24 profoundly insular vision. This vision joins the legal norm of the sovereign, territorial state with  
25 the modern ideal of the unified and isolated island'.<sup>37</sup> Islands, natural or manmade, continue to  
26 offer geopolitical flashpoints, extending the economic and political influence of states at sea as  
27 climate change reconfigures global geographies of land and resource access.<sup>38</sup> Shifts in Maritime  
28 Law, principally the United Nations Law of the Sea Convention (signed in 1982) have  
29 foregrounded islands as strategic geopolitical spaces, something which the Italians were quick to  
30 determine in their 21<sup>st</sup> century ownership claims. What kind of vision of territory then does this  
31 ghost island offer us?  
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41 Over the years Ferdinanda thwarted a series of 'ceremonies of possession', serious and tongue-  
42 in-cheek, that attempted to capture and corral it as territory.<sup>39</sup> Even before it disappeared,  
43 nineteenth century military dispatches and news items were dotted with accounts of terrain that  
44 resisted early territorialising practices of mapping and flag-planting; would-be-colonisers made it  
45 through storms of raining ash and debris only to find the ground too hot and unstable to walk  
46 on whilst clouds of noxious gases made the men trying to map the surface vomit.<sup>40</sup>  
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51 Ferdinanda's surfacing and disappearance offers a geophysical-geopolitical story that affirms the  
52 need for geopolitical imaginations that function in more than two dimensions and with a sense  
53 of territorial permanence. This involves decentering earth's surfaces in favor of unstable, material  
54 volumes as the contexts within which and through which power takes place, and refusing easy  
55 distinctions between land and sea.<sup>41</sup> As Elden observes 'concepts of territory are rooted in  
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3 simplified assumptions of the planet's surface that were inherited from particular experiences  
4 and institutions in temperate Europe,' this however is a European story that complicates such  
5 understandings.<sup>42</sup>  
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10 Such attentiveness to terrain and conceptualisations of its animate volumetric forms rather than  
11 static surface expressions is not new. Indeed, my storying of Ferdinanda's subterranean wonder  
12 comes in the midst of what seems to be a recovery of terrain by geopolitics, albeit one with  
13 longer antecedents. As such Ferdinanda's ephemeral territories can be mapped alongside those  
14 of ice, sea and sea beds, rugged highlands and seasonal wetlands that are pressing our attention  
15 towards the materialities of territory – terrain and its challenges to the practices of political  
16 rationality.<sup>43</sup> For Scott terrain presents multiple 'frictions' that offer resistance to practices of  
17 state-formation and maintenance,<sup>44</sup> whilst as Carter writes of coasts, they are not lines, they are  
18 rather 'high mobile and dynamic zones of interaction between sea and land, but also zones of  
19 encounter and conflict between inhabitants and often colonist populations'.<sup>45</sup> Hayward's concept  
20 of the aquapelagic too foregrounds the need to take account of the ongoing assemblages of  
21 aquatic and terrestrial, rather than subscribe to any fixed distinction between these terrains.<sup>46</sup>  
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Much attention has been drawn of late to the mobility and morphology of Arctic sea ice, as  
changing patterns of depth and extent are reigniting territorial and resource disputes in the  
region.<sup>47</sup> Building from these studies Steinburg and colleagues query to what extent politico-legal  
concepts of territory 'depend on assumptions of a stable and dry land. How are these  
complicated by indeterminate and changing environments' as well as by a growing respect within  
Geopolitics and more generally of territorial relations that are more than European and instead  
account for those ways of dwelling with the environment that demand other ontological and  
epistemological relations with terrain?'<sup>48</sup>

*On 14<sup>th</sup> April 1986, in the wake of the Libyan bombing of the Berlin nightclub La Belle, Ronald Regan ordered the execution of 'Operation El Dorado Canyon' (the bombing of Libya). As the US F-111E's left Britain, on route for Tripoli via the Mediterranean just south of Sicily, they spotted a 'huge dark shape beneath the surface of the sea' together with smoke rising from the surface. Worrying it was a Libyan submarine, and dismissing queries about how the Libyans had acquired submarines (maybe from Russia?) they dropped depth charges and continued on to drop some 60 tonnes of munitions on Tripoli.*

Whilst this bit of misidentification did not have long lasting geopolitical effects, its storying as part of the multiple inscriptions of Ferdinanda does direct us to one of the key coordinates of a

