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I Map Therefore I Am Modern

Cartography and global modernity in the visual arts

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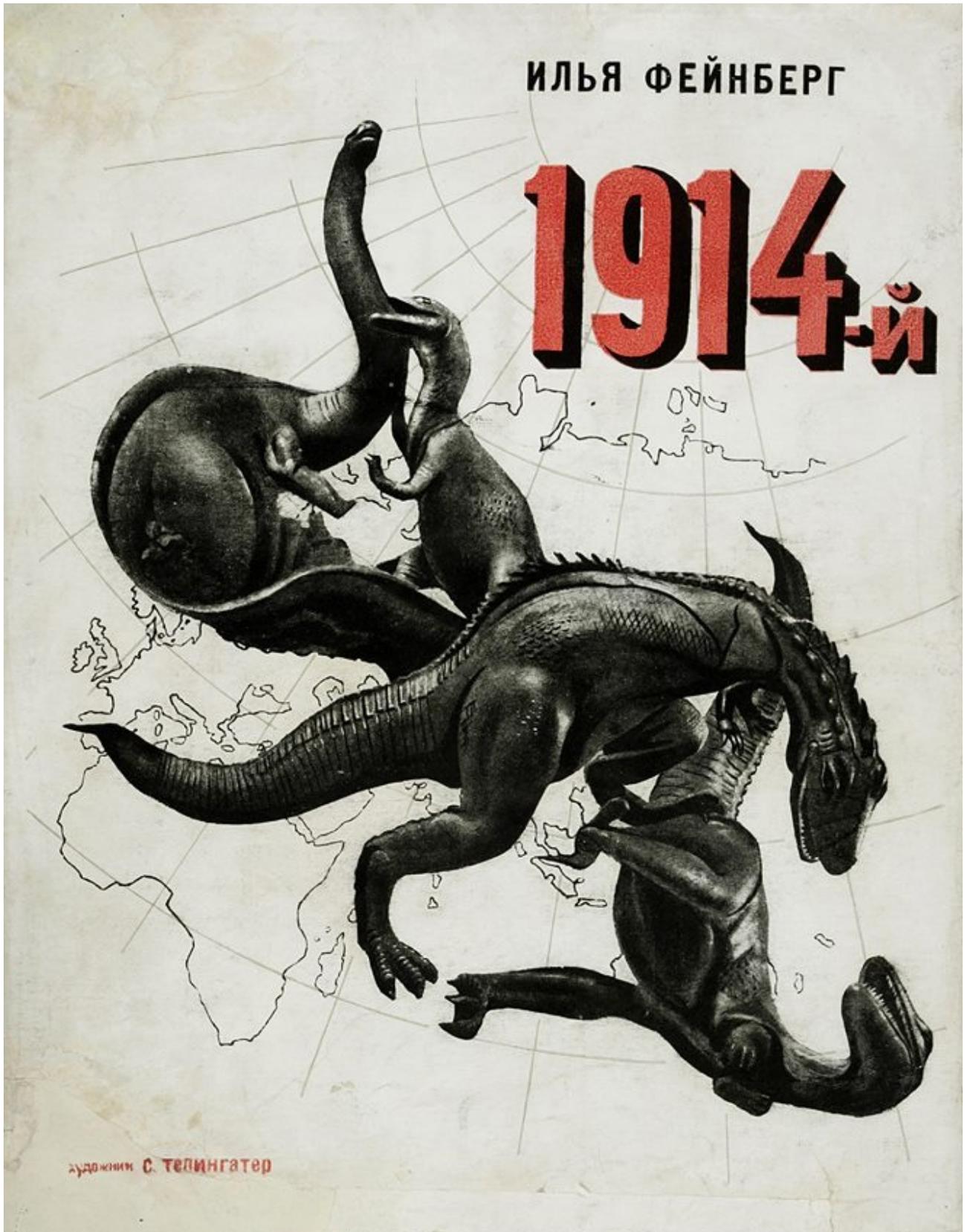


Figure 0.1. Solomon Benediktovic Telingater, dust cover design for Ilya Feinberg's *The Year 1914*, ink on paper, 25 x 18 cm, 1934.

Introduction

In 1934 the Soviet illustrator Solomon Benediktovic Telingater (1903-1969) produced a graphic design for the cover of a short historical book, *The Year 1914*, in which the scholar Ilya Feinberg describes the beginnings of the First World War. It shows four dinosaurs, struggling to subdue one another in battling pairs (**figure 0.1**). The furthest reptile is having its long neck torn by a stouter foe. Closer to the viewer, the largest and most muscular of the dinosaurs, its back lined with crenelated scales, presses an opponent to the ground. Though toppled vulnerably onto one side, the victim stares back up at its attacker defiantly, baring pointed teeth. It is less the scene of battling monsters in itself that interests me in opening this study, though, than the space across which their struggle plays out. Behind the tangle of teeth and flailing tails, Telingater lays out the pale backdrop of a world map, centred on Asia. The map is synecdochal: so ubiquitous were cartographic images of the earth, in 1930s Soviet culture as today, that only finely sketched coastlines are required to signify a global geography. Admittedly, the continental outline tapers off towards Kamchatka, and the Americas are absent entirely. Yet the faint graticular geometry laid out over the terrestrial surface, while serving no actual function of cartographic projection, implies the continued curvature of a global earth.

This study is devoted to artistic experiments with cartography. As one such experiment, Telingater's now obscure book cover, I argue, juxtaposes and attempts to distil the essential characteristics of two spatialities that have dominated modern history. On one side is globalism, manifested here in the world geography and segment of global graticule. As I discuss at length in the first chapter of this study, in Soviet visual culture images of the globe and world maps like this triggered strong associations with scientific universality and political solidarity across labouring humanity. On the other side are nationalism and the state. Considered in relation to the unbordered



Figure 0.2. Joyce Kozloff, *Boys Art #18: Mombasa*, collaged found print/pencil on paper, 30.5 x 46 cm, 2002.

world map extending out behind them, not to mention the ominous significance of the year 1914 emblazoned in red above, it becomes clear that the battling reptiles are metaphors for the nations fighting the First World War and their attendant colonies. Cast as isolated predators against the universality and modernity of global space, here nation states incarnate ancient, indeed prehistorical impulses to enmity and division (despite three of the four dinosaurs belonging to a common species). Telingater's presentation, clearly, is loaded to the ideological advantage of socialist internationalism. Not only is the received geography of discrete nation states envisioned as a field of territorial contest between violent, irrational and pitiless monsters, bitterer still is how their pyrrhic struggle has no greater purpose than that of internally dividing humanity, stifling the promise of the unified political geography imagined behind them.

The second image, which I would like to consider alongside the Telingater, is a collage of various print media titled *Mombasa* (**figure 0.2**). It was made in the United States in 2002 by the feminist collagist and ceramicist Joyce Kozloff (b.1942). Like Telingater's cover, it shows indiscriminate conflict, Kozloff having assembled a motley collection of combatants clipped from historical books,

comics and anthropological map insets. There are conquistadors, frontier musketeers, Napoleonic cavalymen and modern gunners, not to mention racist depictions of Arabs wielding machine pistols and pitch black spearmen with leopardskin shields and sometimes fezzes. Also like Telingater's cover, the background across which the conflagration takes place is cartographic. Copied from "Island and Ports of Mombas", a map made by the British navy in 1894, it shows the Kenyan city of Mombasa one decade after it came under the control of the British East Africa Company. Mombasa was occupied successively by the Portuguese, Omani and British empires; its sheltered harbours, nestled midway along the east African coast, made for a strategic node in the imperial network. Despite the provenance of the underlying cartography, though, the various conflicts unfolding across it cannot be referred back to a specific battle in the city's fraught colonial past. The diverse and often anachronistic combatants depicted here, few of whom share a graphic style, let alone a common history, rather embody a transhistorical bellicose impulse, of which this colonial occupation, or that historical siege, are but local manifestations.

