

COMMENTARY

Hokusai's Great Wave Enters the Anthropocene

Stefan Helmreich

Anthropology, MIT, USA

Katsushika Hokusai's 1829 woodblock print, "Under the Wave off Kanagawa," is the world's most iconic portrait of ocean waves. It has been reproduced, quoted, and repurposed over the last two centuries in a widening circle of representations of the unruly, powerful sea. Today's reimaginings of this storied Japanese image often remark upon the dangerous, damaged state of the contemporary ocean. Such commentaries sometimes refer directly to the 2011 tsunami and to its associated Fukushima nuclear power plant disaster. But adaptations of Hokusai's Wave these days also increasingly point to more general anxieties about catastrophic climate change and to worries about ocean pollution, acidification, and plastification. In such usages, the Wave operates as a synecdoche for, a symbolic capture of, the difficult-to-apprehend vastness of the ever-moving, interconnecting, and possibly threatening sea.¹

Hokusai's image has thus lately been leveraged into commentaries upon the *Anthropocene*—a provocative, and, so far, unofficial, geological term that postulates that humans (*anthropos*) have come to have significant deleterious effects on planetary ecosystems, effects that can be identified not only in the stratigraphic record, but also in the body of Earth's ocean.² If "Under the Wave at Kanagawa" (also "The Great Wave off Kanagawa" or, simply, "The Great Wave") in its early circulations emblemized the historical relation of Japan to the sea and to the transnational connections the sea afforded, re-imaginings today adapt the image to speak to contemporary human-generated global oceanic crisis.

Such reimaginings of the Great Wave do so, significantly, by drawing attention to the *materials* of which such critical artworks are nowadays frequently made: plastic, trash, and other sea-borne detritus—the flotsam and jetsam of a sea damaged by the deleterious geo-historical practices of (some) humans.

Heather Davis and Etienne Turpin in *Art in the Anthropocene: Encounters Among Aesthetics, Politics, Environments, and Epistemologies* argue that "the Anthropocene is primarily a sensorial phenomenon: the experience of living in an increasingly diminished and toxic world."³ Contemporary revisions of Hokusai's Wave do indeed operate in the realm of the sensorially unsettling—although, perhaps contrary to Davis and Turpin's argument, they do so precisely by bringing *into* experience that which might otherwise be far away or beyond everyday apprehension and scale (e.g., islands of swirling ocean trash in the far middle of the Pacific). Such works also, through the garbage they incorporate, call into question the

generalizing and even ahistorical character of the Anthropocene as a “charismatic mega-concept” meant to rename and reframe an entire geological epoch.⁴ Ocean trash, after all, is not so much about the long history of *Homo sapiens* as it is about a set of very particular historical and social practices that have produced this waste: commodity production and consumption. Some scholars have asked whether the Anthropocene might better be known as the Capitalocene.⁵

My examination of recent avatars of the Hokusai figure builds on art historian Christine Guth’s *Hokusai’s Great Wave: Biography of a Global Icon*, the essential account of the worldwide history and travel of the Wave image. Guth brilliantly examines the mutating social life of Hokusai’s image, from its production in late-Edo Japan to its emergence as a French, Euro-American, and then global signifier of all things Japanese; from its work in Japanese nationalism to its play in circuits of commodity capitalism; from its status as a shorthand for international high art to its popular manifestation as a lifestyle brand (think surfing); and from its early conscription into classical Western aesthetics of the sublime to its increasing association with looming global environmental disaster.⁶ The commentary I offer here—really just a footnote to Guth’s definitive book—examines how artists are today rematerializing Hokusai’s Wave so that they might call attention to the beleaguered life of the sea in the age of a toxic and trashed modernity.



Figure 1. Katsushika Hokusai, *Under a Wave at Kanagawa*, c. 1829, woodblock print

An orienting historical sketch of the conditions of the print's early production, consumption, and reception: European and American assessments of "Under the Wave" have often tagged the image as quintessentially Japanese, an example of the "floating world" artistic style of the Edo period, a piece that represents waved nature as *yin* and the confident (if imperiled) fishermen in their boat as *yang*. Locating the print within wider political economic matrices, however, tells a less insular, perhaps less Orientalist, story. Guth argues that the first receptions of Hokusai's wave (in Japan, but also elsewhere) were keyed to a transitional moment in Japanese history.⁷ Where once waves symbolized the divine agency of the sea as a substance protecting the perimeter of Japan, in the early 19th century, as Russia, the United States, and England angled for access to Japanese ports, the wave came to suggest forces of foreign incursion and influence. The print itself, a view of Japan from outside (Mount Fuji marks the place), was caught within these forces, quoting what would have been recognizable in its time as Dutch pictorial practice: a horizontal composition, a prominent featuring of peasant fishermen, and a demand that the picture be read left to right, rather than up-down and right-left.