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3 subterranean geopolitics- the sensing of the subterranean. Unsurprisingly perhaps vision is the  
4 primary geopolitical sense, central not only to historical colonial cartographies but also to the  
5 hypervisual regimes of drones and the military industrial complex.<sup>49</sup> In his important book  
6 'Seeing like a State' Scott details the importance of territorial legibility to statecraft, describing the  
7 premodern state as 'blind' and the modern state, in an Enlightenment like metaphor, as coming  
8 to 'see' (albeit in a flawed way) via a whole range of standardization practices (related to  
9 language, land and law, transportation organisation) and the surveys and maps that enabled their  
10 evolution and implementation. Building on Scott's arguments (as well as those of Foucault) a  
11 series of accounts of the importance of legibility in statecraft have emerged, their detailing of  
12 territorial visibility and calculability resting firmly on an imaginary of human mastery over the  
13 environment. Writing with respect to Cold War struggles over the Arctic Ocean, Dodds  
14 observes the challenges posed by 'ice depth and spread, changeable water temperature and  
15 inclement weather' to rendering this space and its subterranean extents legible and hence  
16 controllable. His account identifies the importance of the bathymetric and oceanographic data  
17 collected by a 2007 Russian Expedition for making this territory readable and hence enabling  
18 extended claims to sovereign rights.<sup>50</sup> We see a similar scenario play out on a much smaller scale  
19 in the Mediterranean, where Italy hastened amidst the 2002 rumors of enhanced volcanic activity  
20 to deploy new technology to resurvey the sea bed and reinforce their claim to Ferdinanda as a  
21 contiguous part of their continental shelf.<sup>51</sup> As the UN Convention on the Sea has overwritten  
22 claims made by flag planting, new and more sophisticated techniques of knowing subterranean  
23 space become crucial to territorial claims. This is not novel, indeed geopolitical discussions of  
24 the subterranean have long been concerned with techniques by which subterranean volumes  
25 become known. For whether with respect to contemporary military practices or critiques of  
26 colonial resource exploitation it is a rendering visible (and hence legible and calculable) of the  
27 vertical that is key to practices of subterranean control and exploitation.<sup>52</sup>  
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45 What happens to these claims however when terrain or the 'geo' proves resistant to such forms  
46 of knowing? When the ideology of human mastery over the environment can no longer be held?  
47 When the terrain thwarts the sensing practices of some or many human groups seeking control  
48 of the space? Sociologist Gaston Gordillo has experimented with ideas of 'opacity' to describe  
49 the challenges posed by the rugged terrain of caves, rocks, tree cover and mountainsides  
50 occupied by Afganistani insurgents.<sup>53</sup> Haunted by Weizmann's accounts of the Israeli  
51 militarisation of the underground and its resistance to visual strategies, Gordillo notes how  
52 'textured, volumetric, non-representational multiplicities of the global terrain' create opaque  
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3 spaces that the panoptic regime cannot see (or see clearly).<sup>54</sup> What is needed, he argues, are new  
4 conceptual tools to account for the ‘volumetric physicality of space and for the ways in which its  
5 forms, folds and multiplicity preclude vision [and the deployment of violence]’,<sup>55</sup> in other words,  
6 new ways through which to know and sense these spaces resistant to normative visual regimes of  
7 control. In this paper’s second part I follow up this call through a discussion of set of  
8 subterranean sensing practices present in Ferdinanda’s story. In other words, I suggest that  
9 aesthetics might offer just such a conceptual tool through which to sense opaque spaces. In what  
10 follows a focus on a series of representations of the Ferdinanda story directs attention to the  
11 multiple ways in which aesthetics (understood here in an expanded sense) might enable us to  
12 account for the ‘volumetric physicality of space’ and the condition of terrain as always being  
13 made.  
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### 22 **Subterranean Aesthetics- Sensing the Subterranean?**

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29 Figure 2: Three images of Ferdinanda, Left- one of the Halperin’s seven etchings; Middle-  
30 Marzollo, see note 57, Right- Davy, see note 59.  
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34 If the underground has long been a source of fascination for artists, the designation of the  
35 Anthropocene as a ‘geologic epoch’ has reignited a concern with the subterranean, not least  
36 because many of the alternative namings of this epoch, such as the Chthulucene or the  
37 Capitalocene direct our attention to subsurface life and resources.<sup>56</sup> From this interest a rich  
38 range of subterranean optics have evolved to render visible subterranean spaces. We might think  
39 of the growing body of artistic work around extractive capitalism, wherein scientific or military  
40 practices of data visualisation are deployed to critique the corporate and state forces behind these  
41 activities.<sup>57</sup> These practices evolve a mineralogical forensics operating at the ‘thresholds of  
42 detectability’ to trace and presence the use and abuse of subterranean resources.<sup>58</sup> Halperin’s  
43 work, however, keys us into a rather different subterranean optics; one based on the  
44 technologies and practices of seeing the subterranean from the era of Ferdinanda’s emergence,  
45 these are of course no less the products of the intersection of science, politics and capital. In  
46 this part of the paper the artistic, scientific and visual culture of Ferdinanda, including  
47 Halperin’s art work, enables engagement with concerns around sensing the subterranean. The  
48 first part explores how these spaces that are often inaccessible to humans are visualised through  
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3 sets of imaginary and technological practices that go to work below the surface. Whilst the  
4 second section turns to reflect on how the story of Ferdinanda foregrounds the need to sense  
5 the dynamism of often, but not always, large scale, geophysical forces that are so often intrinsic  
6 to subterranean spaces.  
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11 *Subterranean optics – A Geologic Vision*

