
Waking Up to Nature

To see what is in front of one's nose needs a constant struggle.

George Orwell, "In Front of Your Nose"

The obscure we see eventually. The completely obvious, it seems, takes longer.

Edward R. Murrow, as quoted in *Mad about Physics* (2001),
by Christopher Jargodzki

Only that day dawns to which we are awake.

Henry David Thoreau, *Walden*

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Although some wait until afternoon, most college students wake up early in the morning to the maddening sound of an alarm clock. As the con-traption beeps or buzzes, Joe College reaches out of his slumber, hits the snooze button, rolls over, and goes back to sleep. This sequence replays repeatedly until at last he throws back the blankets and gets out of bed. He's late again so he'll have to hurry if he wants breakfast before class.

Stumbling toward the bathroom, Joe begins a morning routine so well choreographed he should get a credit in dance for its flawless execution: He steps up to the urinal, relieves himself, flushes, shuffles to the sink, pumps the soap, washes his hands, dries them on a paper towel, aims a fadeaway shot toward the wastebasket, and reaches for his toiletries. Groggied out by his morning breath, he grabs toothbrush and toothpaste, turns on the water, wets the brush, spreads paste on the bristles, and begins to brush his teeth. In the mirror, his familiar face seems to be sporting a caveman wig, so today is a shower day, or at least a hat day. Spitting in the sink, Joe reels toward the showers and the dance continues.

Joe's sister, meanwhile, follows a related routine. She checks her e-mail, scans the news feed on Facebook, clicks the syllabus for Environmental Studies 101 to make sure she has the reading right, pulls up her Google calendar to confirm today's activities, and heads for the showers. She lathers up, shampoos her hair, rinses with conditioner, shaves, and enjoys a few additional minutes of hot, steamy water before she concludes.

Towelng off, she's ready to brush and blow-dry her hair, and maybe apply a little makeup.

Both students glance out the window to gauge the weather. They can't really be sure how it might feel out there because they're moving between rooms that are heated or cooled to temperatures in the seventy-degree range. Nature is burning or blowing to create this comfort zone, but they don't notice because that's just "natural." So, naturally, they check weather.com and head for the closet with today's forecast in mind.¹

Like other college students, and most Americans, Jo and Joe College are practicing what Tim Clydesdale calls the "disengaged pragmatism" of everyday life, focusing on the tasks at hand and the day ahead, but not the meaning behind them. So far, the only time they've noticed nature was in the weather report. Waking up at college, they're waking up *in* nature, but they haven't noticed that yet. In this chapter, therefore, we'll try to wake them up *to* the nature of their mornings as well.²

Alarming: The Cultural Work of Clocks

It can be alarming to think deeply about an alarm clock. Normally college students notice it just twice a day, setting it at night and hearing it, regretfully, in the morning. But the time it tells transforms the whole day, and the world.

Most Americans are obsessed with time, as our language suggests: We're saving time or spending it, marking time or killing it. We have free time on the weekends—which seems to suggest that we have slave time most of the week. Many of us even feel like we're doing time, caught in a prison of work and obligations. Whatever we call it, however, all of our times are structured by clock time, the social construction of weeks and days and hours and minutes that shape our appointment books and our lives. Like many of our technical marvels, clocks and watches are machines that do the work of social construction, converting nature into culture, and in this case, nature's time into human time.³

Historically, human beings adjusted their life cycles to the rhythms of day and night, and slept until they were rested or until they were disturbed—often by the call of nature. It's a natural fact that human beings need sleep, and that animals, including humans, have circadian rhythms—cycles of brain-wave activity, core body temperature swings, hormone production, and cell regeneration schedules—that attune the body to the rotations of the planet. In the modern world, however, the body's circadian rhythms proved too imprecise for the demands of

capitalism: People who followed natural rhythms might be late for the factory work of the industrial revolution. So the body had to be broken to the discipline of mechanical time.⁴

