SOCIAL & CULTURAL GEOGRAPHY, 2018
VOL. 19, NO. 1, 120–138
https://doi.org/10.1080/14649365.2016.1266025

Routledge
Taylor & Francis Group

Market monstrosity in industrial fishing: capital as subject and the urbanization of nature

Martín Arboleda[a] and Daniel Banoub[b1]

[a]Urban Theory Lab, Harvard University, Cambridge, MA, USA; [b]Department of Geography, The University of Manchester, Manchester, UK

ABSTRACT

Through a materialist reading of the aesthetic, this paper explores Leviathan, a project of visual anthropology produced by Harvard University's Sensory Ethnography Lab, in order to reflect on the urbanization of nature as it is advanced by the more-than-human scripture of power objectified in the technologized, capital-intensive spaces of transnational fishing. With its idiosyncratic and technically elaborate mode of representation, Leviathan realizes a visual testament to the forms of disfigurement, exploitation and brutalization of human and nonhuman natures that have ensued from the real subsumption of planetary space to capital. Building upon a strand of critical theory that has advanced Marx's original, yet partially developed insights on 'capital as alienated subject', we contend that one of Leviathan's most salient artistic accomplishments has been to provide a vivid portrayal of how circuits of abstraction come to life as they take possession of human bodies and instruments of production. As a monster tale of global capitalism, Leviathan showcases the purposeful, impersonal, and quasi-organic features of the 'automatic subject' that has come to rule over the materiality of social life.

Monstruosité du marché dans la pêche industrielle : le capital comme sujet et urbanisation de la nature

RÉSUMÉ

A travers une lecture matérialiste de l'esthétique, cet article explore Léviathan, un projet d'anthropologie visuelle produit par le Laboratoire d'Ethnographie Sensorielle de l'Université d'Harvard, afin de réfléchir sur l'urbanisation de la nature telle qu'elle est avancée par l'écriture plus qu'humaine du pouvoir chosifié dans les espaces technicisés à forte intensité de capital de la pêche transnationale. Avec son mode de représentation particulier à la technique élaborée, Léviathan réalise un testament visuel des formes de défiguration, d'exploitation et de brutalisation des natures humaines et non humaines qui ont résulté de la subsomption de l'espace planétaire au capital. En nous appuyant sur un élément de critique théorique qui a fait avancer les vues originales mais toutefois partiellement développées de Marx sur « le capital en tant que sujet aliéné », nous soutenons qu'un des accomplissements artistiques les plus remarquables de Léviathan a été de faire un

ARTICLE HISTORY
Received 18 January 2016
Accepted 10 November 2016

KEYWORDS
Planetary urbanization; urban political ecology; urban metabolism; science and technology studies; aesthetic theory; dialectical criticism

MOTS CLÉS
urbanisation planétaire; écologie urbaine politique; métabolisme urbain; études des sciences et de la technologie; théorie esthétique; critique dialectique

PALABRAS CLAVE
Urbanizaciónplanetaria; ecologíapolíticaurbana; metabolism urbano; estudios de ciencia, tecnología y sociedad; teoríaestética

CONTACT Martín Arboleda marboleda@gsd.harvard.edu
[1]Department of Geography, Memorial University, St. John's, NL, Canada

portrait de la façon dont les circuits d'abstraction s'animent alors qu'ils prennent possession des corps humains et des instruments de production. En tant que conte monstrueux du capitalisme mondial, Léviathan expose les traits déterminés, impersonnels et quasi-organiques du « sujet automatique » qui en est venu à régner sur la matérialité de la vie sociale.

Monstruos del mercado en la pesca industrial: Capital como sujeto y la urbanización de la naturaleza

RESUMEN

A través de una interpretación materialista de Leviathan, un proyecto de antropología visual desarrollado por el Laboratorio de Etnografía Sensorial de la Universidad de Harvard, este artículo busca entender los poderes más-que-humanos por los cuales las infraestructuras sociotécnicas de la pesca industrial, transforman la naturaleza en urbanización. Dada su complejidad técnica y la peculiaridad de su modo de representación estética, Leviathan elabora un potente testimonio visual de las formas de explotación, deformación y brutalización de naturalezas humanas y no humanas que se dan tras la completa subordinación del espacio planetario al capital. De acuerdo con la noción de "capital como sujeto alienado", parcialmente desarrollada por Marx, se afirma que uno de los principales logros artísticos de Leviathan consiste en ofrecer un vívido retrato de la manera en que los circuitos de abstracción capitalista cobran vida al tomar posesión de cuerpos humanos e instrumentos de producción. Un relato de los monstruos del capitalismo global, Leviathan pone de manifiesto los rasgos impersonales, volitivos y cuasi-orgánicos del 'sujeto automático' que ha venido a regir la materialidad de la vida social.

Introduction

In what could be one of the most unnerving shots of *Leviathan*, a project of visual anthropology about industrial fishing directed by Lucien Castaing-Taylor and Véréna Paravel, a fish gasps for air as it slowly suffocates in a blood-splattered deck of an industrial trawler. What makes the shot particularly disturbing, however, is not so much the suffering of the fish or the puddles of blood surrounding it, but rather the peculiar form of causation being depicted. The display of ruthless violence that confronts the viewer is lacking an agent, and appears to be performed by abstract, otherworldly forces that extend far beyond the ship. Although human laborers are filmed as they go about the industrial routine of operating machines, levers and mechanical nets, they appear as numb, quasi-conscious beings also victimized by these eerie, unruly powers. In its highly idiosyncratic and technically complex mode of representation, one of *Leviathan*'s most salient artistic accomplishments is then to provide a vivid portrayal of what Postone (1993/2003) considered to be the fundamental hallmark of late modern existence: The full subjection of the human life process to the imperatives of autonomous, directionally purposed forms of social domination. With the development of large-scale industrial production, Postone (1993/2003, p. 345) noted how the vital capacities of the human species have been gradually emptied of intentionality, being remodeled into the attributes of a process (i.e. self-valorizing value) that itself has become 'the subject'.

Drawing from a subterranean strand of critical social theory that has advanced Marx's original, yet partially developed insights on 'capital as alienated subject' (see Iñigo Carrera,

2003/2013; McNally, 2011, 2014; Postone, 1993/2003; Starosta, 2015, 2016; Wilson & Bayón, 2015, 2016), this paper makes sense of impersonal yet materialized forms of power as they mediate the process of metabolic urbanization under contemporary neoliberalizing capitalism. Authors in the tradition of Urban Political Ecology (UPE) have considered the latter process to be fundamentally driven by violence and destruction, as extra-human natures are severed from their raw state in order to be commodified and integrated to the city through complex sociotechnical systems (see Kaika & Swyngedouw, 2000; Heynen, Kaika, & Swyngedouw, 2006; Swyngedouw, 2004). In the present context of planetary urbanization, the violence that is immanent to the commodification of nature has been dramatically expanded and intensified as built environments and infrastructures are aggressively cast upon the most remote confines of the world. Variegated areas of oceanic space – along with other putatively non-urban zones like polar ice caps, deserts, and rainforests – are being relentlessly reconfigured into zones of customized infrastructure or 'operational landscapes' designed to fulfill specific functions within a spatial division of labor (see Brenner, 2014; Brenner & Katsikis, 2014; Wilson & Bayón, 2015).

If the sea is the natural element of industry, as Carl Schmitt (referenced in Mezzadra & Neilson, 2013, p. 70) once remarked, then it should offer a definitive vantage point from which to visualize the immanent brutality of the capitalist mode of production as it slays and disfigures sea creatures and human bodies as they are reduced to the social form of commodities. Using *Leviathan* as an interpretive entry point, we explore the urbanization of nature as it is advanced by the more-than-human scripture of power objectified in the technologized, capital-intensive spaces of transnational fishing. Shot with a dozen cameras and making use of pioneering filming techniques and stylistic devices, the film constitutes an ambitious and path-breaking project to document the lived, sensuous and everyday dimensions of industrial capitalism at sea. In order to bridge the sociomaterialities depicted in the film (sounds of engines, repetitive and monotonous tasks performed by workers, the grinding of metallic winches and cables as they lower nets into the water, etc.) with the broader context of global capitalist restructuring, we will draw from materialist renderings of the aesthetic (Eagleton, 1990; Goonewardena, 2005; Jameson, 1971, 1991; McNally, 2011). Given the formal assertiveness and stylistic density of *Leviathan*, we particularly intend to reclaim Fredric Jameson's (1971, 2015) dialectical reading of the artwork, and especially his insistence on how form, even more so than content, reproduces in small the historical context in which it is embedded.