12 The rich visual culture of Ferdinanda ranges from on-the-spot drawings made by the crews of  
13 passing ships, to richly coloured engravings celebrating the island's violent birth for a fascinated  
14 European population (figure 2, centre). Images of Ferdinanda graced publications from The  
15 Times (in London and Malta) to the cover of the Edinburgh Philosophical Society journal, they  
16 were used in lectures and papers of the British Royal Geological and Geographical Societies, the  
17 Royal Society of London (figure 2, far right) as well as in Charles Lyell's Principles of Geology  
18 (figure 3 below), one of the most influential geology books of the era.<sup>59</sup> That Ferdinanda  
19 attracted such a rich visual culture is testament to the interest this rare event drew, but also to the  
20 19<sup>th</sup> century flourishing of a visual language of Geology.<sup>60</sup> Geology during this era was practiced  
21 'primarily as a science of spacial [sic] relations which had found its voice in a visual language of  
22 sections, views and maps.'<sup>61</sup> No longer a supplement to verbal description, images were  
23 conceptual and theoretical devices, part of thinking as well as of communication, serving not  
24 only science but also geopolitical concerns.<sup>62</sup> Thus maps, diagrams, pictures and charts of actual  
25 or potential mineral deposits 'geologised' space, producing an ordering of nature that enabled its  
26 subterranean expressions to become politically rationalised, just as its surface expressions had.<sup>63</sup>  
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39 At first glance Halperin's work mobilises the main modalities of 19<sup>th</sup> century geology's visual  
40 culture. At the core of *Emerging Landmass* sit seven etchings, each given one of the island's seven  
41 names (figure 2, left). Numbered plates one to seven each 'view' pictures a different side of the  
42 island, a different form and perspective. They are, the artist's statement notes, partial reflections  
43 of 'real incidents' partly the result of her scientific research, and partly the result of intuitive mark  
44 making.<sup>64</sup> These particular marks were made by a hard-ground etching process in which a metal  
45 point marks through a ground onto a metal surface which is then etched with acid to form a  
46 printing plate. This is a mark making practice that played a key role in the increasing popularity  
47 and availability of illustrations in geology and other publications at the time of Ferdinanda's  
48 appearance.<sup>65</sup> Alongside the etchings, *Emerging Landmass* included a case of the last remaining  
49 geological samples of Ferdinanda's 1831 appearance. In this it aped the 19<sup>th</sup> century mania for  
50 the collection and display of samples in the era's increasingly popular national and regional  
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3 geology museums.<sup>66</sup> Despite these similarities between Halperin's work and 19<sup>th</sup> century visual  
4 culture, there are some interesting tensions, tensions I want to outline by way of a comparison  
5 with two sets of images contemporary to the island's emergence.  
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10 Published in December 1831 Bededetto Marzolla's pamphlet 'Descrizione dell Isola  
11 Ferdinanda' reproduces a series of seven plates, based on sketches passed to him by an English  
12 surveyor who visited the island in late October on board the steamship Francesco I (figure 2,  
13 centre).<sup>67</sup> Marzolla, an official of the Naples topographic office, produced a folio of images  
14 bound in marbled covers that combined landscape views of the island with human drama, the  
15 latter very much subservient to a rather dramatically animate natural world. Across the six 'views'  
16 and one map, the island morphs from being a smoking mass, upon which ships land and small  
17 people are seen gingerly navigating plumes of smoke, to increasingly solid terrain, with beaches  
18 and substantial rocky outcrops upon which are perched a series of small flags. The geopolitical  
19 drama remains secondary to the natural phenomenon, not only the smoking island, but also the  
20 increasingly mobile and animated sky and seascapes which fill the picture spaces. A second set of  
21 images produced a few months earlier, in August 7<sup>th</sup> by Captain Irton, were reproduced in Dr  
22 Davy's 'Some Accounts of a New Volcano in the Mediterranean' in the Transactions of the  
23 London Philosophical Society (figure two right).<sup>68</sup> In contrast to Marzolla's images Davy's were  
24 framed more scientifically. The map includes carefully delineated gradient and slope direction, it  
25 has a scale as well as detailed latitude and longitude coordinates, spot heights and some tentative  
26 mapping of the localised sea bed. The four images of the island focus on its surface morphology.  
27 Carefully detailing the outline form and a sense of gradient, they are annotated with the direction  
28 of the view, the compass bearing and the distance at which the drawing was made. As such these  
29 images sit within the genre of maritime sketching, in which many sailors were trained, and that in  
30 the words of the British Admiralty provided a 'more accurate account than can be created by  
31 words alone'.<sup>69</sup>  
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47 Whilst neither series appears to have much to do with the subterranean, such 'views' were a  
48 crucial part of the era's visual language of geology. As Rudwick's famous geological history  
49 makes clear, 'by the 1820 the geological use of accurate landscapes had become commonplace in  
50 the Transactions of the Geological Society, and there was nothing to match this publication  
51 elsewhere, in ether the quantity, quality or effectiveness of landscape as a means of visual  
52 communication'.<sup>70</sup> The realistic character of such 'documentary' landscapes appealed to geology's  
53 empiricist ideals, enabling claims to be made about accuracy and the revelation of geological  
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3 features to those at a distance.<sup>71</sup> Such accuracy claims ensured these images a role in the  
4 intersections of geology and colonial power. Detailing the role of geologic mapping and  
5 surveying, including the vertical cross-section, in the vertical expansion of the Canadian State  
6 Braun draws on Foucault to bring practices of political rationality into contact with ‘territory  
7 with its qualities’.<sup>72</sup> Explicating shifts in what counted as territory and crafting accounts of  
8 governmentality that rest on a bringing into view subterranean space Braun outlines how ‘seeing  
9 geologically’<sup>73</sup> was crucial to the legibility of colonial territories. Geology did not simply exist ‘in’  
10 a given territory, rather, ‘as a set of rules governing what was visible in nature, geologic  
11 diagramming held the possibilities to bring a ‘territory’ into being, and thus opening a space-  
12 simultaneously epistemological and geographical- that could be incorporated into forms of  
13 political rationality’.<sup>74</sup>  
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22 Halperin’s work enfolds these histories of geology’s visual culture, whilst also extending them. If  
23 her images appear to confirm to the view pictures of the era – with their careful rendering of the  
24 surface and visual outlines, and even in their sequential form – they also resist such readings.  
25 Each of Halperin’s images produces a landmass marooned in the midst of white paper. The sea  
26 and sky of the earlier ‘view’ pictures is missing, as is any sense of the beach. Instead a rocky mass  
27 looms out of each white page, the geologic equivalent to a Linnaean taxonomic specimen, a  
28 status echoed in Lyell’s reduction of the island’s multiple namings to the naming of any other  
29 form of scientific specimen. Writing of her etchings, Halperin delineates her drawings as  
30 ‘attempting to describe the perpetual formation and erosion of a new landmass’, describing as  
31 she does what we might consider to be an experiment with an optics for dynamic terrain.<sup>75</sup> These  
32 images challenge the matter of factness of colonial terrain that is awaiting knowing and  
33 conquering, instead they offer a trace of terrain resisting territorialisation and open up the  
34 possibility of a subterranean optics that makes space for dynamism.  
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#### 47 *Subterranean Aesthetics – Sensing Dynamisms*