Ostensibly, the two images have much in common. Both foreground global interconnectedness and intergroup violence, and both posit maps as an encompassing backdrop. With regard to how they imagine the political significance of cartography in modern history, however, my two examples make an incongruous pair. The pristine world map depicted by Telingater holds out the image of a politically united global modernity awaiting release from nationalist enmity. At least in the cartographic theory of the time, the geometry fanned over the earth favours no one locale, signalling the promise of rational cooperation across received borders (see Baron 2013). In selecting a flagrantly colonial map for *Mombasa*, by contrast, Kozloff implicates cartography directly in the events staged across its surface. In this work, as in her cartographic experiments more generally, Kozloff stresses the links between mapping and militarism (see Earenfight 2008): more than just an appropriate backdrop to imperial violence, here cartography constitutes a key medium through which wars are waged and empires established. In addition to this, Kozloff emphasises cartography's gender politics. *Mombasa* is the eighteenth artwork in a wider series named *Boy's Art*. Each collage presents a colonial or otherwise military map with disparate soldiers running amok, some drawn by Kozloff's young son, the others sourced from all manner of historical books and children's comics. In *Boy's Art*, then, cartography is presented as an imperialist and masculinist visuality, constructed by patriarchal institutions to better subdue foreign foes, and in so doing

concentrating a much broader masculine will to violence.¹ The apparent levity with which Kozloff draws together colonialism and cartography, masculinity and militarism into these carnivalesque cartographies only underlines the actual historical violence sublimated in her cartoon warriors.

Yet if *Mombasa* insists on cartography's patriarchal dimensions, to which Telingater's optimistic projection of an unbordered world geography seems oblivious, there are also ways in which the Soviet book cover complicates Kozloff's collage. Whereas *Mombasa* essentialises the will to synoptic control and violence it perceives in cartography, positing a universal masculine drive expressed as much in her son's drawings as in imperial maps and prehistoric warriors, Telingater offers a more differentiated perspective on mapmaking. In two gestures, his cover undermines the intrinsic or universal quality Kozloff ascribes to mapping's masculinism and militarism. Firstly, staging the scene under the scarlet numerals 1914 makes it impossible to generalise wildly from the image. The year localises the represented scene, making it stand for the crisis of a specific global dispensation, not an abstract drive to cartographic domination. Secondly, in the Telingater image warfare is enacted only on the cartography's surface. In contrast to the specifically imperialist map chosen by Kozloff, it has no inherent connection with the depicted struggle. Here violence and coercion are epiphenomenal to the cartography behind, holding out the possibility of a mapping practice from which domination has been expunged. Indeed, the metaphor of dinosaurs implies the coming extinction of international and class strife, clearing the way for the world map to show forth as the symbol of a united, rationally-established global modernity. True, these gestures might seem to let cartography off the hook by exorcising its political dimensions. Considered as a pair, however, Telingater's and Kozloff's images qualify one another's shortcomings. *Mombasa* keeps attention locked on cartography's imbrication with coercive politics in the combined form of militarism, masculinism and empire, while Telingater's design remains alive to alternative, even utopian cartographic visions that do not reduce to the imperial beasts writhing over its surface.

★

Though they stem from disparate contexts, I bring these two artworks together in this Introduction, firstly, to exemplify the kinds of map-based visual arts practice that constitute the subject matter of

¹ On the dominative propensities of the "vertical angle", see Kress and van Leeuwen 2006, 140-148, following Rose 2016, 70. On the masculinism of this perspective, see Nash 1996.

this study. Telingater and Kozloff are but two among a multitude of visual artists who, over the course of the last century, have looked to cartography for their work's formal and thematic substance. From embroiderers through videographers to walking performers, artists of all stamps have become entranced by the entwinements of truth and artifice, beauty and power, fantasy and functionality perceived in mapmaking. No pair of images, I recognise, could hope to stand in for such diversity. I offer my initial examples, then, as narrow but vivid openings onto the remarkably large and various field of artistic production concerned with mapping. I shall refer to this field as "map art".² Alternative designations exist in the literature. Wytan Curnow refers to "map-based art" (2002, 255), Ruth Watson to "artistic mapping practices" (2009, 297) and Katherine Harmon to "map-enthused" art, which grasps the excitement often surrounding the experiments in question (2009, 10). More than each of these other possibilities, though, the paratactic posing together of two classifications, two fields of practice and two histories as "map art" is valuably blank and open-ended. It provides an elastic descriptor through which I shall conjugate the relationship between mapping and art in several different ways.

Much of map art's fascination, I would suggest, lies in how it challenges the seeming self-evidence of "space" as it is perceived, represented and inhabited. This capacity to estrange taken-for-granted constructions of space has become especially urgent in recent decades: reflecting on the near-ubiquity of locative media in many parts of the world, Nigel Thrift has argued that digital mapping now structures the precognitive background to everyday practice, forming a new "technological unconscious" (2004). Yet desensitising viewers to prevailing cartographic discourses is only a stepping stone onto the diversity of artistic interventions in mapping. Perhaps the major focus of critical attention in writing on the field is how map artists "reject the authority claimed by normative maps uniquely to portray reality" and thus affirm a rich diversity of mapping practices that cartographic institutions have long delegitimised and occluded (Wood 2006, 10; see also Cosgrove 2005; Hawkins 2013, 37-60; Pinder 1996). Another is how map art provides radical cartographies of the present. Several commentators (Watson 2009, 295; Holmes 2009; O'Rourke 2013, xviii; Toscano and Kinkle 2013, 1-26) have considered whether map art fulfils Fredric Jameson's call for an "aesthetic of cognitive mapping", able to situate otherwise bewildered postmodern subjects amid the overbearing infrastructures and disorienting data flows of global

² To my knowledge, the term "map art" was first used by Denis Wood in a 2006 special issue of *Cartographic Perspectives* dedicated to the topic (see Wood 2006, 5).

capitalism (1991, 54).³ Still another perspective, though, values map art precisely because it subverts any such need for orientation within a mapped totality, often by resituating mapping in an embodied realm of walking and urban practice (see O'Rourke 2013; Pinder 1996 and 2011). These itinerant mappings, as David Pinder puts it, "leave behind fixed or elevated viewpoints in favour of mobile, grounded, and partial perspectives" (2011, 674).

Although my analysis of map art connects with each of these strands of criticism in the following chapters, Telingator's and Kozloff's artworks also serve to intimate the distinctive focus and complexities of my argument in this study. As their depictions of clashing national and global spatialities and cartography's (masculinist and imperialist) will-to-power suggest, my approach to map art foregrounds how mapmaking is tied up with institutions and processes of global modernity. As such, it contrasts sharply with one other existing perspective on the field. Katherine Harmon opens the first of her two edited compilations of map art, *You Are Here: Personal Geographies and Maps of the Imagination*, with the suggestion that "humans have an urge to map - and that this mapping instinct, like our opposable thumbs, is part of what makes us human" (2004, 10). As a "motto" for this grasp of mapping, she redirects René Descartes' ubiquitous statement on subjectivity's basis in thought, "I think therefore I am", such that it reads: "I map therefore I am" (11). Although I will argue against it, Harmon's statement has the value of summing up, with an indelible formula, a widely held view of cartography, which I shall call "humanist" in that it takes mapmaking to be coextensive with - and in Harmon's case definitive of - human culture as such. From this humanist perspective, map art represents the artistic expression and celebration of a shared human mapping impulse: Harmon writes that in surveying the range and idiosyncrasy of map art in her book, she has discovered "my own personal proof of the mapping instinct" (11).