As McNally (2011) shows, monster tales that manifest recurrent anxieties about corporeal dismemberment, zombies, witchcraft and so forth, have tended to flourish in societies where the commodification of labor power is becoming widespread. On this basis, a core objective of this article is to suggest that *Leviathan* constitutes an artistic representation of the forms of market monstrosity that have ensued from the full subsumption of planetary space to capitalist sociotechnical infrastructures. In the first section we develop an engagement with ideas of capital as subject, and discuss their implications for critical urban theory, and especially for UPE. In the second section we argue that *Leviathan* reproduces, in form, the automatic movement of capital accumulation in late capitalism, and that in so doing, its content inadvertently demystifies bourgeois ideological visions of the ocean as a flat and empty space of circulation. Form and content interpenetrate to represent ocean space as lively, dynamic, and volumetric. The third section reflects on how, in stylistic terms, the film transcends representation and *reproduces* with its elaborate technical apparatus the abstract forces that underpin the urbanization of nature. Insofar as the ocean is the 'natural element'

of industry, we try to find the genesis of the alienated forms of social mediation intrinsic to the capital form over the *longue durée* of human activity in the sea. We recur to historical geographies of the ocean to show how ships can be considered early prototypical models for the spatiotemporal logics that capitalism would later develop in the wake of mechanized industry.

Capital as subject and the urbanization of nature

Modern urbanization is contingent upon a robust sociotechnical basis with the capacity to master and maintain the circulating flows of natural resources that sustain the life of cities. Sewage systems, food storage facilities, electric grids, piping networks, and fleets of industrial trawlers, among several other technical artifacts, mediate the metabolism of the urban environment. With the development of more efficient technologies, Swyngedouw (2006) notes how the components of such metabolic flows became radically dissociated from their geographical origin as speed and movement rendered the connections ever more opaque to everyday urban life. As a result, the urban technological networks in the contemporary city tend to be hidden, invisible, rendered underground or encased within walls, conduits, pipes, and electronic waves (Kaika & Swyngedouw, 2000). It is precisely this hidden form, Kaika and Swyngedouw (2000; see also Kaika, 2005) suggest, which renders the tense relationships between nature and the city blurred. The processes of socioecological plunder, dispossession, and the variegated mechanisms of power that underlie the production of such flows remain occluded from quotidian experience.

As urban geographies are modernized and become increasingly interconnected with a wider array of 'operational landscapes' (see Brenner, 2014) across the world, the technological networks that mediate the urbanization of nature not only become more obscure. Most importantly, the violence they exert toward human and nonhuman natures becomes relentlessly intensified and upscaled. From the pristine screen of a smartphone one cannot see the dense imbroglios of logistics infrastructures, poisoned rivers, destroyed mountains, and indentured laborers that further the coltan, gold, and other metals required for its smooth performance. Yet we live in the midst of a technologized reality that is filled with haunted objects of that sort, and which has increasingly come to embody the vital capacities of the human species as they are seized and inverted into the power of an abstract form of life: capital. The relation between such impersonal forms of social mediation and the technological networks that enable the metabolic flows that support the urban system, however, has remained undertheorized in accounts of UPE.

Although there have been recent interventions exploring the role of abstraction in the production of geographical configurations (see e.g. Loftus, 2015; Wilson, 2014), our approach takes these discussions in a new direction by interrogating the material unity between the 'practical truths' of circuits of abstraction and late-capitalist technology. Scholars in the tradition of Western Marxism have been traditionally preoccupied with the violence of abstraction. However, it was Postone (1993/2003), who developed an embodied critique of abstraction through the notion of capital as subject. For Postone (1993/2003), the human life process under capitalist modernity has become increasingly shaped by the imperatives of abstract and de-personalized modalities of power. However, in Postone's idionsyncratic presentation, capital is not an invisible structure which exerts domination over labor, but is rather a sociomaterial form of life with no determinate external telos other than adding

value to itself. This alienated subject, Postone (1993/2003) argues, takes possession of the species powers of humanity, empties them of intentionality, and transforms them into an attribute of a process – i.e. self-valorizing value. Postone's reading and critical reinterpretation of the mature Marxian notion of alienation, according to Starosta (2004), was path-breaking as it pinpointed not only the embodied realities that result from capitalist abstraction, but also their willful attributes.

Under this approach, individual labors are not the recipients of impersonal domination, but rather become their embodied expression. In this historically specific configuration of human exertion, individual labors become 'cellular components of a large, complex and dynamic alienated system that encompasses people and machines' (Postone, 1993/2003, p. 270), and that is exclusively geared toward the goal of production for the sake of production. In this vein, Starosta (2016) suggests that one of Marx's most potent scientific discoveries is that capital is not a thing (machinery or infrastructures), nor an institutional apparatus (the state or a firm), nor even a social grouping (capitalists or workers). In its general determination as self-valorizing value, Starosta (2016) contends, capital is actually a 'materialized social relation' between commodity owners which, in its formally boundless motion of self-expansion 'reproduces the latter as members of antagonistic social classes' (p. 85). In its fully developed form, capital therefore subjects the totality of human experience – senses, creative energies, cognitive potentialities – to the imperatives of an alien force. This alien force is not an 'invisible structure', but it becomes actively embodied in machines, supervisors, cybernetic systems, and debt instruments.

Technology figures as a key determination of the coming of age of capital as subject, because in increasing the productivity of labor and creating material interdependence between humans and technical systems, it hinders the possibility for conscious regulation of the immediate process of production. This leads the Invisible Committee (2015) to argue that power no longer resides in institutions but in infrastructures. The real power structure, according to the Invisible Committee, 'is the material, technological, physical organization of this world' (p. 85). In this purposeful, engineered state of things, they argue, no one is able to see the materialization of power because it is hidden in plain sight, 'in the form of a high-voltage line, a freeway, a traffic circle, a supermarket, or a computer program' (p. 84). Thus, just as Marx described the factory as a mechanical automaton of sorts (see Marx, 1867/1976, p. 548; Postone, 1993/2003, p. 345), it is not difficult to identify similar dynamics at work in the 'autonomous' sociotechnical systems that shape and reshape the urban environment in exploitative and geographically uneven ways. Building upon ideas of capital as subject, Wilson and Bayón (2015) have recently argued that planetary urbanization is but the materialization of a directionally purposed spatial fix of global dimensions. This process has involved the integration of megacities, transnational logistic and transport systems, and the aggressive expansion of commodity frontiers in order to accelerate the circulatory process of the total social capital (see Wilson & Bayón, 2015).

With the material articulation of a genuinely global sphere of accumulation and the increasing commodification of contemporary urban life, the violence intrinsic to the urbanization of nature has been projected against the totality of the Earth's surface. In societies where the commodification of social reproduction is being aggressively extended, McNally (2011) notes, high culture has tended to represent anxieties about alienation in idioms of monstrosity, disfigurement, zombie-labor, and witchery, among others. Mary Shelley's *Frankenstein*, as well as artistic representations of zombies in eighteenth century Haiti and

vampires in present-day Sub-Saharan Africa, McNally (2011) claims, are clearly illustrative of such tropes. Popular culture, as Taussig's (1980/2010) landmark study on peasant transformations in South America demonstrates, has likewise tended to make sense of pervasive proletarianization by means of tropes of supernatural forces and pacts with the devil. Reflecting on *Leviathan*, Steinberg (2015) suggests that the film implicitly appeals to three representations of *Leviathan* as the monstrous: First, the Bible (book of Job specifically); second, Thomas Hobbes' treatise on political philosophy; third, Herman Melville's *Moby Dick*.