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50 *Though it is now some years since this subterranean wonder appeared... no words of mine can ever do justice to*  
51 *the wondrous grandeur of the sight... never shall I forget the sublime sight! In the soft and warm grey light of a*  
52 *Mediterranean morning, and from the bottom of a perfectly unruffled ocean, the new volcano was exhibiting its*  
53 *mighty operations. From the crater, which appeared in the form of a cone, jagged at the top, a fleecy vapour rose in*  
54 *a globular clouds which, expanding themselves majestically, assumed in their ascent the form of a towering plume.*  
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3 *Large stones, carrying with them a quantity of black dust, were thrown up and as they rose and fell, broke into a*  
4 *thousand curious shapes; and the effect of this through the white vapour was magically beautiful....A volcano*  
5 *must always be an object of awe and admiration, but suddenly emerging from the sea, at the depth of 170 fathoms,*  
6 *this was indeed a sight never to be forgotten by those who had the good fortune to witness it...(FM, a 'Lady'*  
7 *traveller in Sharpe's London Magazine, 1840).<sup>76</sup>*

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16 Figure 3: 'An Imaginary Reconstruction of Graham Island's Cone' (Lyell, 1834, Principles of  
17 Geology Vol II, note 2).

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21 Ferdinandea's geopolitical status should not be considered aside from reflecting on its role as a  
22 geological flashpoint, enrolled within the evolution of some of the era's most cutting edge  
23 theorisations of the earth and subsequently featuring in a series of influential books, including  
24 Lyell's *Principles of Geology*, Humboldt's *Cosmos* and Reclus's *The Earth: A Descriptive History*.<sup>77</sup>  
25 Some 80 years after the Lisbon earthquake radically ungrounded understandings of the human  
26 subject, Ferdinandea's rapid emergence and disappearance furthered the cause of those  
27 understandings of geologic spaces and times that supplanted biblical stories of Creation and the  
28 Flood with accounts of a dynamic earth system that predated and would in all likelihood outlast  
29 humans.  
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37 Ferdinandea, or Graham island, or l'isle Julia (depending on where your national geological  
38 loyalties lay) erupted into the midst of long running debates about the nature of geologic forces  
39 and the formation of mountains and volcanoes. This included the controversial 'craters of  
40 elevation theory' which held that volcanoes were formed by the cataclysmic upheaval of  
41 underlying rock strata, as opposed to the alterative, more gradualist view that volcanic cones are  
42 created by the accumulation of ejected material around the vent.<sup>78</sup> Turning eagerly to evidence  
43 from the island, Charles Lyell, French Geologist Constant Prévost, Von Buch and others, found  
44 in Ferdinandea a living laboratory enabling them to combine field visits with the examination of  
45 specimens, the analysis of eyewitness accounts, and reflections on rock structure. Prévost,  
46 accompanied by an artist, combined his geological observations with a French claim to the  
47 island, naming it Julia, after the month of its birth. After revisiting key European volcanoes he  
48 concluded that due to a lack of 'a band of raised rocks which would be the edge of the elevation  
49 crater',<sup>79</sup> there was no evidence for the upheaval of subterranean strata and rather l'isle Julia was  
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3 created through elevation.<sup>80</sup> Debate continued to rage however, and the island became a key  
4 example, that while not settling any controversies did help shift directions of thought at a key  
5 juncture in geology's history.<sup>81</sup>  
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10 Why does this matter? Beyond the broadest scope of the story of this ephemeral island and its  
11 intersection of geologic and geopolitical struggles, what does this offer to geopolitics? In  
12 discussions that urge us to take account of the earth, we are required to do more than simply  
13 extend the conventional concerns of geopolitics 'upwards towards the atmosphere or  
14 downwards into the depths of the oceans and crust, rather we are required to bring into politics  
15 an intensive engagement with the planet's own dynamics; its processes of sedimentation and  
