ANDREW HEM

It Will Eventually Drift, 2011
Gouache, Oil, and Acrylic on Canvas, 45 x 55 in

COURTESY THE ARTIST

SUSAN K. HARRIS

Mother Ganga

Tales of Purity and Pollution

I'm a Mark Twain scholar. I've written three books about Twain, all researched in libraries and archives. Library research is my thing. It's what took me into academia—that and the fact that college teaching basically lets you set your own hours. But a couple of years ago I took a break from the library. I'd been working on Twain's last travelogue, *Following the Equator* (1897), a book about his lecture tour through the British Empire in 1895–96. The trip forced Twain to think about colonialism and its effects, and it revolutionized his attitudes towards race, religion, and cultural relativism. But *Following the Equator* was written for a popular audience, and Twain could only hint at the issues that fascinated him. I wanted to know what he really thought. So I happily plunked myself down in the relevant libraries, prepared to read my way through Twain's journals and letters. I didn't find much. Problem was, Twain undertook the trip to earn his way out of bankruptcy, and the records he left are mostly about his nightly programs and the profits they netted. There's not a lot about the places he visited and precious little introspection about what he saw. After two years of archival frustration, I decided I needed a more hands-on approach. I decided to follow Twain across the globe.

Twain, his wife Livy, and their daughter Clara (plus tour agents and servants) spent thirteen months on the lecture trail, setting out from Vancouver in a steamboat and trekking their way through Australia, New Zealand, India, and South Africa before heading up to England, where Twain passed the winter writing the book. I didn't have that kind of time—or an agent. So I did my traveling by plane, in three separate, one-month spurts. I went to Australasia alone, which was fine during daytime work hours but really lonely in the evenings. Even though Aussies and Kiwis are friendly, at the end of the day I wanted someone to chat with over dinner and a glass of wine. So my long-suffering husband, Billy—whose idea of a great night out is a hamburger and a movie within a half-mile radius from home—rolled his eyes, sighed, and reluctantly agreed to accompany me to India. Not surprisingly, he found it overwhelming. I didn't; I had spent my thirteenth summer in Nepal, so I expected the crowds, the noise, the dirt—the *difference*. Even though my reclusive, library-loving self cringed under the incessant importuning from cab drivers and street vendors to which, as foreigners, we were

subjected, I was gloriously happy to be there. Like Twain I was fascinated by the color, the grace, the *intensity* that Indian street life displays. And like him I found my Western preconceptions challenged by India's histories, politics, and religions. Months later, when I sat down to begin writing, I realized that the real book I wanted to produce wasn't entirely about Twain. It was also about my own experiences travelling in Twain's wake. And the research I wanted to do was less Twain-centered and more about delving into the latter-day manifestations of the issues Twain raises. The extraordinary thing about Twain is his prescience. *Following the Equator* may have been published in 1897, but many of the themes Twain introduces there are still with us. The more I travelled, the more I realized that even though the India I encountered is a far cry from the India Twain experienced, the legacies of Twain's India were still all around me. One of them is pollution in the Ganges River.

After pursuing Twain through Mumbai, Delhi, Jaipur, and Agra, Billy and I flew to Varanasi, the Hindu holy city on the banks of the Ganges that the British called Benares. Twain spent several days there, and like most Westerners, he was alternately fascinated and repulsed by Hindu religious practices. His disgust was grounded in his perception of the dirt and pollution for which the city was famous even then. He was particularly appalled by the specter of pilgrims drinking Ganges water containing both raw sewage and human and animal remains. Although he was enchanted by the spectacle of pilgrims immersing themselves in the river, he added that

> I should get tired of seeing them wash their mouths with that dreadful water and drink it. … At one place where we halted … the foul gush from a sewer was making the water turbid and murky all around, and there was a random corpse slopping around in it that had floated down from up country. Ten steps below that place stood a crowd of men, women, and comely young maidens waist deep in the water—and they were scooping it up in their hands and drinking it. Faith can certainly do wonders, and this is an instance of it. Those people were not drinking that fearful stuff to assuage thirst, but in order to purify their souls and the interior of their bodies. According to their creed, the Ganges water makes everything pure that it touches—instantly and utterly pure. The sewer water was not an offence to them, the corpse did not revolt them; the sacred water had touched both, and both were now snow-pure, and could defile no one. The memory of that sight will always stay by me; but not by request.