Leviathan thus advances a monster tale of sorts to communicate processes and transformations that elude the grasp of everyday urban experience. The scale and intensity of industrial fishing, it should be argued, has evolved in tandem with dramatic dietary shifts where animal protein moves from the periphery of human diets to their center, a phenomenon that Weis (2016) refers to as *meatification*. The sheer scale of contemporary megabarn and aquaculture industrial facilities, Weis argues, has reduced nonhuman animals to an immense corpus of undifferentiated life. With this, the moral worth of the individual animal is disavowed, and thus rising capitalization of meat production has gone hand in hand with increasingly 'monstrous' conditions of animal existence. So familiarized have we become with these unruly and bewitched forms of social mediation, however, that such wretched modes of animal existence are rarely taken for what they are. This is why the set of shock tactics and dislocating procedures that the artwork sets into motion can act as a potent mechanism to dismantle the illusions engendered by commodified existence. As a tale of global capitalism, *Leviathan* tears open the veil of mystification that occludes the plundering of ocean space and the relentless devastation of animal life (in both human and nonhuman form). In the next section we discuss how the film achieves such an accomplishment, and what implications does this bring for understanding oceanic geographies.

The aesthetic of volumetric space

Considered by a film critic to be among the 'oddest, spookiest, most unsettling entities to make it into cinemas in 2013' (Clarke, 2013), *Leviathan* stands out as a highly propositional and iconoclastic work of non-fiction cinema. The film was directed by Lucien Castaing-Taylor and Véréna Paravel as part of a project from the Sensory Ethnography Lab (SEL) at Harvard University. According to its official website, the SEL promotes innovative combinations of ethnography and aesthetics that 'take as their subject the bodily praxis and affective fabric of human and animal existence' (SEL, 2015). Briefly put, *Leviathan* documents the life and times of humans and nonhumans inside an industrial trawler near the coast of New Bedford, US. Once considered the 'whaling capital of the world', New Bedford is the main hub of the US fishing industry, with around 500 vessels sailing from its harbor every month to spend weeks at open sea.[1] Despite being a 'documentary', *Leviathan* not only does away with the typical hallmarks of the genre – such as infographics, themed music and journalistic interventions – but completely abandons linear and propositional narrative. Throughout its 87 min, the viewer is immersed in a display of apparently haphazard and unmediated cinematic data that includes images and sounds of machineries, water, chains, fishes and birds.

For Paravel, the anthropological imperative when making this film was to create an embodied cinematic experience, where basically 'the body is the eye' (NPR, 2013a). For this reason, they strapped cameras to human bodies (of both filmmakers and fishers), masts and other parts of the ship. Much of the footage was thus created without someone actually

looking through the viewfinder of the cameras. As it is usual in certain traditions of postmodernist art (see Bishop, 2012; Dawkins & Loftus, 2013; Jameson, 1991), such filming technique decentered authorship as well as the focus of creative practice, because workers also took part in producing the footage – what Paravel refers to as an *anthropologie partagé*, or shared anthropology (NPR, 2013a). The end result of these techniques is a cinematic experience that communicates sheer sensuousness and fully embodied perception. In that sense, *Leviathan* firmly adheres to the spirit of the SEL's aesthetic rationale, which stands in opposition of traditions of art 'not deeply infused with the real, those of documentary that are derived from broadcast journalism, and those of visual anthropology that mimic the discursive inclinations of the mother discipline' (SEL, 2015).

By foregrounding such density of being and radical anti-foundationalism as an artistic imperative, the film reasserts the 'primitive materialism' that, for Eagleton (1990), is constitutive of the aesthetic. Eagleton adamantly rejects Kantian and neo-Kantian interpretations that expel all sensuousness from the aesthetic representation, leaving only disinterested contemplation. By contrast, a Marxist view of the aesthetic is concerned with the most gross and palpable dimension of the human; it reclaims 'the body's long inarticulate rebellion against the tyranny of the theoretical' (Eagleton, 1990, p. 13). In fact, and although Castaing-Taylor and Paravel do not mention it explicitly, *Leviathan* makes a nod to a new *avant garde* in French cinema that has been referred to as *cinéma du corps* (cinema of the body) or the 'new French extremity'. According to Palmer (2006), French directors like Gaspar Noé, Bruno Dumont and Claire Denis, have developed a form of filmmaking that develops virtuoso aesthetic techniques that stylistically outrun or overwhelm narrative. The immersive formal strategies of *cinéma du corps*, Palmer suggests, 'induce profound, and profoundly alienating, cinematic sensations', with its effects extending 'to become a "pure" cinema of non-representational collage' (2006, p. 179).

If the artwork is an actual product of human labor, Jameson (1971, 2015) contends, its form will necessarily reflect the state of commodity production in its historical period, either directly or through the force of its negation. For Jameson, dialectical criticism is therefore underpinned by the relentless drive to reveal and interpret the network of relations in which the work of art is embedded. Insofar as the artwork has a historicity, Jameson (1971) argues, its realized form (i.e. the technical apparatuses employed in its production) is the key to revealing not only the immanent logic of its content, but also the broader social totality from which it springs. For example, in a later work, Jameson (1991) built upon such dialectical understanding of the artistic substance to argue that postmodern cultural forms were the internal and superstructural expressions of 'multinational' or 'late' variants of capitalism. Certain characteristics of postmodernist art, such as its reliance on pastiche or collage, its depthlessness and its 'schizophrenic' structure, Jameson (1991) argued, resembled the networked, deterritorialized and hyperconnected state of commodity production from the 1970s onwards.

In developing complex and sophisticated stylistic devices that strongly resemble those first introduced by exponents of *cinéma du corps*, and which render a quasi-unmediated encounter with the raw materiality of the ocean and of industrial fishing, *Leviathan* depicts the blind, autonomous, and quasi-organic motion of capital as it extends its rule over human and nonhuman. By contrast to the artistic form of representation of the 'third machine age' described by Jameson, *Leviathan* constitutes an aesthetic testament to a new stage of capitalist development where large-scale industry, for the first time, has become truly planetary.

Thus, far from a depthless and deterritorialized state of things, *Leviathan* enacts a world that has become fully mechanized, and where machines and mechanical apparatuses appear to seamlessly integrate with the organic and inorganic natures of the ocean. In vividly representing the complexities of these technologized mediations, the film inadvertently develops a de-fetishizing critique that challenges conventional understandings of ocean space. Through its novel cinematic form, *Leviathan* upsets the flat, bounded conception of the ocean, rendering ocean space as lively, dynamic and volumetric – very much like the impersonal, yet embodied forms of power with which it interacts.

In contrast to the lived experience of people who engage with ocean space, the conventional imaginaries of the ocean project ocean space as a flat, bounded, two-dimensional surface (Anderson & Peters, 2014; Steinberg, 2001). These scientific and managerial paradigms shape the political and legal structures that govern ocean space. For example, fisheries management organizations, such as the Northwest Atlantic Fisheries Organization, divide the ocean into a grid, each box with a specific letter and number, to rationalize fishery management. As Christopher Bear and Sally Eden argue, these sorts of maps are 'striking for [their] straight lines and 90° angles that bear little relation to the coastline, the sea bed, the distribution and movement of fish, or the fluidity of the water itself' (2008, p. 488). Although the division of ocean space into a grid for management purports to be based on biology of different fish stocks delimitations (Halliday & Pinhorn, 1990, p. 29), they were determined by 'pragmatic considerations' (Bavington, 2010, p. 26) associated with the collection of statistical data. Ultimately, Dean Bavington argues, they were based 'as much on lines of latitude as on complex stock structures, life history traits, or migration routes'. Framing the ocean as flat and two-dimensional reduces the biogeophysical complexity of ocean space, thus making it amenable to the political technologies of territorial control. Making the ocean representable by scientific modalities of rational calculation henceforth constitutes a key moment in its material constitution as a space subordinated to the alienated sociotechnical mechanisms of planetary urbanization.