16 mobilisation, its layering and folding, its periodicities and singularities'.<sup>82</sup> More specifically we are  
17 pressed towards a rejection of geology in favour of geophysics.<sup>83</sup> Steinburg and Peters locate  
18 their rejection of the fixity of a science of strata (geology) in the need to account for incessant  
19 movement and transformation.<sup>84</sup> What is sought is a fulsome engagement with dynamism, not  
20 least when a recovery of terrain does not just require an acknowledgment of subterranean  
21 volumes and the facts of their geomorphology, but rather an appreciation that these are dynamic  
22 and mobile spaces. Returning to Ferdinanda's story, any subterranean aesthetics evolved here  
23 has to engage with the qualities of the island's dynamism and materiality. Further, given the  
24 relative (for geology and geophysics) rapidity of the processes, we are directed to consider the  
25 scale at which fixity and stability are challenged through earth system processes that might be  
26 cyclical, or gradual, sudden and/or catastrophic.  
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31 What does this intersection of the geophysical and the geopolitical mean for our subterranean  
32 aesthetics? Primarily it suggests that it too must account for the dynamism of the geophysical,  
33 rather than merely picture static subsurface spaces, and furthermore, that the scales of such  
34 dynamism across time and space should be carefully considered. 1830's, that era in which deep  
35 time and a dynamic earth were coming into popular consciousness perhaps unsurprisingly was  
36 evolving a series of visual forms that could take account of these developments – principally the  
37 vertical cross-section. As Rudwick notes, 'a modern geological section is a highly theoretical  
38 construct. It is a kind of thought experiment, in which a tract of country is imagined as it would  
39 appear if it were sliced vertically along some particular traverse of the topography, and opened  
40 along that slice in a kind of cutting'.<sup>85</sup> Figure three above, an imaginative reconstruction of the  
41 cone of Graham Island, is a plate from the 1833 edition of Charles Lyell's *Principles of Geology*,  
42 a key text heralded as 'creating a new science of geologic dynamics'.<sup>86</sup> Central to this dynamics  
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was ‘using what people could observe around them to penetrate the unseen and invisible world of the deep past’.<sup>87</sup> Lyell produced a series of theoretical cross-sections which he titled an ‘imaginary restoration of Graham island’s cone’.<sup>88</sup> In the series of images he produced he introduced a mistake around the direction of the bedding planes in relation to the vent. Despite this, his diagrams have become valued by historians less as empirically accurate and rather as exploratory, as part of a theoretical attempt to understand dynamic processes rather than simply to represent them.

<insert figure 4>

Figure 4: *Physical Geology (new landmass/fast time)*, 2009 and *Physical Geology (geothermal)*, 2011, Ilana Halperin.

How to account for the forces of the non-human world? geologic or otherwise, has become a popular question across the arts. While *Emerging Landmass (A Chronicle of Disappearance)*, folds geophysical dynamism within its title and its series of drawn forms, Halperin, like other artists, does not restrict herself to human-made tools to explore Geophysical processes, rather she has also conducted a series of experiments that use geophysical processes themselves as a means to sensitise us to their dynamism and materiality. Perhaps the clearest example of such collaboration with the geophysical would be her two films *Physical Geology (new landmass/fast time)*, 2009 and *Physical Geology (geothermal)*, 2011 (figure four). Presented as a diptych (a pair) the two super 8 films, focus on dynamic subterranean processes and materialities that can be captured in the space of their 3 min 45 sec span. *New landmass/fast time*, the film on the left follows a boat as it arcs around lava streams pouring into the ocean off Hawaii, clouds of steam and waves often obscure vision, but as the boat circles we witness the birth of new territory as the lava emerges and hardens, joining already deposited layers. *Geothermal*, takes us on a skidoo ride across frozen Icelandic landscape to a geothermal power station where Halperin has suspended wooden frameworks within the geothermal pools, collaboratively producing sculptures through mineral deposition.