The blueness of the wave crystallized translocal connection, too; prints were made using not the then usual indigo, but a newly fashionable synthetic dye called Berlin Blue, imported to Japan from Germany via China. This blue, Guth suggests, "materialized the relation between Japan and the world beyond its shores, making the medium part of the message. Hokusai's 'Under the Wave' thus participated in a discourse in which the beholder did not simply imagine China and Europe but experienced them bodily."⁸ This wave sat symbolically, visuo-chemically, in a moment of 19th century globalization.

Hokusai's wave, then, in turn, traveled transnationally. Its aesthetic made its way into Europe, where Claude Monet, who became a fervent collector of Hokusai's woodblocks, created his 1865 painting, "The Green Wave," in direct homage. Monet, like many others in the tradition of wave painting, was fascinated by how the materiality of different sorts of paint, properly deployed, might summon the materiality of water waves themselves. That concern with materiality, I maintain, has been recently amplified in a moment when the substance of the sea is itself widely understood to be in jeopardy. Building upon the arguments of art historian Irmgard Emmelhainz, who has offered that the Anthropocene is too overwhelming to image whole and that therefore "the Anthropocene era implies not a new image of the world, but the transformation of the world into images," I suggest that such images now increasingly draw material *stuff* into their ambit.⁹

Let me motivate this claim with a perhaps unexpected data point. In 1986, feminist artist Pat Steir offered a critique of what she judged to be dominant apprehensions of the Wave image. She argued that too many reproductions and quotations seemed to shore up a distant and contemplative reading of the wave—what we might tag as an out-of-body oculo-centrism. Steir's "First Wave after Hokusai in Blue," was scaled at eight-by-eight feet, an outsized dimension that permitted her to use her full arm length to render a crashing wave, evoking, she hoped, a more visceral, less meditative and detached (if still, perhaps, sublime) experience.¹⁰

This explicit transport of Hokusai's wave into a conversation about embodiment and materiality sets up the life that Hokusai's wave has in today's catastrophe-conscious world. In the newest rescripings of the Great Wave, there is much less of the contemplative and much more of the calamitous. The Wave has come to stand for imminent disaster—climatic and

more—and operates as something of a call to arms. It now no longer jeopardizes only the small fishing boat in the image, but also a wider translocal polity. It operates as a harbinger of danger to/for the viewer, who is addressed as a person caught up in a world in which catastrophe is globalized. In some ways, this leverages earlier habits of viewing toward new purposes; Guth writes, “the vantage point adopted in ‘Under the Wave off Kanagawa’ erases the boundaries between subject and object, transforming the viewer into a participant in this watery drama;”¹¹ the participant nowadays becomes the environmentally freaked out citizen. No surprise that, in the aftermath of the 2011 tsunami, the Wave was reactivated to speak, in a range of editorial cartoons, to that disaster (Figure 2), even sometimes being used as an icon for warnings in tsunami zones (Figure 3).



Figure 2. Dessin de Plantu, d'après Hokusai, *Le Monde*, 15 mars 2011. Reproduced with Permission.



Figure 3. Tsunami warning sign, Niihima, Japan. Photograph copyright Thomas Volstorf. Reproduced with Permission.

Not everyone has been sanguine about this appropriation. Earth and Ocean scientists in particular have been adamant that Hokusai's wave *not* be mistaken for a tsunami. Tsunamis do not feature cresting troughs, but arrive rather as encroaching floods. Just because the word *tsunami* is Japanese and the woodcut is Japanese, they emphasize, does not mean the Wave represents a tsunami.¹²

It is in connection with worries about anthropogenic climate change and ocean pollution that the Great Wave is having its latest fleet of repurposings and deployments. People creating such representations are keenly aware of the potency of the image they use; indeed, it is because Hokusai's image has circulated so widely that it makes sense to appropriate it, and to do so in a critical, even ironic, register. Take, for example, figure 4, which shows a biospheric city floating on a turbulent sea, about to be swamped by a giant wave. In this image, Japan's Mount Fuji is replaced by a symbol of the cosmopolitan globe—a fragile urban utopia cradled in a bubble that is riding on the unsteady foam of a modernity turning against itself.¹³ As Guth suggests, "The elimination of Mount Fuji, a feature of many of its commodified articulations, has helped the image migrate by unmooring it from Japan."¹⁴ The substitution of a globe for Mount Fuji in this image makes it speak to putatively Earthly matters; the peril of the wave has been transposed and scaled up, from local to global. It is also worth remarking that the wave, frozen in the moment just before it breaks, now symbolizes imminent disaster, crash, and collapse. In Figure 4, it appears as the culminating insult of global warming, morphing the formalism of a graph into the material evocation of a figurative image.