Tied to the 2D conception of ocean space are two more propositions: ocean space is an empty void and a smooth surface of circulation (Anderson & Peters, 2014; Steinberg, 1999, 2001, 2010). In an analysis of 591 maps printed between 1501 and 1800, Steinberg (2010) documents a radical emptying of ocean space. Once a 'textured' space, home to marine biota and sea monsters (perhaps even Leviathans), by 1700, the ocean was represented as 'materially empty space of points that can be crossed at will' (2010, p. 485) – described poetically by Lewis Carroll as 'a perfect and absolute blank' (Anderson & Peters, 2014; Steinberg, 2001, p. 115). The ocean was the enabling transport medium for the expansion of European commodity frontiers and the emergence of the global capitalist world-system in the long-sixteenth century (Arrighi, 1994; Braudel, 1982; Bunker & Ciccantell, 1998; Moore, 2010; Sloterdijk, 2013). The crisscrossing of people, goods, and capital has fetishized ocean space as a transport surface, as the 'natural media of unrestricted capital flow' (Sloterdijk, 2013, p. 43) or the 'hyperspace of pure circulation' (Steinberg, 2001, p. 162). This ideological representation cannot be understood as dissociated with the actual material constitution of the ocean as the medium through which the subsumption of planetary space to capital is able to assert itself.

Philip Steinberg, in *The Social Construction of the Ocean* (2001), situates this understanding of the ocean described above in the historical development of capitalism. He describes the conventional understanding of the ocean as a shifting compromise between three different

perspectives: the ocean as a space of resources; the ocean as a transport surface; and the ocean as 'force-field' for the projection of military power (2001, pp. 11–20). Consequently, he examines the ideological history of ocean space over the *longue durée*, analyzing the shifting spatial conceptions and legal regimes of ocean space under evolving political economic regimes. For example, he argues that merchant capitalism, predicated on long-distance transportation and imperial conquest, framed the ocean as a military force-field and as non-territorial space of transport, rejecting the sovereign possession of ocean space (see Chapter 3). Under industrial capitalism, which was predicated on fixed capital investments in specific production and consumption places, the deep sea was constructed as a great asocial void, whereas the coastal sea was perceived as an arena for potential capital investment (see Chapter 4). This era developed a legal regime that ensured the non-territoriality of the deep sea while providing exclusive state possession of coastal waters. Rather than resolving this contradiction, what Steinberg describes as 'postmodern capitalism' has intensified the legal conflict between the ocean as a free space transport surface as the ocean as a territorial place for capital investment (see Chapter 5).

Recent work in the human geographies of the ocean has begun challenging the conventional approaches to studying our 'water world' (Anderson & Peters, 2014; Lambert, Martins, & Ogborn, 2006; Merriman, 2016; Peters, 2010). Ocean space must be understood as material, immanent, and almost sublimely dynamic. Drawing on posthumanist approaches in social theory, recent work has begun framing the ocean as a lively or inventive actor in social processes, an active agent with the potential to shape, not just be shaped by, reality (Bear, 2013; Bremner, 2015; Cardwell & Thornton, 2015; Helmreich, 2009; Lehman, 2013a; Peters, 2012). Jessica Lehman, for example, examines the ocean as an everyday actor shaping the lives of coastal people and the trajectories of armed conflict and 'natural' disaster in Eastern Sri Lanka, one that crisscrosses natural and political forces in a relational way (Lehman, 2013a). In addition to this strand of work, geographers inspired by Peter Sloterdijk's elemental philosophy have sought to move beyond the terrestrial bias in Western thought (Adey, 2015; Anderson, 2012; Elden, 2013; McCormack, 2015; Sloterdijk, 2011; Squire, 2016a; ten Bos 2009). Humans, René ten Bos argues, drawing on Sloterdijk, are 'ontological amphibian[s]' (2009, p. 74); they are not 'mono-elementary', but constantly switch between elements. Water, and by extension the ocean, thus becomes a central element to rethink human relations. Although Helmreich (2011) cautions against using the ocean as a 'theory machine', thinking through the materiality of ocean space has offered a powerful challenge to the conventional understandings of the ocean.

Accepting the ocean's material liveliness and thinking 'through' water (Krause & Strang, 2016), moreover, forces one to abandon the horizontal bias of terrestrial thought. The ocean, in other words, must be understood as three-dimensional and *volumetric* (Lehman, 2013b; Peters, 2012; Peters & Steinberg, 2014; Squire, 2016a, 2016b; Steinberg & Peters, 2015). Following Elden's (2013) provocation, this does not entail substituting the vertical axis for the horizontal as the object of analysis. Rather, this perspective takes the 'fully voluminous or spherical qualities of space' (Steinberg & Peters, 2015, p. 251) into account: 'reach, instability, force, resistance, incline, depth and matter alongside the simply vertical' (Elden, 2013, p. 45). Through its novel filming techniques, *Leviathan* perfectly captures the volumetric nature of fishing and the ocean: the camera moves obliquely below the surface of the water, and around and above the deck. Steinberg (2013) critiques most Western accounts of life at sea for failing to engage with aqueous nature of the ocean. For example, 'Venturing into

Gilroy's Black Atlantic', he gripes, 'one never gets wet' (2013, p. 158). The same cannot be said for *Leviathan*; everything and everyone is wet. The ocean is *fluid,* and the fact that this conclusion is novel, not tautological, demonstrates the myopia of conventional approaches. In contrast to most oceanic documentaries, which portray the ocean as flat and dematerialized (Steinberg, 2015), *Leviathan*'s stylistic assertiveness foregrounds the volumetric, dynamic, and material properties of ocean space. The immersive, disorienting haptic view of the experience of industrial fishing and the vertical movement of waves and animals and nets force the viewer to radically confront their horizontal biases and experience the fluid dynamism of ocean space.

Philip Steinberg and Kimberley Peters, in a recent paper, argue that the ocean – as 'indisputably voluminous, stubbornly material, and unmistakably undergoing continual reformation' (2015, p. 248) – is the ideal spatial foundation for reinvigorating human geography. They propose a 'wet ontology' to 'reinvigorate, redirect, and reshape debates that are all too often restricted by terrestrial limits'. Following Steinberg and Peters' (2015) provocation, the next section is therefore intended to decenter the territorial basis of the urbanization of nature, shifting the analytical focus toward the ocean. The aim is not only to depict the sea as an extension of the forms of violence, market monstrosity, and ecological destruction that take place in territorial realms of social production. Because the sea has been considered the 'natural element' of industry, we also explore historical geographies of the ocean to reveal prototypical iterations of the varieties of social mediation that would later take the form of the 'mechanical automatons' that Marx vividly depicted throughout his mature social theory.

A disruptive fable of the ocean

At the core of *Leviathan's* cinematic and political agenda is a powerful message about the sociometabolic underpinnings of large-scale industrial fishing. Questions of violence and commodity fetishism are raised by the film's long and excruciating shots of sea creatures of all sorts being slashed and brutalized as part of the industrial routine. The viewer is repeatedly confronted with up-close shots of dismembered animals, puddles of blood splattered across the deck of the ship, and shots of a mixture of seawater, entrails and blood pouring off the deck into the ocean. Capital truly does come 'dripping from head to toe, from every pore, with blood and dirt' (Marx, 1867/1976, p. 926). Perhaps what makes these shots even more disturbing and displeasing for the viewer is the fact that such displays of unflinching violence and ruthlessness are performed by deeply alienated workers, with 'every sailor a butcher' (Melville, 1851/2013, p. 319). Paraphrasing Marx, McNally (2011, p. 141) suggests that like zombies, living labor under capitalism becomes subservient to and led by an alien will and alien intelligence.

And indeed, assembly lines, factories, and computerized production systems, among other morphological configurations of industrial technology, McNally (2011, p. 142) argues, 'take a life of their own, directing the movements of labor, controlling workers as if they were merely inorganic parts of a giant apparatus'. *Leviathan*'s perhaps most important contribution is the depiction of such abstract yet deeply corporeal powers as they possess workers and squander nonhuman creatures. Although Paravel does not make any explicit reference to industrial capitalism, she argues in an interview (*Leviathan* 2013) that they decided to name the film *Leviathan* after the biblical monster, because it is described as an abstract, faceless

and overwhelming entity. For Jameson (1971), there is a certain ambiguity to the artistic substance, as the boundary between form and content is permanently transgressed, with form usually becoming nothing but the projection of content (1971, p. 402).[2] In fact, it could even be argued that in stylistic terms, the *'shared anthropology'* ethos that inspires the technical apparatus of the film achieves what Marx (1939/1973, p. 100) considered the centerpiece of the dialectical method: Reproducing with thought the inner motion of real economic forms.