The premise of my own approach to map art can be encapsulated by a second, counter détournement of Descartes, which I have taken as the title for this study: "I map therefore I am modern". In opposition to the universality ascribed to cartography on the humanist account, which, as I argue in the following section, I see as unhistorical, even essentialising, this study rests on the premise that maps, as Richard Helgerson writes, are "the undeniable makers and markers of modernity" (2001, 241). But whereas Helgerson here is referring specifically to the seventeenth century, I want to make clear from the outset that I do not conceive modernity as a closed period,

³ For a discussion of the concept of cognitive mapping, see Tally 2013, 67-74.

typically seen as reaching its apogee in the first half of the twentieth century before being succeeded by an era of globalisation.⁴ For map art, as this study demonstrates, troubles the construction of “modernity” and “globalisation” as discrete periods, revealing how recent transformations remain dependent on a geometrical ontology inherited from modern mapping, and conversely how modernity has always been tendentially global in scope, grounded as it is in universalist worldviews, colonialism and expanding markets. In framing this study, therefore, I borrow Arif Dirlik’s term “global modernity”, which stresses “important transformations in global relations” in recent decades while also acknowledging that modernity “has been globalising all along” (2003, 276).

My reference to global modernity in the singular also requires qualification, for many postcolonial theorists have insisted that the concept of modernity, if indispensable, has been cast erroneously as a singular condition, which, having originated in Europe or the West, has progressively expanded to encompass (and homogenise) societies globally (for just one example of this critique, see Ang 1998, 78). To recognise the specificity of diverse modern contexts, and avoid analysing them through perpetual reference back to parameters set by European modernity, many scholars have taken up Shmuel Eisenstadt’s notion of “multiple modernities” (2000), or Arjen Appadurai’s (1996, 49-50) and Paul Gilroy’s (1993, 1-40) term “alternative modernities”. Nonetheless, this study posits global modernity in the singular. This is not to deny the insight, crystallised in these pluralist interventions, that modernity assumes markedly distinct, even mutually oppositional forms as it takes hold in diverse geographical and cultural contexts. My reasoning rather stems from the theory of combined and uneven development, a Marxist analysis of capitalist modernity stemming primarily from Leon Trotsky that I discuss at length in Chapter Two of this study. It would be reductive, this theory suggests, to choose between a singular and plural conception of modernity. By contrast with the multiple modernities theorist Dilip Parameshwar Gaonkar’s claim that “modernity is not one but many” (2001, 23), combined and uneven development entails an understanding of modernity that is, in Franco Moretti’s words, both “one and unequal” (2000, 55). *One* in that the modern world, as precipitated by and constituted through capitalism’s expansive tendency towards ever greater accumulation and the global articulation of markets, must be understood as an integrated whole (see

⁴ A trenchant statement of this periodisation can be found in Martin Albrow’s book *The Global Age*, which counterposes “the Modern Age” (that “passing historical episode”) against “the Global Age” as two constitutively different periods, the latter negating the former “between 1945 and 1989” (1997, 11 and 96).

Lazarus 2016, 95-96). *Unequal* in that this integration, far from implying homogeneity, is riven by disjuncture, unevenness and diversions. For not only does capitalist modernity play out in diverse ways through various agents, in divergent cultural and geographical contexts and at different moments of history. It also actively produces inequality and difference, whether by extracting resources and labour from some regions (and classes) to invest it in others, separating sites of production from consumer cultures or politically dividing labouring classes along ethnic or national lines (see Harvey 2006, 71-114).⁵

Critical scholarship on mapmaking shows how maps, once established by newly centralised modern states in Japan, China and parts of Europe in the sixteenth and seventeenth centuries (see Wood 2010, 27-33; Biggs 1999), have proven integral to each of the mutually entailing institutions and phenomena that, together, comprise global modernity. Integral, that is, to colonialism in facilitating the global movement of armies and settlers, informing military conquest, displacing preexisting epistemologies and administering dependencies (see Appadurai 1996, 121-126; Arias and Mélenlez 2002; Jazeel 2014); to capitalist globalisation in enhancing the mobility of commodities, synchronising world markets and generalising cadastral surveys (Brotton 2004; Domosh 2013); to secularisation in replacing received religious worldviews with empirical measurement and mathematical projection (see Woodward 1991, 84-85; Sloterdijk 2014, 765-818); to the experience of “time-space compression” in conditioning encounters with distant geographies - whether in representation or directly through aiding global mobility (see Massey 1991; Warf 2008, 40-77); and to urban transformation and bureaucratic administration in enabling the synoptic spatial planning of previously haphazard cities (see Scott 1998, 103-146). Recognising cartography’s role in the articulation of global modernity indicates how map art is uniquely placed to explore themes relating to each of these phenomena, and raises a number of questions pursued throughout this study. How have map artists grasped the underlying geographical imaginations, as well as the internal disjunctures, that shape global modernity? How have they sought to interrupt, trouble and reimagine modern constructions of space? Are artistic mapping practices bound to recapitulate the distanced and calculative ontology of modern cartography? Should map art be seen as coextensive

⁵ The Warwick Research Collective (WReC) provides an excellent overview of how the concept of a “combined and uneven” modernity fulfils two imperatives: that of thinking capitalist modernity holistically, as an interlocking globality whose parts cannot be understood without reference to the greater structure, while simultaneously stressing the diversity of its regional incarnations and internal contradictions, the disparate social and political formations that arise in response to it and the inequality inherent to capitalist development (2015, 10-15).

with, or distinct from, the broader diversification of mapping practices consequent on digitisation? And what does map art add to existing theories of maps and modernity in critical cartography and spatial theory?

In addressing these problematics, this study makes the claim that map art plays out, and puts to the test, some of the central figures, myths and narratives through which global modernity has been imagined and theorised. This formulation of my argument is deliberately equivocal. For this study is concerned to emphasise how map art, at its most probing, neither simply illustrates nor wholly subverts received understandings of global modernity, but rather complicates and reworks them through concentrated formal experiment. Often map artworks seem to recapitulate the narratives of rupture (spatial as well as temporal) through which global modernity differentiates itself from inherited pasts and surroundings. Take three artworks treated in the first part of this study (each of which I unpack in detail at the end of this Introduction), one of which appears to proclaim the modernity of global mapping against the parochialism of received spatialities; another to hold out the image of totally planned and artificially reconstituted urban worlds; still another, through the metaphor of the island, to capture the sharply bordered, internally homogenous spatiality through which modern nation states delineate their identity. Yet in the very process of reiterating these founding ruptures, of realising them concretely in visual form, map art exposes repressed continuities and complexities that haunt - and when articulated undermine - the root demarcations that constitute global modernity. Thus, on my analysis, these artworks show how the mapped modern globe is every bit as constructed and constraining as the metaphysical worldviews it displaced; how modernist city planning actually precipitates the very disorder and ambivalence it strives to extinguish; and how a groundswell of difference and global hybridity persists, unacknowledged, athwart the insular borders delineating modern states.

Map art might undermine the temporal and spatial ruptures that constitute modernity, but the field is not locked perpetually in the mode of critique. Far from it: I show how map art, through critically querying prevailing spatial constructs, comes to reimagine mapping practice and with it the spatialities of global modernity. For example, whereas mainstream cartography envelops the earth in a single uniform temporality, I examine artistic mappings in which multiple times and moments of history coexist alongside one another, producing what I call “polychronous cartography”. Here map art’s capacity to engage and rework cartography at the level of experimental formal practice is especially vivid. My choice to focus on map art is motivated, in large part, by how artists

recapitulate, deconstruct and reimagine the spatialities of modernity in immanent ways that elude mapping theory. Unlike critical writing on cartography, which reflects on maps in the altogether foreign medium of written theory, artists “inhabit” the map to better distill, test and expand its affordances. As Kozloff’s ironically exuberant caricature of masculinist and imperialist cartographies indicates, even where map art works to expose and critique mapping’s politics, it does so through concretely instantiated artistic (and often cartographic) forms. Formal strategies of art making are of determinate importance in the cumulative image of maps and modernity built through this study, then, but in highly differentiated ways I mean to trace in the case of each artwork I examine. Among many strategies encountered here are practices that accentuate the contradictions immanent to found maps, depict cartographies in social contexts that complicate their significance, collage together seemingly incompatible mappings or introduce incongruous elements that transform the map from within. Such strategies manifest ways of “reflecting” on cartography, certainly, but in formally incarnate modes that, unlike mapping theory, *embody* mapping’s complexities and *enact* its politics. Theorists might call for alternative mapping practices, or new spatial ontologies, but map artists push cartography to theorise and transcend itself.