Figure 4. Yoko Shimizu, illustration for Michael Cockram, "Bracing for Climate Change," *Green Source Magazine*, January/February 2013. Copyright Yoko Shimizu <http://yukoart.com/blog/climate-change-and-the-city>, blog entry, February 11, 2013. Reproduced with Permission.

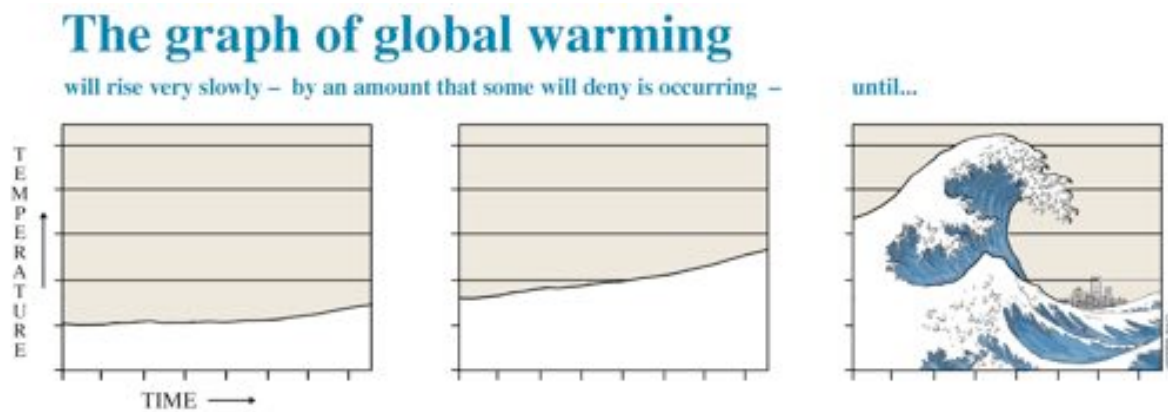


Figure 5. "The Graph of Global Warming," on Chris Madden Cartoons, <http://www.chrismadden.co.uk/cartoon-gallery/environment-cartoon-hokusai-the-great-wave/>. Copyright Chris Madden. Reproduced with Permission.

And this move from form to material gets me to those usages of most interest to me here: those that center on the increasingly trashy texture of today's ocean and ocean waves—and that do so by using (or purporting to use) trash from the sea itself. In such representations, the *medium* becomes crucial to the message. Media have, of course, long been central to representations of the ocean in motion, concretizing culturally and historically situated *imaginings* of water waves and *techniques* of rendering such waves. Painters such as J.M.W. Turner and Winslow Homer are famous for their attempts faithfully to render the sea with specific oils and watercolors, with various kinds of canvases and watercolor papers, and with techniques such as blotting, scraping, rewetting, and more.¹⁵ But those techniques and media—paint, paper—have not generally been understood to *participate* in the substance of sea; they are one-step-removed representations, partaking in the aesthetic of the distanced sublime.¹⁶ Contemporary wave art, particularly that which comments upon the increasing load of garbage in the sea, now seeks to incorporate material gathered from the sea, the material detritus of large-scale human consumption and enterprise.

As one example, take Figure 6, a 2011 parade float from Huntington Beach, California, made of trash collected from that beach, a float that has Hokusai's print as one obvious reference.



Figure 6. Andre Faubert, *Huntington Beach Fourth of July Parade Float, 2011*, 580 pounds of refuse from the shores of Huntington Beach, California. Copyright Huntington Beach / Seal Beach Chapter of the Surfrider Foundation. Reproduced with Permission.

Such trash waves have washed up, little surprise, in more explicit re-imaginings of Hokusai. Artist Chris Jordan's "Gyre," from 2009 (Figure 7), is a photograph that depicts 2.4 million pieces of plastic, "the estimated number of pounds of plastic pollution that enter the world's oceans every hour." This piece is intended as a commentary on the great Pacific trash vortex, a collection of trash spiraling around in the middle of the Pacific.¹⁷ As Guth has suggested, Hokusai's wave is easily adapted to a "growing focus on the real world operations of nature—volcanic eruptions, typhoons, floods, and earthquakes," perhaps particularly because so many "have occurred in the Pacific region."¹⁸ Guth's analysis nicely accounts for such representations of the Pacific trash vortex.