For Stephanie Zacharek, a film critic at NPR, the camera 'lingers interminably' on the suffering of sea creatures, and the lens zooms in too much on 'weather-worn and blood-spattered' fishers doing their deeds. In sum, Zacharek claims, *Leviathan* 'exploits the real-life suffering of those fish for effect', with its long takes amounting to a 'thinly disguised shock tactic' (NPR, 2013b). In short, the film grasps the very real movements by which the quasi-volitional violence of capital becomes materialized in human bodies, nets, machines, blades, and other instruments of production. Because the cameras were not purposefully maneuvered by an external observer or 'film director', *Leviathan* offers what is perhaps the most possible 'bare-bone' depiction of how the forces of production take a life of their own, exerting their rule over organic and inorganic nature. In the hyper-technological environment of the fishing trawler, even the slightest motion seems to be following a carefully predefined choreography that involves the concerted actions of organisms and machines. It is precisely for this reason that McNally (2011) claims that the invisible powers of market forces are at the same time *fantastically real*. They constitute 'horrifying aspects of a strange and bewildering world that represents itself as normal, natural, unchangeable' (p. 7). As Eagleton (1990) notes, the ultimate binding force of bourgeois society will be habits, pieties, sentiments, and all those compulsions that are taken as 'natural' impulses. This, Eagleton argues,

> … is equivalent to saying that power in such an order has become *aestheticized*. It is at one with the body's spontaneous impulses, entwined with sensibility and the affections, lived out in unreflective custom. Power is now inscribed in the minutiae of subjective experience, and the fissure between abstract duty and pleasurable inclination is accordingly healed. (p. 20)

As the process by which nature is transformed into urbanization becomes increasingly determined by the compulsions and technological mediations enacted by capital as subject, it starts to supersede a mere insular/regional scope and acquires a systemic character. Just as the sewage and piping networks that feed the life of cities, spaces of resource extraction (which include the geographies of industrial fishing) have also been hidden from view, and therefore the fetishism of urban infrastructural networks initially described by Kaika and Swyngedouw (2000) has been ratcheted up to the global level in the neoliberal era (see Arboleda, 2016). This leads Wilson and Bayón (2015) to argue that planetary urbanization is but the expression of the subordination of global space to an increasingly comprehensive system of surplus value production. And indeed, notions of the city as a bounded and self-contained spatial unit, however, have become heavily destabilized under a new round of worldwide sociospatial restructuring characterized by the densification of inter-metropolitan infrastructural networks and the operationalization of 'wilderness' areas (like the ocean) to serve growth, logistics, tourism and industrial imperatives (Brenner, 2014).

Considering that maritime operational landscapes are sometimes outside of the grasp of legal and social mechanisms of accountability and control, capital-intensive modalities of the urbanization of nature are likely to be far more problematic on the ocean than on firm land. Also, and just as the ocean extends far beyond itself in many ways, the sheer

geographical unevenness of the city transcends its territorial basis and aggressively colonizes ocean space. In one scene of *Leviathan*, one of the workers is portrayed alone and falling asleep in what looks like the derelict and rundown cabin of the ship while watching a television show. This kind of desolation and dereliction cannot but be reminiscent of the type of urban marginality that, for Wacquant (2010), is constitutive of what he terms the 'hyperghetto' – a place where daily experience of material dilapidation and ethnoracial seclusion translates into the corrosion of the self and the erosion of interpersonal ties. However, if the everyday environment of *Leviathan's* ship seems precarious and violent, one only needs to pause and reflect for a moment to realize that New Bedford, Massachusetts is actually where the 'privileged' part of the industry is located. By watching *Leviathan*, we only see a fragment of that unrepresentable global totality that is the planetary urban system.

According to Jameson (1991), the phenomenological experience of the individual subject, which is the raw material of the work of art, becomes limited to a tiny corner of the social whole (in this case, to the fishing boat in the North Atlantic). In a world that is utterly dominated by a totalizing political-economic system geared toward the universalization of the commodity form, says Jameson (1991), the truth of that experience no longer coincides with that specific place. If we engage in a careful process of mediation that starts from the concrete experience of the work of art, as Jameson would have us do, we are able to overcome fragmentation and see the ship bound up with global networks of capitalist production and consumption that lead to places where violence and suffering are taken to unimaginable realms. In a highly controversial documentary published in 2014, *The Guardian* revealed how the complex and transnational commodity chain that supplies supermarkets of the United Kingdom and the US with low-priced shrimp from Thailand is highly dependent on human trafficking, slave labor and hyper-exploitative social relations.[3] The documentary shows how summary executions, abuse, starvation, and many forms of torture constitute the everyday reality of an invisible workforce that is sold to be enslaved on illegal fishing ships – the underbelly of the same multibillion dollar industry that fills supermarket aisles and refrigerators everywhere with frozen seafood in neat packages.

Despite the apparently obvious and trivial aspect of the commodity – and is there anything more trivial than a frozen fish stick? – Marx (1867/1976) reminds us that it is a very strange thing that abounds with quirks, secrets, and 'metaphysical subtleties' (p. 163). *Leviathan* is therefore quite successful in reflecting, through the force of negation, how the seemingly banal and everyday consumer goods that populate the fabric of everyday urban existence are washed away from their origins in the bloodshed, monstrosity and alienated labor of the fishing ship. It is for this reason that McNally (2011) forcefully claims that critical theory needs an alliance with the fantastic. Mining popular and artistic imaginaries riddled with bewitched accumulation, vampires, and malevolent corporations that abduct and dissect people, 'critical theory needs to construct shock-effects that allow us to see the monstrous dislocations at the heart of commodified existence' (pp. 7, 8).

As scholars in the tradition of UPE have noted, the urbanization of nature is far from a fully complete process, because the biophysical world is essentially expressive and recalcitrant. Governing the nature of the city, Kaika (2004) argues, is henceforth a process riddled with complexities. Sometimes occluded metabolic flows erupt in the form of an apartment block explosion, a dam percolating poisonous chemicals, or an oil spillage in the ocean, and put into question the normalized character of the commodification and fetishization of nature (Arboleda, 2016; Kaika, 2004). In *Leviathan,* the ocean is also depicted as a recalcitrant

entity that is unyielding, mysterious and even menacing. Yet, as opposed to blockbuster films where apocalyptic waves engulf whole cities, the monstrosity of the ocean unfolds in the subtext of the aesthetic representation, and is as invisible as the de-personalized forms of power that flow through the fishing trawler. In this sense, the film is also quite successful in encapsulating increasing anxieties about the potential devastation that a plundered, acidified ocean could inflict upon human civilizations. It is difficult to fully grasp the profound changes in the ocean's composition caused by human intervention. Even the 'Texas-sized garbage patch' in the Pacific Ocean is almost undetectable: comprised of miniscule, mostly microscopic, plastic waste floating in the water column, not a solid island of waste, puncturing the water's surface (Goldstein, Marci, & Lanna, 2012; Liboiron, 2016).

Since the beginnings of commercial maritime extraction in the eleventh century, fish have declined in terms of abundance and size. These trends have been accelerated since the emergence of industrial fishing in the mid-nineteenth century. Marine ecologists Myers and Worm (2003) estimate that biomass levels of predatory species have declined by 90% from just preindustrial levels. Over the past 200 years, the world ocean has absorbed about half of the CO_2 released by humans (Raven et al., 2005). The increased absorption of CO_2 is reshaping the chemistry of the world-ocean, raising both its temperature and acidity. This affects marine life, but also reduces the ocean's capability to act as a carbon sink, further accelerating climate change (Longo, Clausen, & Clark, 2015). Scientists have recently discovered that plastic pollution serves as a novel ecological habitat for diverse forms of microbial life, which they dub the 'Plastisphere' (Zettler, Mincer, & Amaral-Zettler, 2013). 'Plastification' proceeds alongside acidification, adding new, unpredictable variables to an already puzzling system. The reworking of the ocean through the toxic triad of overfishing, climate change and pollution is profound, and accelerating.