This capacity to inhabit and practically reconfigure modern cartography has a reverse side, however, and must be carefully parsed. At one level, many of the artworks I examine mount strident challenges to modern mapmaking - in fissuring open the bounded form of the nation state, for instance, or enrolling satellite technology to expand mapping beyond the closed domains of institutional cartography. At another level, though, I am concerned to show how these subversions are often undercut by the fact that many map artworks repeat and reify the received ontology underlying cartography. Much modern mapmaking performs a specific ontological disclosure of the world as a measurable, simultaneous, uniformly extended space, which exists independently of the observer, can be represented exactly, and does not admit multiple correct interpretations (for fuller descriptions of this ontology, see Harley 2002, 154; Pickles 2004, 80-86). Drawing on terminology developed by Stuart Elden, I shall name this disclosure “the ontology of calculable extension” (see Elden 2005 and 2006b). Several of the map artworks I analyse denature this ontology, showing how it is, in fact, historically relative to cartography and the modern state and capital’s need to render formerly intransigent geographies transparent, measurable and malleable. Yet in engaging so closely with cartographic form, other map artworks ultimately reproduce and reinforce this ontology. Even as they dispute and strain to leap free from dominant cartographic imaginations, such artworks are

ultimately recuperated within the singular, objective and calculable casting of geography inherited from institutional cartography.

Acknowledging the double-sidedness of map art in this way allows me, in a second main contribution, to clarify the significance of map art against the background of what Jeremy Crampton has called the “undisciplining of cartography” in recent decades (2010, 40). Existing scholarship stresses how map art has combined with digitisation and critical cartography in “taking the map back” from institutional control, thereby reclaiming the mantle of mapmaking for formerly delegitimised lay and artistic practitioners (Wood 2010, 156). Having thematised the ontology of calculable extension throughout my analysis of map art, however, I conceive the issue differently. My argument cautions that, in itself, the recent diffusion of mapping practices to an enlarged social field through digitisation, while seeming to explode institutional cartography, often inherits and further entrenches its ontology. Against this backdrop, I claim that the value of experimental map art lies less in how it extends cartography to its excluded others (which is happening regardless of map art) than in the possibility that it might imagine qualitatively different conceptions of mapping and geography.

To demonstrate map art’s distinction in this regard, my argument concludes by foregrounding the film that first incited me to write this study: Peter Greenaway’s *A Walk Through H* (1978). In unfolding a multiple, fluid and above all performative conception of mapping, which does not represent but rather enacts rich incalculable geographies, *A Walk Through H* provides an exemplar for how map art might truly contravene institutional cartography. Indeed, whether in the conquering of colonies or administration of states, the globalisation of clock-time or the wholesale planning of cities, the articulation of modernity globally has relied on the cartographic casting of the world as a measurable and malleable extension. My study argues that in addition to estranging and testing this constitutively modern ontology, the continuing significance of map art consists in how it, in stark contrast to the heightened calculability naturalised through digital mapping, constructs cartographic ontologies as yet unknown.

Having set out the parameters and main arguments of my study of map art, the remainder of this Introduction is structured as follows. To establish the requisite theoretical and historical background to the arguments elaborated above, the following section offers a brief genealogy tracing shifting discursive constructions of maps in modernity, attending closely to designations of art and science in mapping. After this comes a section focused on methodology, in which I explain the interpretive

strategy of geographically-informed cultural analysis that I bring to bear on map art in this study. The last section offers a breakdown of the chapters, setting out in detail the six case studies I examine in depth, the theories of global modernity I draw on to analyse them and how these analyses feed into the arguments set out above.

A Genealogy of Maps, Science and Art in Modernity

This section provides a brief genealogy tracing how maps, and especially art and science *in* maps, have been discursively constructed in different ways in modern history. My purposes are to elaborate the reasoning behind my premise, given above, that the history of mapmaking is coextensive with that of global modernity; to establish the discursive backdrop against which the import of practices transgressing the art/cartography distinction will be judged in the following chapters; and to be able to situate works of map art in relation to broader shifts unfolding in contemporary mapping. The genealogy begins by parsing Denis Wood's argument that it is only with the advent of modernity that mapmaking emerged as a differentiated activity in its own right. The culminating moment in this process of separation, I suggest, was institutional cartography's discursive opposition of science against art in the mid-twentieth century. Following this I appraise the possibility that mapping cultures have undergone a "paradigm shift" in recent times, focusing on how cartographic rhetorics of science and specialism have, under the pressure of digitisation and cultural critique, given way to expanded mapping cultures and more nuanced conceptions of cartographic truth.

The premise of this study - that map art is especially well placed to explore themes of global modernity because mapmaking itself has been inextricably bound up with the articulation of modern nation states, colonialism and capitalism - stands at odds with commonly held assumptions about the universality of maps. Writers adhering to what I have termed the "humanist" conception of cartography often adduce "maps" in ancient, even prehistoric societies or across dispersed cultural contexts to present mapping as a "cognitive and cultural universal" (Varanka 2006, 15).⁶ My counter assertion of the modernity of mapmaking is grounded in Denis Wood's revisionist survey of map history. In *Rethinking the Power of Maps* (2010, 19-35), he argues that maps, as they

⁶ See, for example, the conclusion of Norman Thrower's chapter surveying mapping practices of "preliterate peoples": "That map making arose independently in isolated societies attests to its universality" (2008, 10).

are understood today,⁷ “have comparatively shallow roots in human history, almost all of them having been made since 1500” (2010, 20). The impression that mapmaking is coextensive with human history, Wood expands, is an effect of contemporary modes of interpretation, which often anachronistically conflate discontinuous artefacts and practices under the generalised label of cartography (2010, 26-27). Quite unrelated forms of ancient wayfinding, cosmography and itinerary, which neither influenced one another in a common tradition nor performed equivalent functions, are retrospectively situated as belonging to a shared continuum in the history of cartography, despite the fact that the English words *maps* and *cartography*, much like their equivalents in Spanish, French, Turkish and Japanese, took on their current meanings only in the early modern period (27). Wood insists that ancient artefacts and practices now registered in histories of cartography - from Christian *mappamundi* to Peruvian *quipu*, Australian songlines to Babylonian cosmograms - “were not emitted *as maps* by those who made them” (26). Either they performed historical, cosmographical, genealogical, spiritual or other functions that do not approximate the “heightened spatiality” ascribed to maps today, or else they fused spatial representation with these other functions in multi-dimensional objects that precede modern discriminations between geography, history, theology, cosmography, genealogy and art (24). “Until modern times,” Wood sums up, “no society distinguished - or made - such maps as distinct from religious icons, mandalas, landscape paintings, construction drawings, itineraries and so on” (26).