Figure 7. Chris Jordan, *Gyre*, 2009. Depicts 2.4 million pieces of plastic, equal to the estimated number of pounds of plastic pollution that enter the world's oceans every hour. All of the plastic in this image was collected from the Pacific Ocean. Copyright Chris Jordan. Reproduced with Permission.

Although the legend that travels with Jordan's *Gyre* image states that, "All of the plastic in this image was collected from the Pacific Ocean," "Gyre" is in fact a digital mosaic of *photographs* of trash, many replicated multiple times within the work (with the original, model trash samples provided to Jordan by marine researcher Charles Moore, who gathered them in the Pacific Gyre).¹⁹ Art historian Caroline Jones (personal communication) worries that this is a bait-and-switch—a rhetorical sell of the piece that fools many viewers (especially those who have seen it only on the Internet, which will be most of us) into thinking that this is composed

of real trash, and thereby (perhaps) a virtuous repurposing, recycling, of garbage into art. That said, the Internet apparition of this photomosaic, which permits the user to zoom in and out, offers something differently intriguing—a play with the micro and macro that may make this piece less representation than performance, a call to connect the tiny to the global through the impossible work of what Timothy Clark has called “derangements of scale.”²⁰

But someone *has* rendered “The Great Wave” in sea-sourced trash. Bonnie Monteleone, of the marine debris lab in the University of North Carolina, Wilmington, has done exactly what one might at first imagine Jordan did:

She took the plastics she had gathered in each ocean and modeled them on the well-known woodblock print, “The Great Wave” by Japanese artist Hokusai done around 1830. She wanted to demonstrate how altered the oceans are now, compared with less than 200 years ago. ... Monteleone wants the art exhibit to go from coast to coast, much like the AIDS Memorial Quilt that went around the country.²¹

Figure 8 is a photo of an image made with actual trash pasted onto a surface.



Figure 8. Bonnie Monteleone, *Plastic Ocean: In Honor of Captain Charles Moore*, from the *What Goes Around Comes Around* collection, 2011, trash. Copyright Bonnie Monteleone. Reproduced with Permission.

If the Berlin Blue of Hokusai's 1829 woodcut materially indexed an earlier moment of globalization, this 2011 version, made of trash, concretizes the garbage globalization of our day. If imperial Europe used paint to summon subjective impressions of a sublime sea, meditative and malignant both, work in our time of environmental crisis employs the debris of the sea as material, underscoring the entanglement of human representations of the sea with the very substance of oceans themselves. Davis and Turpin write in *Art in the Anthropocene* that, "the concept and practice of art has moved increasingly to consider the material configuration of the world."²² That is happening here.

Such material considerations, of course, can be multiple. Writing on projects to reproduce the Great Wave in public art murals, Guth argues that such manifestations "bring home sociocultural awareness of both the challenges and the opportunities of global change. ... adaptive reuses of the wave speak to a yearning for materiality in a globalizing world of mediated and virtual experiences."²³ As I have suggested here, however, that materiality is not always an unmediated good, worth yearning for. Sometimes new materializations of the Wave serve as warnings—correctives, not palliatives.

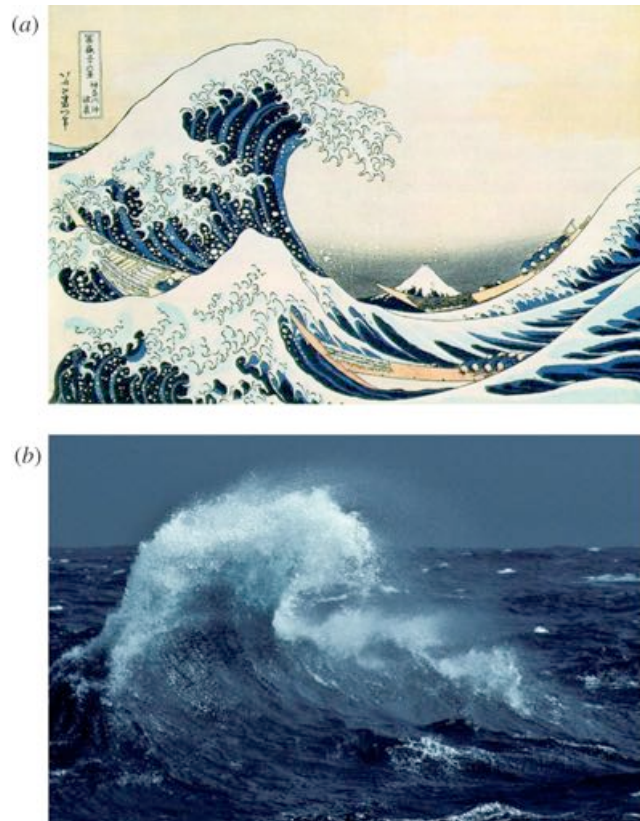
Guth aids us enormously in comprehending these aspects of Wave remakings as well. Guth writes that waves are "resonant signifiers of both the deterritorializing effects of globalization and the hybridity resulting from the mixing of their waters."²⁴ Trash Wave art works in this fashion, fusing an "image of the disruptive powers of nature" with worries about "the potentially disruptive effects of the flow of people, goods, and ideas across national borders."²⁵ "Nature" is revealed as sullied by capitalism.²⁶ "The wave and global environmental awareness have intersected," writes Guth, "the one arousing expectations of the other."²⁷ In 2015, that intersection has brought viewers, I have argued, into the Anthropocene/Capitalocene—or, as Jussi Parikka might call it, the *Anthrobscene*, the toxic material accompaniment of computational, tablet, and smartphone media culture, which, far from ushering the contemporary world into a "paperless" ecotopian sublime, fills the world with poisons consequent on producing, consuming, and discarding the devices that permit (some) people to make global assessments at all.²⁸