In addition to destruction under the surface, violence permeates human uses of the ocean as a military 'force-field' (Cowen, 2014; Steinberg, 2001, p. 16) and a historical transport surface. The ocean has always been a key site for the projection of state power and military violence, but with the introduction of long-distance trade and imperialism in the fifteenth century, controlling ocean space gained a new importance (Black, 2009; Cipolla, 1965; Steinberg, 2001). It is not a coincidence that the measuring, surveying and mapping of ocean space achieved a new prominence in this period. 'Knowledge of the earth's surface', writes Sloterdijk, 'was power – power in its most concrete and profitable form' (2013, p. 45), and 'new oceanographic insights amounted to arms deliveries for the battle against competitors in the open space'. In addition to the projection of state territorial power, the ocean and ships were essential for the early rise of capitalism. This was a profoundly violent process, dependent upon the conquest of new lands (via genocide) for mineral extraction and market-oriented agriculture, and the enslavement and redistribution of millions of people to work these new industries. However, rather than an embarrassing vignette in the 'deep history' of capital, these violent processes helped form the basis of capitalism's social relations. For example, the ship was perhaps the earliest working prototype of the modern factory (Linebaugh & Rediker, 2000, p. 150). As Marcus Rediker argues, 'The sailors employed mechanical equipment in concert, under harsh discipline and close supervision, all in exchange for a money wage in an international labor market' (2007, p. 45). Capitalism on land thus bears a definitive watery imprint.

A central contradiction in the classic extractive industries is that the stunning landscape transformations of large-scale extraction can undermine its future expansion (Bridge, 2000,

pp. 244–246), famously dubbed the 'double movement' by Polanyi (1944/1957, p. 76). The environmental impacts of mining are manifest, often described as an open wound or sore. The sight of a clear-cut forest – a glaring geometrical absence in the midst of dense forest cover – is hard to miss. Yet, the profound changes occurring in the ocean are hidden below the surface. Without some sort of scientific or political mediating, they are hard to apprehend; the 'double movement' is hampered. The material properties of the ocean surface and the spatially diffuse nature of maritime production helps mask the destructive social metabolism at work in the world-ocean. Paul Virilio beautifully captures the ubiquitous first impression of ocean space: 'The expanse of the oceanic horizon was truly surprising: could such a vast space be void of the slightest clutter? Here was the real surprise: in length, breadth, and depth the oceanic landscape had been wiped clean' (1994, p. 10). 'Even the sky was divided up by clouds', he concludes, 'but the sea seemed empty in contrast'. The ocean's flat, empty *appearance* has profound political effects. By masking the staggering scale of destruction unleashed on oceanic environments over the course of human activity, the ocean retains its asocial, 'pre-modern' appearance.

Given the scale of destruction taking place in the ocean, and the pervasive veils that obfuscate it, critical theory needs to be fundamentally concerned with the politicization of ocean space. According to Postone (1993/2003, p. 31, the determination of capital as alienated subject would seem to deny the history-making practices of humans. However, in fostering unprecedented material interdependence among living systems and inorganic nature, global capitalism has also opened the opportunity for humans to appropriate what they had constituted collectively in alienated form. An inquiry into revolutionary subjectivity and political change is beyond the remit of this paper. However, it is worth stressing that a genuinely emancipatory political project can only be more-than-human (see Arboleda, in press). This means that not only it will emerge from the vital energies unleashed by interactions between humans and technical systems of production, but that it will be fundamentally concerned with the liberation of nonhuman life and inorganic nature. In the words of McNally (2011),

> Dialectical reversal means not only the political victory of the oppressed; it also means de-reification, the reanimation of the relations among things and persons via the liberation of things, as well as persons, from circuits of abstraction. (p. 267)

Conclusion

With this paper, an attempt has been made to break the veil of mystification that obfuscates the manifold metabolic flows between the ocean and the modern urban environment. In Herman Melville's *Moby Dick,* Ishmael states, 'nowhere in all America will you find more patrician-like houses; parks and gardens more opulent, than in New Bedford' (1851/2013, p. 50). If one is questioning the source of this wealth, Ishmael advises, 'Go and gaze upon the iron emblematical harpoons round yonder lofty mansion, and your question will be answered' (1851/2013, p. 51). 'Yes', he continues, 'all these brave houses and flowery gardens came from the Atlantic, Pacific, and Indian oceans, One and all they were harpooned and dragged up hither from the bottom of the sea'. Brechin (1999) argues that urban landscapes can be understood as 'inverted mines', as 'natural wealth excavated from the depth and piled up on the surface' (Bridge, 2009, p. 45). Urban landscapes, as Melville reminds us, must also be

understood as 'inverted oceans', harpooned up from the watery depths – a product of capital's profoundly violent social metabolism.

We have argued that *Leviathan,* by means of an elaborate set of stylistic devices and shock tactics, articulates a very vivid representation of the violence congealed in some of the objects and practices that populate the fabric of everyday urban life, and which bear the marks of an agonizing waterworld. In its depiction of a fully mechanized, engineered milieu in the open sea, its content expresses the underlying tensions and anxieties of an era where the technological basis of capitalism extends aggressively beyond its traditional heartland and threatens to colonize the entirety of the Earth's surface. In contrast to the harpoons and rudimentary nets used by Ishmael and his contemporaries, the cutting-edge technical systems of the global fishing fleet seriously threaten to fully collapse all fishing stocks worldwide (Food and Agriculture Organization of the United Nations [FAO], 2014). Also, it is well known that the fishing industry has become a breeding ground for human trafficking, indentured labor, and all forms of torture and abuse. In previous phases of capitalist development, anxieties such as these have tended to be represented in art as well as popular culture in idioms of monstrosity, supernatural forces, corporeal dismemberment, pacts with the devil, and zombification, among others (McNally, 2011; Taussig, 1980/2010). *Leviathan* is thus the monster tale that corresponds to the era of planetary urbanization, where sophisticated industrial systems have been furthered to subordinate the totality of planetary space to the abstract imperatives of exchange value.

In recasting the ocean as a lively system where the mechanical, the organic, the human and the nonhuman intermingle in complex configurations, we have attempted to reveal the more-than-human agencies at work in the production of planetary natures. However, our reading departs substantially from the depoliticized and ahistorical approaches of so-called 'new materialist' thinking, where the class-based, contradictory and inherently antagonistic dimensions of contemporary sociotechnical systems are blissfully ignored (for a critique, see Arboleda, in press). To make sense of the technologized mediations and materializations of power that give sustenance to the urbanization of nature, we have advanced the notion of 'capital as subject', which illuminates the ways in which both living labors and instruments of production become subsumed by the formally boundless motion of self-valorizing value. Far from a descent into crude 'structuralism', the notion of capital as subject is aimed at illustrating the purposeful, impersonal, and quasi-organic features of the automatic subject that has come to rule over the materiality of social life. However, in advancing its grip over the life of the human species, capital has also created unprecedented material interdependence between individuals. This, it should be argued, enables the possibility for a different mode of universality that can restore what has been plundered by the alienated powers of humanity.

With the above in mind, we consider this paper an invitation to design new urban imaginations and to make oceanic geographies visible. We consider *Leviathan* to be a productive starting point to extrapolate the lived dimensions of ecological degradation and precarious labor at sea to the broader structural coordinates of global sociospatial transformation. As Jameson (1991) argues, an aesthetic of cognitive mapping that shifts dialectically from microprocesses to macroforces is an integral part of any socialist political project. The ocean possibly constitutes one of the most uncharted frontiers for the field of urban studies, but making visible what happens in its troubled currents and waters should be regarded a key priority for the research agenda of UPE. 'Society', Lefebvre reminds us, 'has been completely

urbanized' (1970/2003, p. 1) – a truly planetary process, extending beyond the city to include the entire surface of the globe. It is important to remember that the ocean covers almost three-quarters of Earth's surface, so the process of generalized urbanization cannot be fully grasped without considering the manifold layers of industrial and socioecological transformation taking place beyond firm land.