In part because of Twain's report, and in part because guide books had warned us about Varanasi's filth, Billy and I headed there apprehensive about our health. We were told that human feces littered the streets, that the food would give us diarrhea, that malaria and other tropical diseases were epidemic. Remembering the cremation ghats on the Bagmati River in Kathmandu (the cause of recurring nightmares during that thirteenth summer), I was prepared to see charred corpses floating down the river. Meanwhile Billy, always mindful of his delicate stomach, steeled himself for a diet of plain boiled rice. None of our fears were realized. We had some of our best meals in Varanasi; the river appeared, if not clean, at least corpse-free, and the only shit we stepped in was from a cow. To our surprise, we both loved Varanasi, finding the city and its people gentler and more courteous than any of the Indian cities we had visited so far.

Afterward we realized that we probably should not have read about Varanasi in advance: guide books and websites thrive on the sensational. Granted: the city is old, it is crumbling, it is dirty—filthy even—and the area near the ghats is full of touts. As in most Indian cities, the dearth of public toilets means that people relieve themselves outdoors, though not, like the animals, on the streets—unless you count urinating men, a fixture not unique to India. Even where toilets exist, much of the sewage flows into the river. Crowds certainly spread disease, especially during festival seasons, and Ganges water is not, *not* fit to drink nor to bathe in. According to environmental researchers and urban planner Priyam Das and landscape architect Kenneth Tamminga, Ganges pollution is compounded of sewage, industrial waste, the detritus consequent on bathing cattle in the river, dead bodies, and surface runoff waste from landfills and dumpsites. Despite large-scale recognition that pollution is at a crisis level, and despite years of top-down government planning to alleviate it, little has been achieved, in large part because the government agencies have not managed to engage the public in the process.

But engaging the public is never easy. Think about California, currently in one of its worst droughts ever. Theoretically at least, Californians share common cause-and-effect logic and admit some individual responsibility towards their neighbors. Most would agree that they cannot live without water, that drought means less water, and that therefore water should only be used for necessities. Despite the basic consensus, it has been exceptionally difficult persuading Californians that a clean car or a green lawn are not necessities. I've lived in Palo Alto, Riverside, and Santa Barbara, and in none of them have I ever taken a walk without being doused by someone's sprinkler system leaping into action as I passed. The property owners can't seem to turn that switch to "off."

If Californians can't agree about water conservation during a drought so bad that it is wrecking the state's economy, Indians have even greater difficulty reaching consensus. The religious and cultural diversity of India means that multiple systems of reasoning exist side by side. Solving the problem of Ganges pollution means bringing these logics into some kind of dialogue, starting with the concept of pollution itself. It's not that Varanasi residents reject science. The question concerns *which* science, and how that science defines—and remedies—pollution and disease. The city showcases competing medical establishments: Benares Hindu University, a well-respected establishment, offers tracks in both Western and Ayurvedic medicine, while numerous astrologers, faith healers, and lay surgeons are consulted by the religious and general populations. Each medical system is predicated on a different logic about the human body, and each logic is connected to a radically different metaphysic about how the material world works.