*How may such revolutions [of the Earth] (including, certainly, many ancient organic beings no longer alive on the surface of the Earth) preceded the existence of man, and how many... are still in prospect, is hidden from our enquiring gaze (Kant, 1993, 66-7 [1799]).<sup>89</sup>*

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3 *Boiled milk in a 100°C Sulphur spring in the crater of an active volcano; stood with a friend on both sides of the*  
4 *Mid-Atlantic Ridge; talked with geologists inside a lava tube inhabited by life-affirming bacteria; formed*  
5 *sculptures in caves and hot springs; spent time with geology collections formed inside the body; and held the Allende*  
6 *Meteorite, the oldest known object in the solar system, between my two hands. Corporeal mineralogy. We are*  
7 *autobiographical trace fossils.*<sup>90</sup> (Halperin, Physical Geology, 2015)  
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Contrary to the temporal and spatial scales of the Ferdinanda story, our geological and geophysical stories of Earth have tended to be those of a planet ‘so slow moving it could just about be ignored give or take an occasional inopportune shudder.’<sup>91</sup> Indeed, the wider geologic turn within arts and social sciences, prompted in good part by the Anthropocene’s situation of humans as a geologic force, is premised on a geological imagination that scales space-times beyond the perceptible or sensible regimes of human senses and life spans. As Nigel Clark and Kathryn Yusoff observed ‘if the question of what to do about imminent or actually occurring shifts in the operating state of the earth are not already at the top of global agendas, this is mostly likely because their complexity and scale vastly exceed existing political repertoires and imaginaries.’<sup>92</sup> New forms of *geopolitics* might reflect therefore on rescaling geologies to make space for the temporalities of living bodies, human and non-human.

Ferdinanda offers one such chance to re-scale accounts of the ‘geo’, to resituate the sensing of the geological and geophysical within human scales of space and time. Interestingly, accounts of encounters with Ferdinanda - from scientific to travelogues - are often highly sensory, offering us geophysical engagements writ over and through bodies. If the scientists tended toward more controlled notes of the smells of gasses and the heat of rocks and falling ash, Ferdinanda offered others the chance to exercise that Romantic imaginary of the sublime. Indeed, as the lady traveler writes in the account which opens this section, ‘no words of mine can ever do justice to the wondrous grandeur of the sight...never shall I forget the sublime sight.’<sup>93</sup> This was a sublime premised on human responses to an awe-inspiring natural world full of terrifying forces of immensity and turbulence.<sup>94</sup> Moreover, whilst vision remains central to these accounts, it is important to note the role of other senses in enabling us to think and feel volumes, and in allowing us to reflect on the scales at which we do so.

It is no surprise that Halperin was attracted to Ferdinanda, for a re-scaling and re-sensing of geology sits at the heart of her concerns with the geologic. As she asks us her audiences, how to explore the imbrication of the geologic and the everyday, how to explore corporeal contact with

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3 geologic time? Her *An Anecdotal History of Volcanoes* details numerous corporeal-geologic  
4 connections. She recounts the tale of Frank Perret an ‘early volcanologist, [who] had a habit of  
5 monitoring the seismic activity of Mount Vesuvius through clamping his teeth around the metal  
6 bedposts in his room, which were embedded in cement on the slopes of the volcano’. She also  
7 details how Pliny the Elder, before perishing in 79AD while observing an eruption of Vesuvius,  
8 tied pillows to his head with napkins as protection against pumice stones. She translates these ad  
9 hoc and body scale forms of protection and sensory devices into her own performance work  
10 when she boils milk over a geothermal heat source, or when she twins herself with a volcano  
11 born the same year she was, making birthday pilgrimages to it, or when she seeks ‘body stones’,  
12 corporeal geologies formed from mineralogical accretions in the human body. In all these works  
13 we find Halperin rescaling geology, reframing what is often understood in terms of vast scales of  
14 space and time in terms of human sensory capacities and life spans.

24 To make sense of how art enables us to register the invisible forces of the earth on the human  
25 body we might turn to the geoaesthetics of Elizabeth Grosz.<sup>95</sup> Rather than understand art as a  
26 distribution of sensible, or in relation to the visible, as has been important up until now, Grosz  
27 characterises art as temporary acts of framing, of intensification, that transform natural processes  
28 and forces – insensible forces prior to sensations – into sensations such that, for our purposes  
29 here, humans can engage them, but for others this might be about non-human engagement. As  
30 Yusoff notes, ‘art is neither a cultural achievement, nor a defining characteristic of hominids, but  
31 is the opening up of material and immaterial forces of the universe to elaboration and  
32 experimentation. In this way art taps into the substrate of the earth, its geography and its time, to  
33 unearth and repurposes its forces’.<sup>96</sup> Through this lense, we might understand Halperin’s more  
34 performative work as providing experiences that temporarily compose earthly forces for us, such  
35 that insensible forces, forces too big to experience close to hand or too long term to engage with  
36 in a human life span, are rendered sensible. Further, Grosz poses a set of ideas that unsettles the  
37 relationship between rendering visible and legible, and rendering controllable that has long sat at  
38 the heart of relations between geopolitics and the visible. For Grosz’s frames of art are only ever  
39 temporary intensifications and compositions, temporary visualisation of earthy forces, and such  
40 temporariness might not so easily lend itself to the establishment of human mastery.