Notes

1. Official film trailer (https://www.youtube.com/watch?v=U2wNiJt-I6U).
2. For Jameson (1971), content is never initially contingent, but is rather meaningful from the outset, and encompasses the very components of our concrete social life itself, such as words, objects, aspirations, people, places, and activities –such as industrial fishing.
3. 'Globalised slavery: how big supermarkets are selling prawns in supply chain fed by slave labour', published by *The Guardian* on June of 2014: http://www.theguardian.com/global-development/video/2014/jun/10/slavery-supermarket-supply-trail-prawns-video. A recent *New York Times* story documents similar abuses in the canned pet food and animal feed supply chain (Urbina, 2015). Escaped workers described 'horrific violence: the sick cast overboard, the defiant beheaded, the insubordinate sealed for days below deck in a dark, fetid fishing hold'.

Acknowledgements

This paper greatly benefitted from conversations with Neil Brenner, Melania García, Ghazal Jafari, and Mariano Gómez-Luque, as well as from the very insightful comments of two anonymous reviewers at *Social & Cultural Geography*. We also thank Julie De Los Reyes for organizing the screening of the film. Any errors are of course our own.

Disclosure statement

No potential conflict of interest was reported by the authors.

References

Adey, P. (2015). Air's affinities: Geopolitics, chemical affect and the force of the elemental. *Dialogues in Human Geography, 5*, 54–75.

Anderson, J. (2012). Relational places: The surfed wave as assemblage and convergence. *Environment and Planning D: Society and Space, 30*, 570–587.

Anderson, J., & Peters, K. (2014). 'A perfect and absolute blank': Human geographies of water worlds. In J. Anderson & K. Peters (Eds.), *Water worlds: Human geographies of the ocean* (pp. 3–19). Farnham: Ashgate.

Arboleda, M. (2016). In the nature of the non-city: Expanded infrastructural networks and the political ecology of planetary urbanisation. *Antipode, 48*, 233–251.

Arboleda, M. (in press). Revitalizing science and technology studies: A Marxian critique of more-than-human geographies. *Environment and Planning D: Society and Space*. Published online ahead of print 22 August, 2016.

Arrighi, G. (1994). *The long twentieth century: Money, power, and the origins of our times*. London: Verso.

Bavington, D. (2010). *Managed annihilation: An unnatural history of the Newfoundland cod collapse*. Vancouver: UBC Press.

ten Bos, R. (2009). Towards an amphibious anthropology: Water and Peter Sloterdijk. *Environment and Planning D: Society and Space, 27*, 73–86. doi:10.1068/d13607.

Bear, C. (2013). Assembling the sea: Materiality, movement and regulatory practices in the Cardigan Bay scallop fishery. *Cultural Geographies, 20*, 21–41.

Bear, C., & Eden, S. (2008). Making space for fish: The regional, network and fluid spaces of fisheries certification. *Social and Cultural Geography, 9*, 487–504.
Bishop, C. (2012). *Artificial hells: Participatory art and the politics of spectatorship*. London: Verso.
Black, J. (2009). *Naval power: A history of warfare and the sea from 1500 onwards*. New York, NY: Palgrave MacMillan.
Braudel, F. (1982). *Civilization and capitalism: The wheels of commerce*. (S. Reynolds, Trans.). New York, NY: Harper & Row.
Brechin, G. (1999). *Imperial San Francisco: Urban power, earthly ruin*. Berkeley: University of California Press.
Bremner, L. (2015). Fluid ontologies in the search for MH370. *Journal of the Indian Ocean Region, 11*, 8–29. doi: 10.1080/19480881.2014.985899
Brenner, N. (2014). Introduction: Urban theory without an outside. In N. Brenner (Ed.), *Implosions/explosions: Towards a study of planetary urbanization* (pp. 14–35). Berlin: Jovis.
Brenner, N., & Katsikis, N. (2014). Is the Mediterranean urban? In N. Brenner (Ed.), *Implosions/explosions: Towards a study of planetary urbanization* (pp. 428–459). Berlin: Jovis.
Bridge, G. (2000). The social regulation of resource access and environmental impact: Production, nature and contradiction in the US copper industry. *Geoforum, 31*, 237–256.
Bridge, G. (2009). The hole world: Scales and spaces of extraction. *New Geographies, 2*, 243–248.
Bunker, S., & Ciccantell, P. (1998). Introduction: Space, transport, and world-systems theory. In S. Bunker & P. Ciccantell (Eds.), *Space and transport in the world-system* (pp. 1–15). Westport, CT: Glenwood Press.
Cardwell, E., & Thornton, T. F. (2015). The fisherly imagination: The promise of geographical approaches to marine management. *Geoforum, 64*, 157–167.
Cipolla, C. M. (1965). *Guns, sails, and empires: Technological innovation and the early phases of European expansion, 1400–1700*. New York, NY: Pantheon Books.
Clarke, D. (2013, November 29). Review of *Leviathan*. L. Castaing-Taylor & V. Paravel (Director). *The Irish Times*. Retrieved March 1, 2015, from http://www.irishtimes.com/culture/film/leviathan-1.1610469
Cowen, D. (2014). *The deadly life of logistics: Mapping violence in global trade*. Minneapolis, MN: University of Minnesota Press.
Dawkins, A., & Loftus, A. (2013). The senses as direct theoreticians in practice. *Transactions of the Institute of British Geographers, 38*, 665–677.
Eagleton, T. (1990). *The ideology of the aesthetic*. London: Blackwell.
Elden, S. (2013). Secure the volume: Vertical geopolitics and the depth of power. *Political Geography, 34*, 3435–3451.
Food and Agriculture Organization of the United Nations. (2014). *The state of world fisheries and aquaculture 2014*. Rome: World Bank.
Goldstein, M., Marci, R., & Lanna, C. (2012). Increased oceanic microplastic debris enhances oviposition in an endemic pelagic insect. *Biology Letters, 8*, 817–820.
Goonewardena, K. (2005). The urban sensorium: Space, ideology and the aestheticization of politics. *Antipode, 37*, 46–71.
Halliday, R. G., & Pinhorn, A. T. (1990). The delimitation of fishing areas in the Northwest Atlantic. *Journal of Northwest Atlantic Fishery Science, 10*, 1–51.
Helmreich, S. (2009). *Alien ocean: Anthropological voyages in microbial seas*. Berkeley: University of California Press.
Helmreich, S. (2011). Nature/culture/seawater. *American Anthropologist, 113*, 132–144.
Heynen, N., Kaika, M., & Swyngedouw, E. (Eds.). (2006). *In the nature of cities: Urban political ecology and the nature of urban metabolisms*. New York, NY: Routledge.
Invisible Committee. (2015). *To our friends*. Los Angeles, CA: Semiotext(e).
Iñigo Carrera, J. (2003/2013). *El Capital: Razón Histórica, Sujeto Revolucionario y Conciencia* [Capital: Historical reason, revolutionary subject and consciousness]. Buenos Aires: Imago Mundi.
Jameson, F. (1971). *Marxism and form*. Princeton, NJ: Princeton University Press.
Jameson, F. (1991). *Postmodernism, or, the cultural logic of late capitalism*. London: Verso.
Jameson, F. (2015). *The ancients and the postmoderns: On the historicity of forms*. London: Verso.