For believers, Mother Ganga is a goddess, and she is the supreme doctor. Pilgrims come to Varanasi to be healed by the river, to die by her side, and to have their ashes mingle with her waters. Right here, I realized, was the first obstacle to cleaning up the Ganges: how you define the word *pollution* depends on where you are coming from. For Western-trained scientists, government officials, and the general lay public the word *pollution* connotes tangible, measurable, industrial or animal waste *in the river*, a problem solvable through heroic measures to remove the waste from the water and prevent its return. For believers, however, the word connotes spiritual impurity *in the human being*, a problem solvable through meditation, prayer, and other spiritual and ritual practices. One of these practices is direct contact with Mother Ganga. Pilgrims immerse themselves in the river because she has purifying powers; the sewage, human ashes, and chemical wastes invading her do not prevent her from healing her devotees because she neutralizes pollutants when they touch her waters. In *On the Banks of the Ganges: When Wastewater Meets Sacred Water,* Kelley Alley notes that when she asked Varanasi residents what happens when polluted waters empty into the Ganges, they told her that the river dissolved the impurities. These contrasting ideologies of cause and effect show how difficult it is to even define the terms of the debate about Ganges pollution: if the believer knows that physical contact with the Ganges will cleanse her body and soul, whereas the nonbeliever sees her practices as contributing to the river's contamination, it is almost impossible to find common ground on which to get the conversation going.

Before I read *Following the Equator,* I assumed that Ganges pollution was a twentieth-century phenomenon—the pernicious effects of modernization undermining a hitherto pristine environment. Twain's comments suggested that I should do some digging. The story, of course, is far more complicated. The purity/pollution debate arose during the British occupation, a handy example for the British contention that Hindu India was not fit to rule itself. British scientists did their best to prove that the Ganges was no different from any other river. They didn't always succeed. In *Following the Equator* Twain cites a scientific study that suggested that the river, highly contaminated where raw sewage entered it, had purified itself a mile downstream. The study originated in the observation that cholera, common within Benares city limits, rarely spread to surrounding areas. Since cholera is spread through contact with contaminated bodies and feces, both of which routinely enter the river, it should have occurred in communities downstream. The experiment was conducted according to Western science's standard methods. Dr. E. H. Henkin, the scientist in charge, collected water from the mouths of sewers and from the vicinity of a floating corpse,

measured the cholera germ count in the containers, and then dumped some of the germs into a container of pure well water. He measured the germ count in both containers again six hours later. Whereas the germs added to the well water had proliferated, the germs in the Ganges water had died. Repetition of the experiment consistently yielded the same results. After meeting with Henkin, Twain jotted down the following notes. Henkin, he writes,

> has proved that no cholera microbes [survive] in the Ganges & the Jumna. These waters kill them utterly in from 1 to 3 hours. Water below Benares & Agra contain no cholera germs; he got water from a floating corpse—he drove away a determined host of turtles & got it against the land where he could experiment.
>
> This is amazing. It seems to explain why the many floating dead do not carry cholera epidemics down the river.
>
> He says put cholera microbes in pure well water & they breed myriads in an hour or two.

When he wrote up this episode for *Following the Equator*, Twain felt that there was no rational explanation for Henkin's results.

> For ages and ages the Hindoos have had absolute faith that the water of the Ganges was absolutely pure, could not be defiled by any contact whatsoever, and infallibly made pure and clean whatsoever thing touched it. … The Hindoos have been laughed at, these many generations, but the laughter will need to modify itself a little from now on. How did they find out the water's secret in those ancient ages? Had they germ-scientists then? We do not know. We only know that they had a civilization long before we emerged from savagery.

Twain didn't try to explain this miracle; he cites it, then moves on. But he was keenly interested in point of view, and acutely aware of the tangle of knowledge and values compounding any version of any story. His comments remind us that even questions of pollution and public health wrap into the larger question of who is telling the story, to whom, from what perspective, and based on what premises. Because he got his information from Britons or British-trained members of the Raj, Twain himself was encased in a Western point of view. He probably didn't know that it was the British who first contrasted Varanasi's claim to the sacred, the holy, with its actual state of filth—thus creating a narrative that pitted Western realism against Eastern metaphysics. The empire needed to prove that Indian doctors were charlatans so that they could introduce Western medicine and advertise themselves as benevolent imperialists. Twain deserves credit for trying to peer beyond Western methodologies: he saw that there was something going on in the river that Henkin's experiment could not account for, and he was willing to give credence to Hindu ideas. I should note that Twain's comments weren't always as thoughtful as his report about Henkin's experiments. He was as willing to engage the story of Hindu irrationality as he was to entertain Hindu ideas. Several of his Benares chapters are framed as a satirical guidebook to Hindu temples and shrines, and they engage the traditional Western critique, especially as regards the contrast between Benares's filth and Hindus' conviction that a pilgrimage around the city's holy sites will purify their souls. These chapters disappoint me. I can't ask a nineteenth-century man to share my twenty-first-century cultural relativism, but I have seen Twain in enough cultural relativist moods to know he is capable of more insight, more curiosity. These chapters pander to his Western audience by highlighting the absurdity of Hindu beliefs.