55 **Conclusion: Towards a geopolitical aesthetics of the subterranean**



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3 This paper has experimented with the telling of one geophysical story – of the volcanic Island  
4 Ferdinandea – through the lens of its multiple inscriptions, in art work, in travelogues, in  
5 geopolitical documents and in key scientific texts. In doing so the paper has sought to elaborate  
6 on a geopolitical aesthetics of the subterranean that acknowledges the link made between  
7 knowing/sensing a space and the geopolitical control of it. It has done so through four key  
8 arguments. Firstly, it has sought to demonstrate through a re-composition of elements of the  
9 Ferdinandea story that engaging with the subterranean demands accounts of the ‘geo’ that  
10 unsettle and unground political rationalisations including those western European  
11 conceptualisations of territory that have long been based on stable cartographic imaginations. To  
12 take account of the subterranean requires us to appreciate the instability of the terrain upon  
13 which territory is determined, and to appreciate the temporal and spatial scales across which  
14 such instability might occur. In the context of this story too, it demands that we appreciate the  
15 unstable nature of terrestrial and aquatic environments and their interactions, such that to pre-  
16 sort these environments, to distinguish in a finite and singular way between surface and  
17 subsurface, between marine and terrestrial is unhelpful. In other words, if the forces of nature as  
18 expressed in the Lisbon earthquake unsettled understandings of the human subject and its  
19 domination over nature, then telling the story of Ferdinandea ungrounds those geopolitical  
20 concepts understood in similar terms and demands that we rethink the equation often made,  
21 especially with respect to the subterranean, between knowing and control. This is an approach  
22 that should, of course, be careful not to tip over into environmental determinism, but rather  
23 should consider geophysical forces as but one part of an ongoing production of geopolitical  
24 stages composed of the human and non-human.  
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40 Secondly, exploring the visual cultures of Ferdinandea emphasises that the subterranean is a  
41 space that is not always visible, but also that it is a space of dynamic and material ‘geos’. Refusing  
42 the logics and often the technologies of two dimensional cartographic precision, the  
43 subterranean has long demanded from those seeking geopolitical control the evolution of modes  
44 of sensing that enable us to penetrate (whether realistically or in imagined ways) the inner  
45 architectures of the earth. More than this however, such optics are challenged as we come to  
46 understand the subterranean not just as a volume to be made visible, but one that is  
47 characterised by challenges of dynamism and scale. What is needed is a mode of sensing that can  
48 account for, without stalling, the dynamic forces of the subterranean, but also a mode of sensing  
49 that can create an intimate geopolitics rendered less in terms of bodies and states than in terms  
50 of bodies and geologies.  
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5 Thirdly, the stories of Ferdinanda and the purchase it offers us on the subterranean and its  
6 sensing offers a site from which to gain purchase on wider geopolitical concerns with the  
7 complexities of terrain and territory and the intersections of the political and geophysical around  
8 notions of geopower. The possibilities offered by Grosz's thinking of geoaesthetics were  
9 engaged towards the close of the paper. This was not the place to expand this work, not least  
10 because her theorisations were not adequate to the effects of the other visualisations discussed in  
11 this paper, but there might be much of value in further experimenting with Grosz's feminist  
12 geoaesthetics, and what they might offer geopolitics' desires to engage with the geo as a forceful  
13 animate space.  
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21 Fourthly, the paper has evolved a geopolitical aesthetics. The understandings of aesthetics at  
22 work here in a sense build on Ingram's call that Geopolitics think more carefully about  
23 aesthetics.<sup>97</sup> But whereas Ingram pursues this through a focus on art work and two particular  
24 aesthetic theorists, another tack is needed here. Indeed, the very nature of the story told directs  
25 us to the need to understand and appreciate the role of aesthetics in knowing, and controlling  
26 the subterranean (an important part of modern and contemporary statecraft), but also to the  
27 need to value aesthetic's possibilities for opening out ideas of territory, terrain and the Geo as  
28 part of contemporary Geopolitics as a Geographical subdiscipline. The expanded sense of  
29 aesthetics at work here acts to unground definitions or theorisations of aesthetics that might seek  
30 a singular and fixed sense of aesthetics. This directs us towards a sense of a relationship between  
31 geopolitics and aesthetics that needs, as Ingram argues, a more detailed understanding of  
32 aesthetics, but one that is perhaps careful not to become too closely confined to singular  
33 understandings of how we might theorise aesthetics, and what it is that such theorisations might  
34 do.  
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45 To close I want to offer some final thoughts on sensing subterranean spaces. If the two  
46 dimensional cartographic imagination has been premised on seeing, then what happens when we  
47 ask what might it mean to know volumes, such as subterranean spaces, in ways that complicate  
48 practices of visualisation? This might mean to acknowledge the limitations of visualisation  
49 practices, or to understand them as practices only ever informed by the multisensory (e.g many  
50 visualisations of the sea bed are actually formed through data produced by practices of sounding)  
51 but also as practices wherein human and even technological visual capacities are challenged by  
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the materialities and dynamics of the volume? What emerges is a need for more multisensory ways of knowing to both understand and mobilise volumetric practices of power.