To insist, in this way, that it is anachronistic to label many pre- and non-modern objects maps is not to denigrate their significance in relation to mapmaking. To the contrary, it preserves their specificity from reduction to subsequent categories. And crucially for my study of map art, it also allows one to grasp the history and functions specific to cartography. “Though in 1400 few people used maps,” Wood suggests, “by 1600 people around the world found them indispensable. There is a divide here that is impossible to evade” (27). Though he acknowledges that small numbers of maps *do* predate 1400, far from seeing these as undermining his periodisation, Wood asks why they remained isolated examples, as opposed to mapmaking of the sixteenth century, which “didn’t die but rather flourished in the most astonishing fashion” (23). His answer is that mapmaking - though

⁷ On Wood’s qualified definition, maps are “more or less permanent, more or less graphic artefacts that support the descriptive function in human discourse that links territory to other things, advancing in this way the interests of those making (or controlling the making) of the maps” (2010, 20).

long possible and intermittently practiced - only became necessary with “the needs of the nascent state to take on form and organise its many interests” (38).⁸

For Wood then it was the advent of modern state formation, and particularly the establishment of centralised modern states in Japan, China and parts of Europe in the sixteenth and seventeenth centuries, that first called for the emergence of mapmaking. But maps are not tethered to modern states exclusively, as Wood acknowledges, and accordingly this Introduction has already indicated the role of mapmaking in colonialism, uneven capitalist expansion, secularisation and spatial planning. Through these overlapping processes of global modernity, maps have been generalised to such an extent that, today, they seem universal. Significantly for this genealogy, mapmaking’s differentiation from among manifold visual practices in the early modern period did not initially entail sharp distinctions between mapmaking and art, or between art and science in mapmaking. Indeed, Svetlana Alpers goes so far as to suggest that in the Dutch Republic of the seventeenth century, the major commercial centre of early modern colonial cartography, “there was perhaps no other time or place such a coincidence between mapping and picturing” (1983, 119).⁹ Although mapmaking practice was increasingly formalised and framed in terms of scientific method and progress during the nineteenth century, it was only in the mid-twentieth century that mapmaking and art, in Markus Jobst’s metaphor, “filed for divorce” (2009, 4). In the 1950s mapmakers formulated scientific principles for mapmaking, as part of a wider bid to consolidate cartography as an academic discipline (see McMaster and McMaster 2002; Edney 2005, 713; Wood 2010, 121-125; Crampton 2010, 50-61). The influential US geographer Arthur H. Robinson is often cited as the leading figure in this project, which aimed to replace “convention, whim and ... ill founded judgment” with “principles based on objective visual tests, experience, and logic” (quoted in Edney 2005, 17). In the mid-twentieth century, then, a set of negative associations (with subjectivity, partiality, intuition and emotion) conjured around “art” came to function as a rhetorical foil or *other* against which cartographic professionals and institutions affirmed their own distinction and “scientific” authority (Cosgrove 2005, 36; Krygier and Varanka 78). Thus Edney (1993, 56) and Wood (2010, 120-126) suggest that binaries clustered around the art/science dualism have shaped and justified the formation of cartography as a professional discipline, the preserve of trained

⁸ On cartography’s centrality to the modern state formation, see Biggs 1999.

⁹ For a more comprehensive study of the connections between mapmaking and art in the early modern period, see Rees 1980.

specialists. And thus, at a larger scale, Bauman (2012, 31) emphasises how bureaucratic states have secured the social legibility required for effective control by delegitimising all rival articulations of space as lay or artistic deviations from their own, scientifically established mappings.¹⁰

Some previous treatments of map art reproduce versions of the art/science distinction by assuming that the “art” in cartography denotes ornamental elements like cartouches or pictorial insets (Welu 1987), the aesthetic design of maps more generally (Woodward 1987, for a critique see Cosgrove 2005, 37) or traces of the emotions and individual subjectivity of mapmakers (Fairbairn 2009). This study, by contrast, takes the view expressed by Matthew Edney that the opposition of art and science “is a matter for social negotiation and represents no underlying distinction” (1993, 75). Designations of art and science in mapmaking are actually performative gestures that distribute authority unevenly among different groups of mapmakers. Two points are crucial for the construction of my arguments later in the study. Firstly, the stakes of the art/cartography distinction are in large part *social* in that, however cogent the empirical justifications adduced to sustain it, its ultimate effect is to apportion cartographic legitimacy unequally in society. Secondly, this social division of authority - whether between scientific cartography and arts practice, or between designations of science and art *in* cartography - is grounded in a set of ontological assumptions about what constitutes space and its mapping. Within the received ontology reproduced by cartography, which I am calling the “ontology of calculability”, the world exists objectively, separate from and prior to cartographers’ constructions, and is measurable, calculable and representable. There can be no plurality of equally correct mappings, while only the methodologies labelled “scientific”, and founded on supposedly neutral methods of measurement and geometrical projection, offer access to the singular, non-contradictory and undistorted truth of geography.¹¹ These two social and ontological aspects of the art/cartography divide are bound up together in that

¹⁰ The “elusive goal” of modern state formation, writes Bauman, “was the subordination of social space to one and only one, officially approved and state-sponsored map - an effort coupled with and supported by the disqualification of all other, competitive maps or interpretations of space, as well as the dismantling or disabling of all cartographic institutions and endeavours other than the state-established, state-endowed or state licensed” (2012, 31).

¹¹ My presentation here is informed by Edney’s analysis of how official cartography “proclaims that there is one world which can be progressively described and known, and that survey map is that description” (1993, 64), and by J.B. Harley’s summary of the assumptions preconditioning established cartography, which is worth quoting at length: “[official cartography’s] assumptions are that the objects in the world to be mapped are real and objective, and that they enjoy an existence independent of the cartographer; that their reality can be expressed in mathematical terms; that systematic observation and measurement offer the only route to cartographic truth; and that this truth can be independently verified” (2002, 154).

claims to scientific expertise, and thus heightened authority in social discourse, rely on an ontological understanding in which there is only one objective and correct description of reality, graspable only through specialised scientific procedures. Conversely, to allow the plurality, partiality and creativity attributed to art to infuse one's ontology would undermine the exclusive access to objective truth claimed by cartographic professionals, opening geographical reality up to diverse, equally legitimate mappers.

This study shows how map artists have challenged the social effects and ontological basis of the distinction that cartographic institutions have drawn between scientific practice and art in the twentieth century. Although I argue that map art's unique value in relation to the wider culture of contemporary mapping rests in its capacity to envision alternative ontologies, the study remains sensitive to how even ostensibly subversive map artworks often reproduce the ontology of calculability. Irrespective of the underlying ontology, though, where map art queries or blurs the distinction between cartography and art, it also gestures against the received concentration of cartographic legitimacy that it maintains. As such, map art must be situated in relation to the broader process that Jeremy Crampton has called the "undisciplining of cartography" (2010, 40). "For most of its history", Crampton writes, "mapping has been the practice of powerful elites" (25-26). However, citing mapping's digitisation and the rise of more nuanced conceptions of cartographic truth over the last four decades, he suggests that professional, institutional and ultimately state control over mapping "is now being challenged by the emergence of a new populist cartography in which the public is gaining (some) access to the means of production of maps" (2010, 26).

In contesting the art/science binary that strengthened the institutional monopoly on authoritative mapmaking, map art contributes to this process of "undisciplining" cartography. Therefore, this final part of my genealogy appraises the idea that institutional cartography, understood as the preserve of trained, often state-sponsored specialists, has given way to a socially expanded and formally diversified field of mapping practices, often taking digital form. Almost unanimously, mapping theorists have narrated the recent history of mapmaking in terms of rupture and transformation, suggesting a transition between residual and emergent mapping paradigms (della Dora 2012; Pickles 2004; Crampton 2010). This notion of a paradigm shift, though expedient, is rather too neat to capture the varied, halting and complex developments that, together, are transforming mapping cultures.