But these chapters also prove the efficacy of the British narrative. The fact that Twain knew he could get a rise out of his Anglo-American readers by disgusting them shows how powerful the Western narrative about India had become. All of Twain's informants sought to undermine Hindu claims to sanctity by pointing out the holy sites' potential for deadly disease. The British tried to solve the problem by instituting public health rules along Western lines; when the citizens of Benares protested, the colonial administration broadcast their resistance as further proof of Hindu India's irrationality.

Twain didn't have an explanation for Henkin's findings, but science and faith may yet find a meeting ground. My online search took me to a WordPress.com site by spargel&fraise that uses Twain's observations about Henkin's experiment as a springboard for discussing the existence of bacteriophages, viruses that target and consume specific bacteria. The history of scientific interest in bacteriophages is itself a study in cultural worldviews: discovered in the early twentieth century and developed by French scientists, phage therapy played a signal role in healing wounded soldiers during the Second World War. Although the Soviet Union continued to develop phage therapies for agricultural and animal diseases, Western interest in phage therapy waned, and until recently, few pharmaceutical companies invested in it. Now there is renewed interest, for three reasons: bacteriophages are far cheaper than antibiotics, they carry fewer side effects than antibiotics because they target very specific bacteria, and they can be used in situations where bacteria have become resistant to antibiotics. Phages can also be used to repair environmental damage. Experimental studies conducted in both the Red Sea and off the Florida coast have discovered phages that target bacteria that destroy coral reefs. Similar discoveries may help remedy pollution in the Ganges. At the very least, they might explain why Henken could not find living cholera germs downriver. Mother Ganga, it turns out, *does* cleanse herself—she bears within her bacteriophages that target cholera germs. Although industrialization and irrigation are undermining the phages' effectiveness by contact with toxic effluents from tanneries and other causes, phages' presence, and understanding of how they work, gives hope that more environmental remediation is possible. So too do experiments with river algae. Alley notes that some of the algae present in the river consume carbon dioxide and produce oxygen that can facilitate both plant and human uses. Others absorb chemical pollutants, thus removing them from the river. So these days scientists are looking at pollution mitigation through microbiological manipulation. Perhaps a combination of phage and algae therapies can be developed that will satisfy both Western and Hindu purity/pollution narratives.

Twain's focus on the repulsive and irrational in Benares still drives most tourist guides to the city, heightening visitors' apprehensions and framing the numerous tourist mishaps reported on the Web. That wasn't his own experience, though, and it wasn't ours, either—perhaps because none of us stayed downtown. Instead, we took lodgings in the Cantonment, an area where the British lived before independence. Remarkably, it is still a kind of open-country suburb. Twain's party opted for a small, walled villa surrounded by fields; Billy and I stayed in the Clarks Hotel, which has existed in one form or another since Twain's time and which sits on the Cantonment's outer edge, with easy walking access to the surrounding country and past the kinds of villas Twain and his family occupied. Twain writes of the quiet and ease of living within a walled compound; we found the pleasure of our location to be its proximity to open country. So we left the hotel's confines, on foot, as often as possible, strolling down quiet, tree-shaded lanes and greeting the occasional pedestrians who scrutinized but did not harass us. After our experience in the cities, Delhi in particular, where we were relentlessly accosted every time we stepped out of our hotel, we found Varanasi's country lanes a huge relief. This personal freedom was our Christmas present to ourselves; we dismissed our driver and guide and treated ourselves to a day of napping, reading, and strolling. Oh yes, and visiting the small shopping mall next door, where Indian families were indulging in a day of eating, socializing, and movie-going. One item missing from the Western narrative about India is the fact that Indians like to party, and the Christian Christmas is just another excuse—even in Varanasi. The mall and many of the streets showcased Santa Clauses and other Christmas motifs—including that great American pollutant, canned Christmas carols. This surprised me. I had scheduled our trip to India for December precisely to escape the American Christmas, and I was gleefully anticipating my first December ever without canned carols. My mistake. The carols were part of the holiday decor, and the holiday was part of Varanasi.