Hokusai Waves in the Anthropocene, Capitalocene, or *Anthrobscene* are art-world instantiations of what scholars in the humanities are calling the "new materialisms,"²⁹ the attempt to get at an extra-linguistic, extra-representational accounting of the physical world as something apart from humans. They are signs, perhaps, of a collapsing boundary between notions of watery form and watery material. The representation of waves these days mixes the formal and material in ways that suggest that the boundaries between the two terms have been breached. Whether renderings of Hokusai's print in trash serve as a call to arms is an open question. Guth writes that, "Hokusai's print has been especially helpful in grappling with representations of disaster in an interconnected world because by aestheticizing and exoticizing it also fulfills the function of distancing it."³⁰ While one might differ on the point of whether such aestheticizing can be read as helpful (for what, to whom?), the hope of the art works I have discussed here is precisely the opposite of generating aestheticized distance. Whether that hope materializes remains to be seen; the watery scene of the Anthropocene is still very much in the making and breaking.

ACKNOWLEDGEMENTS Thanks to Una Chaudhuri, Elizabeth DeLoughrey, Eva Hayward, Rustin Hogness, Caroline Jones, Grace Kim, Melody Jue, Heather Paxson, Nicole Starosielki, Phil Steinberg, and Thom van Dooren for commentary on drafts of this piece.

Endnotes

-
- ¹ See Phil Steinberg and Kimberly Peters, "Wet Ontologies, Fluid Spaces: Giving Depth to Volume through Oceanic Thinking," *Environment and Planning D: Society and Space* 33 (2015): 247-264 for a discussion of the ocean as a force rather than a place. The ocean's waves, Steinberg and Peters suggest, following Jonathan Raban, are hydroelemental assemblages, mobile volumes with material and affective charges. I make an allied argument in Stefan Helmreich, "Waves: An Anthropology of Scientific Things." Lewis Henry Morgan Lecture, Department of Anthropology, University of Rochester, Rochester, New York, 22-24 October. Transcript in *HAU: Journal of Ethnographic Theory* 4, no. 3 (2014): 265–284. Video at <http://www.haujournal.org/haunet/helmreich.php>
- ² Paul J. Crutzen and Eugene F. Stoermer, "The Anthropocene," *Global Change Newsletter* 41 (2000): 17–18.
- ³ Heather Davis and Etienne Turpin, eds., *Art in the Anthropocene: Encounters Among Aesthetics, Politics, Environments, and Epistemologies* (London: Open Humanities Press, 2015), 3.
- ⁴ Davis and Turpin, *Art in the Anthropocene*, 6.
- ⁵ See Donna Haraway, "Anthropocene, Capitalocene, Plantationocene, Chthulucene: Making Kin," *Environmental Humanities* 6 (2015): 159-165, and esp. her note 6, which points to early coinages of Capitalocene by Andreas Malm and Jason Moore (see Jason W. Moore, "Anthropocene or Capitalocene," <http://jasonwmoore.wordpress.com/2013/05/13/anthropocene-or-capitalocene/>, 13 May 2013). Haraway catalogs possible other periodizations as well; see also note 15 below.
- ⁶ Christine M. E. Guth, *Hokusai's Great Wave: Biography of a Global Icon* (Honolulu: University of Hawai'i Press, 2015).
- ⁷ Christine M. E. Guth, "Hokusai's Great Waves in Nineteenth-Century Japanese Visual Culture," *The Art Bulletin* 93, no. 4 (2011): 464-485.
- ⁸ Guth, "Hokusai's Great Waves," 475.
- ⁹ See Irmgard Emmelhainz, "Conditions of Visuality Under the Anthropocene and Images of the Anthropocene to Come," *e-flux* 63 (2015), <http://www.e-flux.com/journal/conditions-of-visibility-under-the-anthropocene-and-images-of-the-anthropocene-to-come/>.
- ¹⁰ See Margaret Annette Henderson, "Water in Visual Art: An Investigative Study of Selected Paintings by Joseph Mallord William Turner, Oscar Claude Monet, and Pat Steir," Master's Thesis in Fine Art, University of Kwazulu-Natal, Pietermaritzburg, South Africa, 2004. A digital image of "First Wave after Hokusai in Blue" is available here: <http://www.christies.com/lotfinder/lot/pat-steir-first-wave-after-hokusai-in-1614602-details.aspx?intObjectID=1614602>.
- ¹¹ Guth, *Hokusai's Great Wave*, 42.
- ¹² As Guth remarks, "It is a measure of the celebrity of 'Under the Wave off Kanagawa' that what kind of wave it presents is a question that has been taken up by geophysicists" (Guth, *Hokusai's Great Wave*, 200). Intriguingly, some scientists have claimed that the Great Wave may represent not a tsunami, but a *rogue wave*, a wave unexpectedly taller than its surrounds owing, perhaps, to nonlinear storm effects. In "On Hokusai's Great Wave off Kanagawa: Localization, Linearity and a Rogue Wave in Sub-Antarctic Waters," in *Notes and Records of the Royal Society*, physicist and optics theorist John M. Dudley, science writer and diver Véronique Sarano, and mathematician Frédéric Dias also postulate just this and offer this pattern-match:



See also Julyan H. E. Cartwright and Hisami Nakamura, "What Kind of a Wave is Hokusai's Great Wave off Kanagawa?" *Notes and Records of the Royal Society* doi: 10.1098/rsnr.2007.0039 — <http://rsnr.royalsocietypublishing.org/content/early/2009/02/23/rsnr.2007.0039.full>).

¹³ Guth writes that, "Waves are bodies that move freely with little regard to geographic boundaries, seemingly erasing borders and transforming the world into an interconnected whole, in the process submerging individual identity within collective identity" (Guth, *Hokusai's Great Wave*, 128). We might say of the wave in Figure 4, what Guth says of a similar artwork: "Waves are widely understood to connote the precariousness of human existence, but this one has translated the consequences of human actions into the workings of nature" (Guth, *Hokusai's Great Wave*, 197). On modernity as a kind of foam, see Peter Sloterdijk's *Sphären III: Schäume* (Berlin: Suhrkamp Verlag, 2004).

¹⁴ Guth, *Hokusai's Great Wave*, 134.

¹⁵ Much can be said about the relation between the medium of paint and the medium of water waves. J.M.W. Turner's 1840 "Waves Breaking Against the Wind," pictures the shore at Margate, in England, where Turner, like others of his class and time, was drawn to the new pastime of the beach holiday. Ian Warrell writes, "Turner sought to give his painted representation dramatic textures that replicate, and seemingly act as a substitute for, the movement of water" (Ian Warrell, "JMW Turner, Great Britain, 1775-1851, Waves Breaking Against the Wind, c. 1835," on "Turner to Monet: The Triumph of Landscape," <http://nga.gov.au/exhibition/turnertomonet/Detail.cfm?IRN=167482&BioArtistIRN=18113&Audio=16k&ViewID=1&MnuID=2>). Turner's textures derive from studies in pencil and watercolor. But Turner's studies were aesthetic, not scientific. Writes Adrian Hamilton:

Turner ... was friends with scientists of his day and he was certainly interested in theory, particularly of colour. But it is hard to see him driven by the theories of science. What he set out to do, from his early days of embracing the romantic theories of the 'sublime' in nature, was to depict sensation—the sensations experienced at sunrise and sunlight, in storm and dead calm, in rain and mist (Adrian Hamilton, "Turner: On the Crest of a Wave," *The Independent*, 6 February 2012, <http://www.independent.co.uk/arts-entertainment/art/features/turner-on-the-crest-of-a-wave-6534511.html>).

Turner's waves are emotional memories. The romantic artist is a medium, channeling experience, and Turner went to extremes to gather experience, even having himself, "tied to a mast of a boat so that he could draw waves smashing onto the deck" (David B. Knight, *Landscapes in Music: Space, Place, and Time in the World's Great Music* [Lanham, MD: Rowman and Littlefield, 2006], 66).