The onset of computerisation in the 1970s, its widespread expansion in the 1990s and the miniaturisation and networking of digital technologies during the 2000s (Pickles 2004, 149) has given rise to radically new mapping possibilities. Received modes of mapmaking, in which static two-dimensional cartographies were hand drawn by dedicated specialists on paper substrates before engraving and dissemination in print, have in large measure been displaced by digital platforms hosting highly flexible, networked and often user made mappings. A rich semantics has developed to grapple with various forms and aspects of digital mapping, including geospatial applications, geobrowsers, geolocation software, geovisualisation, the geoweb, the geospatial web, locative new media and map mashups, a common general designation being GIS (geographic information systems). The digital mappings made and circulated under these rubrics remain open to continual renewal, augmentation and manipulation by diverse mappers. Often, they render geographies in three dimensions, and they exist not as single, enduring artefacts but rather as codes that can be instanced, used and modified simultaneously in diverse settings by numerous networked mappers. For many, such flexible, multiple and collaborative mapping practices signal a rupture in the history of cartography every bit as significant as the advent of modernity is for Wood. Indeed, Valérie November, Eduardo Camacho-Hubner and Bruno Latour go so far as to suggest that, henceforth, maps should be dated “BC” and “AC” (before and after computers) (2010, 582-4).

GIS has reconfigured the social distribution of mapping, firstly, at the level of consumption, extending the accessibility of maps to a spatial field coextensive with Internet coverage, although the quality and consistency of this access diverges drastically around the world.¹² Online mapping platforms have challenged the received sociology of mapmaking more fundamentally, however, in diminishing the distinction between map production and consumption, inviting interaction and creative elaboration from non-professional users. Beyond the “geotagging” of additional data within a set structure, platforms with open-source application programming interfaces (APIs) enable substantial annotation, augmentation and the overlay of external thematic data (see Roush 2005). Although the majority of popular open-source mapping applications are owned by large corporations that determine the parameters of user agency, there are democratically organised non-profit alternatives. OpenStreetMap, the most successful GIS produced and run solely by an online

¹² On the differential access to GIS consequent upon the uneven development and integration of Internet infrastructures, see Melinda Laituri’s work on digital mapping in peripheral and postcolonial societies (2002) and Mark Dorrain’s discussion of Google Earth’s “politics of resolution” (2013, 301).

community of volunteer mappers, has proven especially suited to disaster relief; well in advance of established outlets, contributors producing detailed aid maps in response to earthquakes in Haiti in 2010 and Nepal in 2015, as well as the spread of Ebola in West Africa from 2013 (see Poiani, Rocha, Degrossi and de Albuquerque 2016; Zook, Graham, Shelton and Gorman 2010).

The broader diffusion and diversification of digital mapping beyond professional domains, however, largely takes more quotidian forms. Today, mapping is performed less in dedicated sites than in and through an broadened variety of everyday contexts by an expanded body of non-specialist “producers” (on this neologism, see Coleman, Georgiaidou and Labor 2009). On these grounds, map theorists have taken digitisation to have exploded the received concentration of means and legitimacy in mapping. In 2003 Wood declared that “cartography” - which must be understood here not as mapmaking as such but rather mapmaking’s institutionalisation as a specialised profession - is “dead”:

GIS software, particularly once it spread to personal computers and then the Internet, made it possible for anyone with access to a computer to make almost any kind of map, and since the software embodied most of the intellectual capital of academic cartographers as presets and defaults, it all but made Everyman and Everywoman the functional equivalents of professional cartographers ... The Age of Cartography (RIP) would seem to be over. (2010: 126)

Where mapping was once claimed as the preserve of state-sponsored specialists, Wood suggests, now it is conducted collaboratively by a networked community of digital mappers.

However, many writers also caution against overly celebratory and epochal narratives of digital mapping’s democratising influence, whether by reminding us that unofficial mapping practices have long existed alongside mapping institutions (Pinder 2007, 457) or by problematising digital mapping cultures. In a direct counter to Wood’s insistence that “Everyman and Everywoman” are now equivalent to cartographers, rhetorics of expert distinction threaten resurgence in recent attempts to register and license “qualified” GIS experts as “geospatial engineers” (Crampton 2010, 41). As for the participatory map cultures that have emerged, Jason Farman (2010) suggests that the dominant geobrowsers actually contain and co-opt user agency by retaining control over the

contexts within which participation occurs.¹³ Certainly, user augmentations and maps made with MapQuest, MyMaps and Bing Maps, the three most prominent open-source mapping applications, are ultimately owned by AOL, Google and Microsoft respectively, and it could be argued that digitisation has not democratised mapping so much as reconstituted it in the hands of large corporations, which syphon off and monetise data from the commons under the veneer of user volunteerism. Other scholars stress the importance of GIS' military origins, Caren Kaplan (2006) arguing that locative media have generalised military rationalities of tracking and targeting through civil society. John Pickles' critique of the "cyber empires" being built through GIS is especially wide-ranging (2004, 147-75). Even as scholars and mappers celebrate the expanded agency brought by GIS, Pickles calls on us to remember "the ways in which these same mapping practices participate in fuelling new rounds of capital investment, creative destruction, uneven development, and indeed, at times, the ending of life, wrenching it from its moorings, and destroying it piece by piece, limb by limb" (152). Accepting these important rejoinders, I am prone to recognise the social extension of mapmaking attendant on digitisation. Although the second part of this study criticises GIS and GPS, this is not because they *fail* to open mapping to a broader social field, but rather because they expand mapping beyond professional domains without challenging the received ontology of calculability. This, then, is the basis for my argument that digitisation effects only a partial paradigm shift in mapping, and stands in need of a supplement which map art is uniquely constituted to deliver: that of reimagining mapping ontologies.

I am loath to suggest, though, that map art is alone in challenging received conceptions of mapping, or that the "death" of cartography is solely the effect of digital technologies. To close this section, therefore, I want to signal the significance of revisionist philosophies of mapping in the changes I have been discussing. Grouped under the heading of "critical cartography", these philosophies have sought to expose and contest the veiled politics of official mapmaking. Practices and theories of critical cartography are united by the insight that "maps make reality as much as they represent it" (Crampton 2010, 18). Spurred on by a controversy in the 1970s, in which the German geographer Arno Peters promulgated a version of the Gall world map in explicit opposition to the (alleged) Eurocentrism of the dominant Mercator projection (see Black 1998, 33-36), politically sharpened perspectives on mapping gained much recognition in the 1980s and 1990s, in

¹³ Ultimately, however, Farman argues beyond this, suggesting the users might query dominant frames of representation from within.

large part owing to the seeping influence of postmodern and poststructuralist philosophies asserting the agency of representations and cultural relativity of truths. Claims surrounding neutrality, transparency and scientific rigour were progressively dislodged in research applying these philosophies, exemplified by J.B. Harley's (1988) formative Foucauldian recasting of maps as tools and expressions of social power. In summarising the cumulative import of these shifts, John Pickles suggests that "the epistemology of modernist, universalist inquiry ... has been pretty much laid to rest as a foundation for science" (2004, 145). "In its place", he goes on, "we have more nuanced and multiform understandings of cartographic practice in which the production of geographical images is understood to be a thoroughly social and political project" (145).

Where digitisation has broadened the social dispensation of mapping, critical cartography has made considerable headway in displacing cartographic presumptions of scientific neutrality and representational correspondence. Although cartographic theory is still diversifying around new themes (see Dodge, Kitchin and Perkins 2009), most current humanities and social science scholarship holds maps to organise historically contingent and politically situated propositions about reality, to build social identities and to construct specific relationships between subjects and geographies. This growing appreciation of critical cartography is important in the context of this genealogy. It shows how recent shifts away from the residual formation of cartographic institutions, upheld by discourses of scientific objectivity, is determined not solely by digitisation, but rather by an intersection of different developments, of which map art is another. The extent to which critical understandings of mapping have taken hold beyond the academy, however, is uncertain. Indeed, despite their flexibility and interactivity, in Chapter Five I caution that GIS still largely aim at correctness and exact calculation in mapping. In 2013 Google, ignoring decades of critical cartography's insistence on the politics and partiality of mapping, claimed to be assembling a "perfect map of the world", prompting a riposte from Jerry Brotton, author of an enormously popular book asserting the relativity of world maps to different cultural worldviews (see Brotton 2013). If there is a paradigm shift unfolding through contemporary mapping cultures, it seems far from complete.