Kaika, M. (2004). Interrogating the geographies of the familiar: Domesticating nature and constructing the autonomy of the modern home. *International Journal of Urban and Regional Research, 28*, 265–286.
Kaika, M. (2005). *City of flows*. New York, NY: Routledge.
Kaika, M., & Swyngedouw, E. (2000). Fetishizing the modern city: The phantasmagoria of urban technological networks. *International Journal of Urban and Regional Research, 24*, 120–138.
Krause, F., & Strang, V. (2016). Thinking relationships through water. *Society & Natural Resources, 29*, 633–638.
Lambert, D., Martins, L., & Ogborn, M. (2006). Currents, visions and voyages: Historical geographies of the sea. *Journal of Historical Geography, 32*, 479–493.
Lefebvre, H. (1970/2003). *The urban revolution*. Minneapolis, MN: University of Minnesota Press.
Lehman, J. S. (2013). Relating to the sea: Enlivening the ocean as an actor in Eastern Sri Lanka. *Environment and Planning D: Society and Space, 31*, 485–501.
Lehman, J. S. (2013b). Volumes beyond volumetrics: A response to Simon Dalby's 'The Geopolitics of Climate Change'. *Political Geography, 37*, 51–52.
Video Cultural Services French Embassy. (2013). *Leviathan*. Retrieved February 22, 2015, from https://www.youtube.com/watch?v=QlLIsZSEnfI
Liboiron, M. (2016). Redefining pollution and action: The matter of plastics. *Journal of Material Culture, 21*, 87–110.
Loftus, A. (2015). Violent geographical abstractions. *Environment and Planning D: Society and Space, 33*, 366–381.
Longo, S., Clausen, B., & Clark, B. (2015). *The tragedy of the commodity: Oceans, fisheries, and aquaculture*. New Brunswick, NJ: Rutgers University Press.
Linebaugh, P., & Rediker, M. (2000). *The many-headed hydra: Sailors, slaves, commoners, and the hidden history of the revolutionary Atlantic*. Boston, MA: Beacon Press.
Marx, K. (1867/1976). *Capital a critique of political economy, Vol. 1*. New York, NY: Penguin Books.
Marx, K. (1939/1973). *Grundrisse: Foundations of the critique of political economy*. New York, NY: Penguin Books.
McCormack, D. (2015). Envelopment, exposure, and the allure of becoming elemental. *Dialogues in Human Geography, 5*, 85–89.
McNally, D. (2011). *Monsters of the market: Zombies, vampires and global capitalism*. Chicago, IL: Haymarket Books.
McNally, D. (2014). The blood of the commonwealth: War, the state, and the making of world money. *Historical Materialism, 22*, 3–32.
Melville, H. (1851/2013). *Moby Dick*. New York, NY: Signet Classics.
Merriman, P. (2016). Mobilities II: Cruising. *Progress in Human Geography, 40*, 555–564.
Mezzadra, S., & Neilson, B. (2013). *Border as method, or, the multiplication of labor*. Durham, NC: Duke University Press.
Moore, J. (2010). 'Amsterdam is Standing on Norway' part I: The Alchemy of capital, empire and nature in the diaspora of silver, 1545–1648. *Journal of Agrarian Change, 10*, 33–68.
Myers, R. A., & Worm, B. (2003). Rapid worldwide depletion of predatory fish communities. *Nature, 423*, 280–283.
NPR. (2013a). *'Leviathan': The fishing life, from 360 degrees*. Retrieved February 22, 2015, from http://www.npr.org/2013/03/16/174404938/leviathan-the-fishing-life-from-360-degrees
NPR. (2013b, February 28). *Leviathan: Of fish and men, without chats*. Retrieved February 27, 2015, from http://www.npr.org/2013/02/28/172981501/leviathan-of-fish-and-men-without-chats
Palmer, T. (2006). Style and sensation in the contemporary French cinema of the body. *Journal of Film and Video, 58*, 22–32.
Peters, K. (2010). Future promises for contemporary social and cultural geographies of the sea. *Geography Compass, 4*, 1260–1272.
Peters, K. (2012). Manipulating material hydro-worlds: Rethinking human and more-than-human relationality through offshore radio piracy. *Environment and Planning A, 44*, 1241–1254.
Peters, K., & Steinberg, P. (2014). Volume and vision: Fluid frames of thinking ocean space. *Harvard Design Magazine, 35*, 124–129.

Polanyi, K. (1944/1957). *The great transformation*. Boston, MA: Beacon Press.
Postone, M. (1993/2003). *Time, labor, and social domination: A reinterpretation of Marx's critical theory*. Cambridge: Cambridge University Press.
Raven, J., Caldeira, K., Elderfield, H., Hoegh-Guldberg, O., Liss, P., Riebesell, U., … Watson, A. (2005). *Acidification due to increasing carbon dioxide*. Report prepared for the Royal Society, London.
Rediker, M. (2007). *The slave ship: A human history*. London: Penguin Books.
SEL. (2015). *Sensory ethnography lab*. Retrieved February 15, 2015, from http://sel.fas.harvard.edu/
Sloterdijk, P. (2011). *Bubbles. Spheres I*. (W. Hoban, Trans.). Cambridge: The MIT Press.
Sloterdijk, P. (2013). *In the world interior of capital*. Cambridge, MA: Polity.
Squire, R. (2016a). Rock, water, air and fire: Foregrounding the elements in the Gibraltar–Spain dispute. *Environment and Planning D: Society and Space, 34*, 545–563.
Squire, R. (2016b). Immersive terrain: The US Navy, Sealab and Cold War undersea geopolitics. *Area, 48*, 332–338.
Starosta, G. (2004). Editorial introduction: Rethinking Marx's mature social theory. *Historical Materialism, 12*, 43–52.
Starosta, G. (2015). *Marx's capital, method and revolutionary subjectivity*. Boston, MA: Brill.
Starosta, G. (2016). Revisiting the new international division of labour thesis. In G. Charnock & G. Starosta (Eds.), *The new international division of labour: Global transformation and uneven development* (pp. 79–104). London: Palgrave McMillan.
Steinberg, P. (1999). The maritime mystique: Sustainable development, capital mobility, and nostalgia in the world ocean. *Environment and Planning D: Society and Space, 17*, 403–426.
Steinberg, P. (2001). *The social construction of the ocean*. Cambridge: Cambridge University Press.
Steinberg, P. (2010). Sovereignty. Sovereignty, territory, and the mapping of mobility: A view from the outside. *Annals of the Association of American Geographers, 99*, 467–495.
Steinberg, P. (2013). Of other seas: Metaphors and materialities in maritime regions. *Atlantic Studies, 10*, 156–169.
Steinberg, P. (2015). Non-linearity in the ocean documentary. In R. Van Munster & C. Sylvest (Eds.), *Documenting world politics: A critical companion to IR and non-fiction film* (pp. 78–94). London: Routledge.
Steinberg, P., & Peters, K. (2015). Wet ontologies, fluid spaces: Giving depth to volume through oceanic thinking. *Environment and Planning D: Society and Space., 33*, 247–264.
Swyngedouw, E. (2004). *Social power and the urbanization of water*. New York, NY: Oxford University Press.
Swyngedouw, E. (2006). Circulations and metabolisms: (Hybrid) natures and (cyborg) cities. *Science as Culture, 15*, 105–121.
Taussig, Michael (1980/2010). *The devil and commodity fetishism in South America*. Chapel Hill: University of North Carolina Press.
Urbina, I. (2015, July 27). 'Sea Slaves': The human misery that feeds pets and livestock. *New York Times*. Retrieved July 28, 2015, from http://www.nytimes.com/2015/07/27/world/outlaw-ocean-thailand-fishing-sea-slaves-pets.html?smid=tw-share
Virilio, P. (1994). *Bunker archaeology*. Princeton, NJ: Princeton University Press.
Wacquant, L. (2010). Urban desolation and symbolic denigration in the hyperghetto. *Social Psychology Quarterly, 73*, 215–219.
Weis, Tony (2016, September/October). Towards 120 billion: Dietary change and animal lives. *Radical Philosophy*, 8–13.
Wilson, J. (2014). The violence of abstract space: Contested regional developments in Southern Mexico. *International Journal of Urban and Regional Research, 38*, 516–538.
Wilson, J., & Bayón, H. (2015). Concrete jungle: Planetary urbanization in the Ecuadorian Amazon. *Human Geography, 8*(3), 1–23.
Wilson, J., & Bayón, H. (2016). Black hole capitalism: Utopian dimensions of planetary urbanization. *City, 20*, 350–367.
Zettler, E. R., Mincer, T. J., & Amaral-Zettler, L. A. (2013). Life in the 'Plastisphere': Microbial communities on plastic marine debris. *Environmental Science & Technology, 47*, 7137–7146.