Evocations take a sharper cast in Turner's 1840 "Slave Ship," a representation of a 1781 event in which a Liverpool slaver threw overboard 142 sickened captives in order to claim "property loss" to his insurers. The waves, painted in smeared copper red with rushed brush, translate Turner's disgust at slavery. If his Margate waves evince a meditative sublime, those in "Slave Ship," exhibited at the First World Anti-Slavery Convention in London in 1840, physicalize the repugnance of slavery, though still in the idiom of the overwhelming terrible, haunted by the sublime. Indeed, it is possible to argue that "Slave Ship" is an early representation of the Anthropocene on the waves, or even, with the world historic depredations of colonial genocide in view, of the *Plantationocene* (see Haraway 2015, reference above, as well as "Anthropologists Are Talking About the Anthropocene," in *Ethnos*, forthcoming, and website for AURA, <http://anthropocene.au.dk>.) (See S. Ayesha Hameed, "Black Atlantis: Three Songs," in *Forensis: The Architecture of Public Truth*, ed. Forensic Architecture [Berlin: Sternberg Press, 2014] for an allied analysis of this Turner painting).

¹⁶ Compare the "medium-specific theory" of Melody Jue, "Proteus and the Digital: Scalar Transformations of Seawater's Materiality in Ocean Animations," *Animation: An Interdisciplinary Journal* 9, no. 2 (2014): 245-260, in which Jue seeks to think through the material qualities of seawater in connection with media theory. Look also to "underwater media" in Nicole Starosielski, *The Undersea Network* (Durham, NC: Duke University Press, 2015). Also important for my thinking about water as medium—in the media theory sense—is Eva Hayward, "Enfolded Vision: Refracting the Love Life of the Octopus," *Octopus: A Journal of Visual Studies* 1 (2005): 29-44.

¹⁷ For an ethnography of the trash vortex and the scientists and activists arrayed around it, see Kimberley de Wolff, "Gyre Plastic: Science, Circulation and the Matter of the Great Pacific Garbage Patch," PhD diss., University of California, San Diego, 2014. See also Julie Decker, ed. *Gyre: The Plastic Ocean* (London: Booth-Clibborn Editions, 2014).

¹⁸ Guth, *Hokusai's Great Wave*, 207.

¹⁹ Simone Preuss, "An Interview with Photographic Artist Chris Jordan," accessed 7 October 2015, <http://scribol.com/art-and-design/an-interview-with-photographic-artist-chris-jordan>.

²⁰ Timothy Clark, "Scale," in *Telemorphosis: Theory in the Era of Climate Change*, Volume 1, ed. Tom Cohen (Open Humanities Press, an imprint of Michigan Publishing, University of Michigan Library, 2012).

²¹ Susan Hance, "Tackling Ocean Trash: Turning Plastic Pollution into Art for Awareness," on *Wilma: Wilmington's Successful Woman*, April 2014, <http://www.wilmaontheweb.com/Tackling-Ocean-Trash/>.

²² Davis and Turpin, *Art in the Anthropocene*, 13.

²³ Guth, *Hokusai's Great Wave*, 169.

²⁴ *Ibid.*, 7.

²⁵ *Ibid.*, 55, 56.

- ²⁶ Which is a different dynamic than one that Guth names as animating the use of the Wave in branding: “the wave, as a phenomenon that exists outside the borders of any one country yet linking many, can convey integrity in a way that is not located in global capitalism” (Guth, *Hokusai’s Great Wave*, 137).
- ²⁷ Guth, *Hokusai’s Great Wave*, 163.
- ²⁸ Jussi Parikka, *The Anthropocene* (Minneapolis: University of Minnesota Press, 2014).
- ²⁹ See, e.g., Diana Coole and Samantha Frost, eds., *New Materialisms: Ontology, Agency, and Politics* (Durham, NC: Duke University Press, 2010).
- ³⁰ Guth, *Hokusai’s Great Wave*, 206.