This short genealogy has traced shifting constructions of maps in modernity, making three main points that I take up in my study of map art over the following chapters: first, that the map emerged as a distinct form only with the onset of modern state formation, and is specific to the modern need to render geographies as the distanced objects of calculative knowledge and transformative practice;

second, that in the twentieth century professional mapmaking institutions promulgated rhetorics of science and specialism, which defined cartography against art in order to bolster official claims to scientific authority; and third, that uneven digitisation has dovetailed with revisionist conceptions of cartographic truth in recent decades to effect a newly distributed and digital mapping culture, in which distinctions between producers and consumers are reduced.

Cultural Analysis

Before providing a detailed breakdown of the six chapters that compose this study, I want to clarify the procedures of looking and interpretation through which I engage works of map art and establish the arguments prefaced above. This study employs a geographically-informed method of cultural analysis - an “interdisciplinary research practice” associated with literary theorist and art writer Mieke Bal (Aydemir 2008, 38). Cultural analysis attends to the dynamic relations between cultural objects and conceptual theories in close empirical encounters, guided by “a keen awareness of the critic’s situatedness in ... the social and cultural present” (Bal 1999, 1). As an approach to artworks, cultural analysis differs from protocols received from art history in that it does not subordinate specific engagements with art to questions of “influence, context, iconography, and historical lineage” (Bal 2001, xi). This is not to suggest that cultural analysts cannot draw on these fields; my analyses make reference to the social and cultural contexts surrounding map artworks, draw comparisons with other, contemporaneous artists and establish the iconographical significance of motifs in the images I examine. Unlike these approaches, though, for cultural analysis the meaning of artworks is neither fixed at the moment of their creation (as in much social history of art) nor encoded within them as an essential content awaiting proper identification (as iconography proposes). Significance emerges instead from the play of relations that surround and include art objects as they pass through various different spatial and conceptual conjunctures. On this view, persistently referring artworks back to cultural contexts or authorial intentions in their originary milieu effects a form of reverse anachronism, precluding new readings arising from the fact that artworks are reiterated whenever they are confronted anew. Undertaken in this light, cultural analysis turns on the encounter between artwork and researcher, who attends to what art “*is, means, and does* in the present time of viewing” while feeding in other, often theoretical resources (Bal

2001, xii).¹⁴ In juxtaposing map artworks alongside spatial theories of global modernity, therefore, this study stages a series of cultural analytic encounters between art objects and geographical theories of modernity to explore how they mutually illuminate one another. My aim is not to ascertain what the artworks mean or meant in an iconographic or historical register, but to engage them from a present, theoretically informed perspective, opening them up to themes of global modernity.

Two consequences of this method for my analyses warrant special emphasis from the outset. Firstly, the relations between artwork and theory are conceived on the model of neither artistic illustration nor theoretical explanation, but rather constitute a reciprocal, mutually transforming dialogue, with the artwork “participating in the construction of theoretical views” (Bal 1991, 12). Hence, I both read map art through the lens of spatial theory, and consider how these theories come to be articulated and critically reflected upon in the map artworks, where they accumulate new resonances. But artworks cannot exercise these capacities for theoretical dialogue autonomously of critical practice; which leads, secondly, to how cultural analysis affirms the agency of the researcher in co-creating cultural meanings. This does not suggest that critics can write whatever they please, but that in bringing theoretical insights to bear on artworks and responding to art through creative forms of writing, researchers might wilfully activate and enrich the “event of poesis” through which artistic meaning arises (Hawkins 2013, 13). The following analyses should therefore be seen as creating and enacting an encounter between map art and spatial theories of global modernity, which unfolds in and through my writing practice.

The sustained, theoretically driven encounters with individual map artworks staged in this study differ markedly from existing writing on map art. Admitting for several exceptions (Crampton 2010, 169-172; Hawkins 2013, 37-60; Nash 2005; Parsons 2014; Wood 2010, 189-90, 218-30), scholars have tended to offer broad outlines or overviews of map art instead of delving into the complexities of focused case studies. Whether in establishing lists and lineages of map artists (Watson 2009, 293-302; Curnow 1999, 255-60), classifying different strands of work in the field (D’ignazio 2009, 190-91) or reflecting on its aetiology and cumulative import (Wood 2010, 197,

¹⁴ Interestingly for studies like this one that are concerned with the relations between art and geography, these procedures may not be incidental to geography. Harriet Hawkins emphasises the notion of encounter as a specifically geographical mode of art analysis, drawing on Bal (amongst many others) in an explicitly spatial register to explore “productive relations between the artwork, world and the various audiences of the work” (2013, 15; see also my review of Hawkins: Ferdinand 2014, 3-4).

214-18), these accounts present “aerial surveys” of the field, charting contours that are visible only from high altitudes.

My approach can be grasped with the very different geographical metaphor of the core sample. Knowing that map art’s larger geography has been extensively surveyed, each chapter in this study drills down - narrowly but deeply - into works by a particular artist, in order to grasp the intricate ways in which map art reflects, tests and reimagines modern spatialities. The sites from which I extract core samples are few and far between, and thus do not represent map art’s breadth and variety, which is best ascertained in the surveys cited above. Instead, I have selected case studies that reflect the diverse facets of global modernity explored by map artists. No limited selection of objects could encompass the full range of problematics entailed in the rubric of global modernity, so I have tried to foreground a variety, focusing on themes that have not yet been studied extensively in writing on map art. Although questions concerning modern colonialism, gender politics and world markets recur throughout the study, I have not dedicated individual chapters to them because other scholars have already analysed the articulation of these themes in map art.¹⁵ In attending to aspects of global modernity that have not received sustained attention in the context of map art, my study broaches the disenchantment of the world; standardisation of time; combined and uneven development; utopian social planning; constructions of bordered statehood; the ontology of calculability; rhetorics of objectivity and scientific authority; and digital technologies. Though admittedly overviews of map art often mention topics of state bordering and cartography’s digital transition, I explore these themes through focused, chapter-length analysis of selected artworks: core samples in a field where synoptic surveys predominate.

Breakdown of Chapters

This study has two parts. Part I explores how imaginations of global modernity are realised and complicated in the work of three map artists. Chapter One quite literally “sets the scene”, establishing the central narrative, themes and problematics developed through the larger study by attending to a scenic painting made by the Soviet artist Solomon Nikritin in 1935. *The Old and the*

¹⁵ Cólín Parsons has analysed “the depredations of colonialism and its legacies of violence” in the map art of Gulam Mohammed Sheikh (2014, 185); Catherine Nash attends to the formal strategies through which Kathy Prendergast and other map artists counter masculinist rhetorics of disinterestedness in geography (1996; 2005); and Jeremy Crampton reflects on the geographies of finance as articulated in map art of Deirdre Kelly (2010, 169-72).

New depicts a bare geographical globe amid figures symbolising tradition and progress in a nebulous wilderness. Drawing on philosopher Peter Sloterdijk's argument that terrestrial globes manifest a post-theological spatiality and arch symbol of modernity, I explore how Nikritin's imagines the transition, in the context of Soviet modernisation, from premodern cosmographies to the cartographic ontology, in which the earth is disclosed as a disenchanting globe. The mapped globe has conflicted implications for modern culture in *The Old and the New*: on the one side, it is seen to estrange people from place and supplant traditional worldviews, while, on the other, it challenges modern subjects to consciously originate new spatial orders. Thus, on my interpretation, *The Old and the New* foregrounds a continuing modern impulse to map meaning and order onto a disenchanting earth in which neither inhere. This sets the backcloth or bass note against which each of the subsequent case studies explore different (often conflicting) cartographic projections of order onto the times and spaces of a contingent earth.