Anglo-American media still filter news about the subcontinent through British narratives—"sanitary West" versus "unsanitary East" is one of them—and the Western press still holds up a mirror that encourages Indians to see themselves through Western eyes. For me the interesting angle is how much Indians bought into the British narrative and how much remains a part of the story that Indians tell about themselves. The Western perspective makes it difficult for Indians to create and internalize a national identity that can reconcile cultural practices with global ambitions.

It's not that there aren't Indian national narratives. The problem is that, in part because of the British legacy, they tend to undermine rather than strengthen national

identity. Pollution—together with its everyday counterpart, relentless littering of the nation's public spaces—is certainly one of these narratives; it's become a national obsession. So too are stories about corruption, both governmental and corporate. When I started bringing the two concepts together I realized that *pollution* and *corruption* mean much the same thing. Both imagine bodies: pollution imagines a tangible body—a human body or a body of water; corruption imagines a metaphorical body, such as the body politic. Both concepts also assume *change*. And the changes are defined similarly, including "changing from an original form," "to make dirty," "to damage," or to "impair integrity, virtue, or moral principle." In other words, both concepts assume that there was an original body that has been changed for the worse.

In India pollution and corruption are closely associated in the public mind; pollution, Indians claim, results from the failure of corrupt governments to clean up the environment. In October of 2014 Prime Minister Narendra Modi initiated a "*Swachh Bharat*," or "Clean India" campaign, publically wielding a broom and invoking Mahatma Gandhi's drive for public cleanliness early in the twentieth century. Environmentally conscious activists, especially college students, took up the call, reaching out to the public with art installations, skits, and social media. More recent articles in Indian newspapers and blogs lament the campaign's faltering progress and indict both government and the general public. Many admiringly raise the example of Singapore, where littering is severely fined. Calcutta's the *Telegraph* reported that spiritual leader Saint Gurmeet Ram Rahim Singh Ji Insan has declared that "like Singapore and other developed countries, India too needed to impose stringent fines on people who spit and litter." Yogendra Saxena, Chief Sustainability Officer for Tata Power, one of India's biggest industries, blames both government and individuals for the deplorable condition of India's public spaces: after calling for fines equal to those meted out in Singapore, Saxena accused Indians of lacking a sense of individual social responsibility. "Change must come from within," he demands, "be it at individual or corporate level." Professor Vasant Natarajan, a physicist at the Indian Institute of Science, Bangalore, also compares India with Singapore and advocates public shaming in addition to fines. Like a number of his compatriots, Natarajan suggests that the example of official corruption is one motive for public misbehavior: Indians "break laws here because they see their political leaders breaking laws with impunity, being corrupt with no fear of retribution." Other Indians simply lament the dearth of concern for the public sphere. Sonal Kalra, a journalist and editor at the *Hindustan Times*, tells the story of a friend whose "'cleanliness drive' is to ensure that the car she drives is clean. … It suffocates her to see her car dirty, so she tosses [soiled tissues and burger wrappers] out of the car, dustbin or no dustbin." Indians also blame traditional caste divisions for their behavior: as Saurav Daga notes on the *Quora* blog, "in Indian society cleaning is supposed to be the lowest denominator profession, something reserved for untouchables."