Bibliography

- Cartwright, Julian H. E. and Hisami Nakamura. “What Kind of a Wave is Hokusai’s Great Wave off Kanagawa?” *Notes and Records of the Royal Society* 63, no. 2 (2009): 119-135.
- Clark, Timothy. “Scale.” In *Telemorphosis: Theory in the Era of Climate Change*, Volume 1, edited by Tom Cohen, Pp. 148-166. Open Humanities Press, an imprint of Michigan Publishing, University of Michigan Library, 2012.
- Coole, Diana and Samantha Frost, eds. *New Materialisms: Ontology, Agency, and Politics*. Durham, NC: Duke University Press, 2010.
- Crutzen, Paul J. and Eugene F. Stoermer. “The Anthropocene.” *Global Change Newsletter* 41 (2000): 17–18.
- Davis, Heather and Etienne Turpin, eds. *Art in the Anthropocene: Encounters Among Aesthetics, Politics, Environments, and Epistemologies*. London: Open Humanities Press, 2015.
- Decker, Julie, ed. *Gyre: The Plastic Ocean*. London: Booth-Clibborn Editions, 2014.
- de Wolff, Kimberley. “Gyre Plastic: Science, Circulation and the Matter of the Great Pacific Garbage Patch,” PhD diss., University of California, San Diego, 2014.
- Dudley, John M., Véronique Sarano, and Frédéric Dias. “On Hokusai’s *Great Wave off Kanagawa*: Localization, Linearity and a Rogue Wave in Sub-Antarctic Waters.” *Notes and Records of the Royal Society* 67, no. 2 (2013): 159-164.
- Emmelhainz, Irmgard. “Conditions of Visuality Under the Anthropocene and Images of the Anthropocene to Come.” *e-flux* 63 (2015): <http://www.e-flux.com/journal/conditions-of-visibility-under-the-anthropocene-and-images-of-the-anthropocene-to-come/>
- Guth, Christine M. E. *Hokusai’s Great Wave: Biography of a Global Icon*. Honolulu: University of Hawai’i Press, 2015.
- _____. “Hokusai’s Great Waves in Nineteenth-Century Japanese Visual Culture.” *The Art Bulletin* 93, no. 4 (2011): 464-485.
- Hameed, S. Ayesha. “Black Atlantis: Three Songs.” In *Forensis: The Architecture of Public Truth*, edited by Forensic Architecture, Pp. 712-719. Berlin: Sternberg Press, 2014.
- Hamilton, Adrian. “Turner: On the Crest of a Wave.” *The Independent*. Accessed 6 February 2012. <http://www.independent.co.uk/arts-entertainment/art/features/turner-on-the-crest-of-a-wave-6534511.html>
- Hance, Susan. “Tackling Ocean Trash: Turning Plastic Pollution into Art for Awareness.” *Wilma: Wilmington’s Successful Woman*, April 2014. <http://www.wilmaontheweb.com/Tackling-Ocean-Trash/>.
- Haraway, Donna. “Anthropocene, Capitalocene, Plantationocene, Chthulucene: Making Kin.” *Environmental Humanities* 6 (2015): 159-165.

- Hayward, Eva. "Enfolded Vision: Refracting the Love Life of the Octopus." *Octopus: A Journal of Visual Studies* 1 (2005): 29-44.
- Helmreich, Stefan. "Waves: An Anthropology of Scientific Things." Lewis Henry Morgan Lecture, Department of Anthropology, University of Rochester, Rochester, New York, 22-24 October. Transcript in *HAU: Journal of Ethnographic Theory* 4, no. 3 (2014): 265-284. Video at <http://www.haujournal.org/haunet/helmreich.php>
- Henderson, Margaret Annette. "Water in Visual Art: An Investigative Study of Selected Paintings by Joseph Mallord William Turner, Oscar Claude Monet, and Pat Steir." Master's Thesis in Fine Art, University of Kwazulu-Natal, Pietermaritzburg, South Africa, 2004.
- Jue, Melody. "Proteus and the Digital: Scalar Transformations of Seawater's Materiality in Ocean Animations." *Animation: An Interdisciplinary Journal* 9, no. 2 (2014): 245-260.
- Knight, David B. *Landscapes in Music: Space, Place, and Time in the World's Great Music*. Lanham, MD: Rowman and Littlefield, 2006.
- Parikka, Jussi. *The Anthrobscene*. Minneapolis: University of Minnesota Press, 2014.
- Sloterdijk, Peter. *Sphären III: Schäume*. Berlin: Suhrkamp Verlag, 2004.
- Starosielski, Nicole. *The Undersea Network*. Durham, NC: Duke University Press, 2015.
- Steinberg, Phil and Kimberly Peters. "Wet Ontologies, Fluid Spaces: Giving Depth to Volume through Oceanic Thinking." *Environment and Planning D: Society and Space* 33 (2015): 247-264.
- Warrell, Ian. "JMW Turner, Great Britain, 1775-1851, Waves Breaking Against the Wind, c. 1835," on "Turner to Monet: The Triumph of Landscape." <http://nga.gov.au/exhibition/turnertomonet/Detail.cfm?IRN=167482&BioArtistIRN=18113&Audio=16k&ViewID=1&MnuID=2>