The first of these projections is the uniform global temporality constructed through modern mapping, which I discuss in Chapter Two. My focus is *Forthrights and Meanders*, a series of maps figuring obscure imagined geographies that were printed and drawn on rice paper by the US artist Alison Hildreth, and first exhibited in 2009. Against routine identifications of cartography first and foremost with space, Hildreth's series foregrounds the cartographic construction of temporality; more specifically, they contest the universal and calculative apprehension of time that has come to prevail in modernity. Whereas cartography has played an important role historically in replacing the overlapping temporalities of traditional societies¹⁶ with globally coordinated clock time, the maps of *Forthrights and Meanders* are striking on account of the multiple temporal orders that coexist within them. In combining elements belonging to radically different moments of history, Hildreth's polychronous cartographies shatter the singular temporality conventionally reinforced through modern mapping. As such, they are especially well constituted to grapple with the clashing temporal dynamics of modernisation; my analysis will focus on how themes of combined and uneven development and encroaching ecological ruin are represented in *Forthrights and Meanders*.

Having unpacked Hildreth's experiments in cartographic maps and time, my argument in Chapter Three focuses on mapping in the context of radical modernist attempts to reimagine and reconstitute urban space. It attends to a series by the Dutch artist Gert Jan Kocken, named the *Depictions*. In

¹⁶ On T.J. Clark's summary, the temporality of pre-modern cultures is characterised by "the past living on (most often monstrously) in the detail of everyday life" (2012, 70).

these works, found maps, made in pursuit of conflicting ideologies during the Second World War, are combined digitally into composite representations of cities such as Amsterdam, Berlin and Rome. Layering together hundreds of different cartographies, the artworks encapsulate, but also query the connections made among maps, states and warfare in the practice of modern world-making. To grasp these connections, I read Kocken's *Depictions* in conjunction with Zygmunt Bauman's conception of the modern state as a "gardener" of society and space. Along the way, the chapter highlights Kocken's vivid demonstrations of both the transformative potential released in state military mapping, but also the unevennesses and dialogic complexities with which even apparently totalising state gardening projects are fraught. My analysis of the *Depictions* builds an image of modernity as a contested garden, in which maps condition the remoulding of received conditions according to planned visions of society. In concluding the chapter, I incorporate a geographical dimension into my methodology by analysing the *Depictions* in relation their sites of exhibition. In doing so, I suggest the commensurability of Kocken's vision with the social present. The *Depictions* might centre on the Second World War, yet in defamiliarising viewers to cartography's transformative, world-moulding power, they bring into focus some of the continuing fundamentals of global modernity.

In showing how the modern apprehension of a contingent, calculable and ultimately malleable world has played out in seemingly total state endeavours, Kocken's critique of attempts to "garden" modern social space constitutes the conceptual core of this study. Chapter Four foregrounds perhaps the most prominent cartographic figure through which modern political space has been constructed: the bordered nation-state. More specifically, it attends to how the modern nation-state is reimagined in *Utopia*, a composite digital cartography made by the Japanese artist Satomi Matoba in 1998. This work brings together two found maps - one presenting Pearl Harbour, Hawaii, the other Hiroshima - to form a single island. I unpack the image in relation to a longer tradition of insular imaginations in modernity, principally Thomas More's treatise *Utopia* of 1516, in which the bounded geographical form of the island serves as the template through which the nascent modern state was envisioned and realised. My argument focuses on how Matoba undermines this trope of the bordered, internally homogeneous state in bringing together the once geographically distant and politically opposed sites of Hiroshima and Pearl Harbour in an island. Beyond the naïvely utopian gesture of reconciling the enmities of twentieth-century modernity, I stress how *Utopia* articulates the repressed global

hybridity that persists astride, and global difference that persists with, even the most insular delineations of statehood.

Together, the map artworks examined in Part I show how otherwise disparate cartographic constructions of time and space rest on a distinctly modern ontology: the ontology of calculability, that is, in which the world is disclosed to a distanced gaze as a measurable monochronous field awaiting purposive intervention. Part II focus on how practices blurring mapping and art challenge this ontology (which entails their separation) as part of the larger “undisciplining of cartography” that I have discussed in this Introduction. Chapter Five addresses how map art cuts against the received social concentration of authority in mapping by looking at two mapping performances by UK-based walking artist Jeremy Wood. In *My Ghost* (2000-ongoing) and *Meridians* (2005), Wood uses Global Positioning Systems (GPS) to trace his grounded mobility, turning his moving body into a “geodetic pencil” capable of walking/drawing large-scale mappings. I frame Wood’s artworks in relation to philosopher Michel de Certeau’s account of spatial practice in the modern city, which opposes cartographic surveillance and regimentation to the unruliness of grounded urban mobilities. By contrast with de Certeau’s description, Wood’s itinerant mappings conflate lived mobility and synoptic cartography, such that they become one and the same practice. In doing so, Wood exemplifies how map art plays into a wider expansion and diversification of cartographic legitimacy beyond institutional domains in contemporary mapping cultures. Yet despite embodying this broader impulse to reclaim mapping practice from professional control, Wood’s art remains sensitive to dangers and blind spots in the emergent paradigm of distributed digital mapping. To show how, my argument concentrates on Wood’s walking map *Meridians*. Playing divergent cartographic standards off against one another, *Meridians* emphasises the arbitrariness of locative grids that are otherwise taken-for-granted in digital mapping. *Meridians* reminds us that although contemporary mapping is bearing witness to an (uneven) social diffusion of mapping practices beyond state and professional institutions, it largely repeats a received cartographic ontology, which grids up formerly infungible physical geographies, and produces them as a uniform extension.

A more meaningful intervention in cartography, I conclude, would not only expand mapping practice to an enlarged social field, but also offer a qualitatively different determination of mapping. It is in reimagining the underlying ontology of cartography, I argue in Chapter Six, that map art distinguishes itself from the wider revisions of mapping practice unfolding in contemporary culture. To make this point, I explore *A Walk Through H*, a film made up almost entirely of maps created by

the British painter and director Peter Greenaway in 1978. The film narrates an ornithologist's posthumous journey into the afterlife, tracking across ninety-two maps, all of which present imagined terrains. The fantastic geographies set forth in the film begin with a network of exotic cities, develop through abandoned playing fields and close with an outlandish geomorphology comprising egg shells, shadows made by flying birds, and much else besides. Why turn to this otherwise obscure early film from Greenaway's career as the final case study? My argument reads Greenaway's rich geographies in relation to the quintessentially modern ontology explored over the preceding case studies, in which a meaningless world is rendered measurable, known and thus malleable through mapping. In doing so, I stress how *A Walk Through H* offers an alternative grasp of cartography, in which maps do not represent a preexisting measurable reality, but rather performatively manifest and unfold rich fantastic geographies. As such, the film not only partakes in map art's more general gesture of "taking back the map" from professional control for an expanded field of mappers. Further than that, in displacing representationalist assumptions with a performative casting of cartography, *A Walk Through H* undermines the rhetorics of objectivity and scientific authority through which institutions and professionals laid claim to exclusive authority in mapping in the first place. My study of map art concludes, then, by affirming Greenaway's vision of unfettered cartographic world-making beyond essentialised notions of representation, art and science. *A Walk Through H* reproves neither maps, nor even modern world making, but rather the rhetorics of representation, professional specialism and the art/science distinction that have hitherto bound mapping practice to the ideal of correctly calculating a single preexisting reality.