As early as the 1830s, Alexis de Tocqueville observed that Americans were obsessed with time, always busy with the consuming passions of individualism: “The inhabitant of the United States,” he observed, “attaches himself to the goods of this world as if he were assured of not dying, and he rushes so precipitately to grasp those that pass within his reach that one would say he fears at each instant he will cease to live before he has enjoyed them. He grasps them all but without clutching them, and he soon allows them to escape from his hands so as to run after new enjoyments.” This culture, in which “rush hour” might be any hour of the day, has survived and thrived in America, leading to a society plagued by what sociologists call “time poverty.” In a culture of time poverty, we don’t have enough time for what really matters to us, because we’re too busy doing other things. Even at college, which is designed to be an interval of slow time in life, many students don’t make time for meaningful work or for reflection about their hopes and dreams because there’s “too much to do.” Our “lack” of time has environmental impacts because it drives us to convenience, where we often accept resource-intensive solutions to our time-management problems. We believe in fast food, for example, because we lead fast lives, circumscribed by the seconds of the clock.⁵

An alarm clock tells us to get up and get to work “on time,” but in focusing our attention on today’s time it marginalizes other important times of our lives, like yesterday or tomorrow. Yesterday, the clock presumes, is just history, and tomorrow might as well be science fiction. Clock time is also just human time. It helps us get places on time, but it keeps us from considering natural time and—depending on our beliefs—supernatural time. By focusing our attention on the personal present, it keeps us from other temporal perspectives, perhaps until it’s literally too late.

Past Time

Despite their enrollment at an educational institution designed to pass on cultural traditions from the past to the future, Joe and Jo College are not generally good at thinking in time. Most of us, in fact, don’t remember—if we ever learned—the environmental history that would help us make sense of the present, so we don’t know why we act the way we do. We don’t understand why environmental problems have developed. We

don't know about environmental successes or histories of hope. Playing by the rules of American presentism, we don't take time to think about the past—unless, of course, we're stuck in a history course.⁶

Whether we acknowledge it or not, however, we live in history, and dead men rule our lives. We inhabit the institutions dead men created and the buildings they erected. We learn from books they wrote and ideas they devised. Daily, we use the technologies they invented—amusing ourselves among the ghosts of Thomas Edison, Henry Ford, and Philo Farnsworth. Most importantly, we live in the world that they developed, despoiled, or protected. When Columbus “discovered” America, he came in wind-powered sailing ships, and encountered people who didn't use fossil fuels. But *we* use lots of fossil fuels, because dead men later discovered coal and oil and exploited them to make our lives easier and more efficient. On the other hand, dead men and women also helped to create a sublime system of American national parks, and legislative protections for wilderness and the environment. The past is always alive in our present, but, because the clock calls us to our next appointment, we rush right past it.⁷

Future Time

American presentism also keeps us from a careful consideration of the future. College is, of course, a preparation for what comes next, and—despite the immediate demands of our clocks and watches—college students worry about the future a lot. But that future is usually individual and instrumental: We're more concerned about preparation for graduate school or a career than about the quality of our communities or the fate of the Earth. Like other Americans, college students aren't very skilled at imagining the long future, or making collective plans for the world they want to live in as adults, partners, parents, and citizens. Most Americans tend not to be very mindful of future generations, and when we are, we often ask, as devout utilitarians do, “What has the future ever done for us?” This shortsightedness makes it difficult, if not impossible, to confront systemic issues like urban planning, poverty, environmental degradation, or global weirding. That's why, as Robert Paehlke says, “Time horizon may be the most important distinction between environmentalists and others.”⁸

As a consequence, we don't think much about the future as something we create today, both in our activity and our inactivity. We don't notice that we are making history with each of our everyday actions. As a result, we collectively create a future that few of us really want to live

in. Like it or not, what we do either reinforces ideas and institutions today, or transforms them for tomorrow. When we approach our studies as tools for civic engagement, we learn how to change the world. When we explore possibilities for environmental responsibility in our own lives, we provide possibilities for future citizens, and so we create a future with our examples as a part of its usable past. Alternately, when we settle for a present so stressful or unpleasant that it drives us to waste time with escapist TV, we create a future with more commercials and commercialism and couch potatoes, reinforcing images of people and society that often contradict our deepest values.