Many of the articles published in India about public littering refer to India as "the filthiest nation on earth," and Indians seem to have internalized the identity. They tend to raise the topic themselves, without prompting. As the articles also note, few people seem to consider their own personal agency in the matter. In Jaipur I spent a couple of hours waiting in a fabric shop while the resident tailor made me a *salwar kameez*. When you wait around in an Indian shop, the managers bring you tea and chat with you. This shopkeeper wanted to air his views about the incompetence of India's government, and he used trash as his example. According to him, trash was the government's problem; it was government's duty to enforce antilitter laws. "What about individual responsibility?" I asked. I was living in Kansas at the time, and I admired the way Kansas parents taught their children to throw their trash into containers. The instruction seems to work; most Kansas towns I have visited are refreshingly litter-free. I agreed with my host that the Jaipur government should arrange for trash collections, but I also suggested that local families had some responsibility there, too—that change could come from the bottom up—and the inside out—as well as from the top down. He did not seem to hear me. As the afternoon wore on I realized that we were speaking from parallel universes. Like the scientific and spiritual understanding of the word *pollution*, our perceptions of the relation between self and nation depend on the narratives of cause and effect in which we grew up. The shopkeeper imagines power lying out there, in a "government"; at the same time he believes that the government is as morally polluted as the environment is physically. I want to believe that power lies in a dialogue between government and the collective will; the narratives I imbibed imagine government that does its job without bribes and a population willing to sacrifice individual pleasure for the public good.

All of which simply points up the power of narrative to shape perception despite evidence to the contrary. Even a brief survey of pollution in the U.S. shows the naïveté of my own narrative; Americans may not like to believe that their elected officials are corrupt, but the progressive degradation of our natural resources and the paucity of strong environmental laws should tell us that payoffs are commonplace, in whatever semi-legalized form. I am currently living in Brooklyn, New York, near the infamous Gowanus Canal, whose pollution level may well rival Mother Ganga's. Despite years of promises, not to speak of designation as an Environmental Protection Agency Superfund site, nothing has been done to clean it up. When asked, local officials swear they can't afford the cleanup—and then turn around and authorize yet another multi-story, multifamily residence whose sewage will overflow into the canal whenever there is a heavy rain. American logics aren't anything to brag about either. The increasing number of magnitude three or greater earthquakes in fracking-happy Oklahoma (3 in 2009; 585 in 2014) suggest that it wouldn't hurt us to examine the logics driving the oil industry. If Twain were with us now he would be writing scathingly satirical indictments of public intransigence (California), of government incompetence (New York), and of corporate greed (Oklahoma). One thing his trip around the world taught him was that despite its public narratives, the United States could be just as corrupt and illogical as India—an education that would soon lead him to denounce lynching, blast foreign missionaries, and vehemently oppose the U.S. annexation of the Philippines.

By 1899 Twain had learned how to peer around the edges of national narratives and to ask what was really going on. The more I write about the continuities between the world he knew and the one I've inherited, the more I've learned to do the same. My adventure following Twain across the world has shown me that the U.S. bears far more similarities than differences with other countries and that when it comes to environmental issues, few of us are on the same page. Twain's account of conflicting narratives of purity and pollution in nineteenth-century India points to the challenge we now face globally. Our narratives shape our perceptions, and our perceptions stymie our ability to diagnose causes and negotiate solutions. Pollution, earthquakes, and drought furnish evidence that we are undergoing environmental shifts that cannot be easily swept away.

Susan K. Harris spent her childhood oscillating between insular communities in Baltimore, Maryland, and international communities around the world. More recently, she has taught American literature at Queens College, CUNY; Penn State, and the University of Kansas; published books with Oxford, Cambridge, Palgrave, and the University of Missouri presses, and written the contextualizing materials for classical fiction republished by Penguin, Houghton Mifflin, and the Library of America. Currently, she is writing essays that combine her investigative skills with her scholarly background in Mark Twain studies, her travels, and her interest in global affairs. She lives and writes in Brooklyn, New York, and lectures all over the world.