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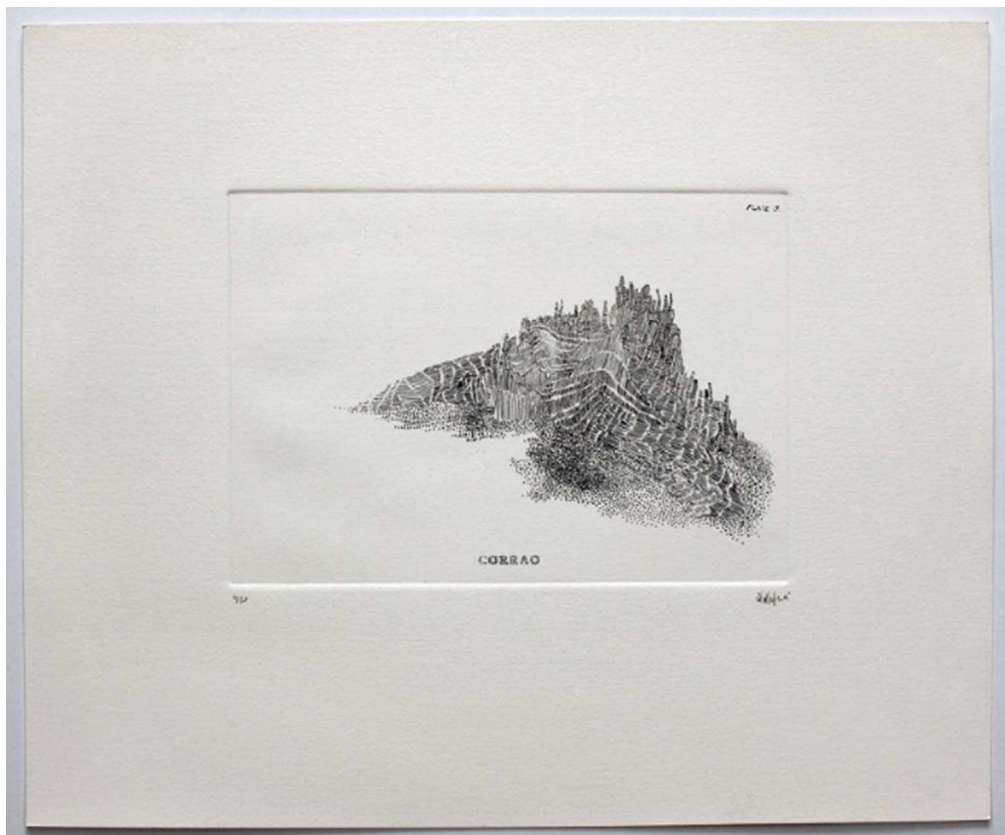


Figure One –Etching from Emergent Landmass (Chronicle of Disappearance), Ilana Halperin (2006)

229x191mm (72 x 72 DPI)

Only



Figure 2: Left- one of the Halperin's seven etchings; Middle- Marzollo, see note 57, Right- Davy, see note 59.

460x105mm (72 x 72 DPI)

Peer Review Only



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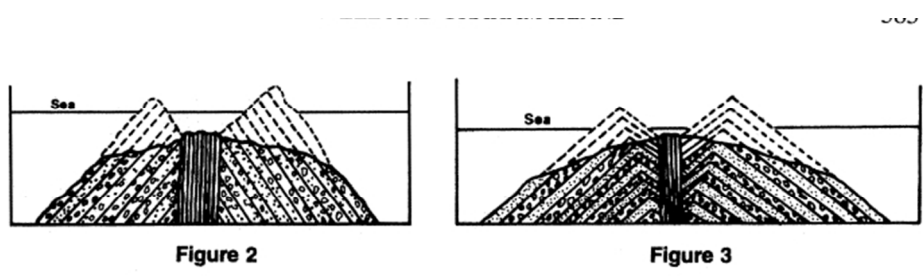


Figure 3: 'An Imaginary Reconstruction of Graham Island's Cone' (Lyell, 1834, Principles of Geology Vol II, note 2).

262x70mm (72 x 72 DPI)

Peer Review Only



Figure 4: Physical Geology (new landmass/fast time), 2009 and Physical Geology (geothermal), 2011, Ilana Halperin.

479x179mm (72 x 72 DPI)

er Review Only