Nature's Time

Even if our alarm clocks located us in a stream of historical continuity, they still wouldn't connect us to biological or ecological time. Clocks ignore nature's time—the slow time of geology and evolution, the long cycles of prairies and forests and oceans. When we plan our lives only by clock time, we forget nature's rhythms and begin to assume that our time is the only time. Even though most natural rhythms are cyclical, Americans believe in linear progress with practically inevitable human improvement. In nature's time, it's progress when the sun comes up each morning, and progress again when it goes down; progress when spring sprouts every year, and once again when bright colors announce fall. In nature's time, efficiency isn't measured by speed, but by sustainability and regeneration—the ability to extend the extravagant generosity of life to another generation. When the human time line meets nature's time circle, however, it increasingly results in extinctions, which are literally killing time for other species.

In nature's time, minutes and seconds don't mean much. We think we're on time when we arrive at the appointed hour, but nature might think otherwise. It takes nature about five hundred years to make one inch of topsoil, so when we live in a way that depletes soil faster than that (and we do), we are not “on time,” no matter how fast or productive we might be. When we live in a way that threatens the ecosystem services that our descendants will need, we're more out of time than on time.

Sacred Time

Whether or not gods exist, people and cultures feel a supernatural relationship to the natural world. It may be Allah or Yahweh, the Corn Mother

or the Rainbow Serpent, but many people believe that something supernatural creates the world, and that our time on Earth is a divine gift in a purposeful cosmos. For example, the Bible suggests that the universe is the work of a creator, and that time is God's gift, so that an individual's time is not just hers, but God's as well. If that's true, perhaps Thoreau was right when he claimed that you can't kill time without injuring eternity.⁹

Many religious traditions structure time to point to such supernatural connections. In earlier Christian cultures, people told (and literally tolled) God's time with Angelus bells, which provided a religious frame for the day by calling people to prayer morning, noon, and night. In contemporary Islamic cultures, people orient themselves toward Mecca and pray at appointed times. All over the world, people are called to recognize the holy at traditional times in everyday life. But when bells ring at American colleges today, few students turn to prayer or contemplation. Sacred time used to be a moment for people to consider how to "redeem the time"—how to make ordinary time extraordinary, luminous with possibilities for good. Calls to prayer and holidays made time for people to listen to the sacred, and to apply the wisdom of holiness to their everyday lives. Although many religious Americans—and some college students—still take time for prayer and church services, we often see these rituals as perfunctory obligations, rather than as an opportunity to imagine a better world. For most college students, Sunday is just the second day of the weekend. On campus, it's the day to recover from Saturday's bacchanalian rituals and—in the evening—to start reading for next week's classes. But it could be different.¹⁰

We could break out of our commonsense construction of time to discover new connections between past and future, nature and culture. Alarmed by the presentism and parochialism of America's culture of time, we could begin timely conversations that would help us reshape our personal and cultural perspectives on how to live sustainably for all time. Such a movement to consider time—the past, the present, the future, the natural, and the sacred—in its entirety, could literally *save* all time.

Shit Happens: The Call of Nature

In the morning, after the alarm sounds, nature calls. The bladder and bowels fill and send nerve signals to the brain, saying, "Do something!" It's one of the few times in a day that Joe and Jo College are conscious of nature's influence on their lives. So college students creak out of bed, shuffle into the bathroom, and relieve themselves. Flushing the toilet, we put nature behind us, and we don't think much of it. But the toilet is

Nature's Free Lunch: Ecosystem Services	
<i>Provisioning</i>	<i>Making stuff so people can make do.</i>
Sunshine	Nature's furnace and lighting system—good for tanning, but also for photosynthesis: the conversion of sunbeams to food.
Plants	Nature's alchemists, converting sunshine to food (and spices and pharmaceuticals) by a process of photosynthesis, which also releases oxygen—a substance that is handy for our breathing. They also generate other useful materials (cotton, wood, etc.) and energy.
Animals	Nature's meatpacking plants, converting plants—some of which humans can't digest—into protein.
Rain, snow, etc.	Nature's cleanser, soft drink, and liquid recreation—also habitat for aquatic plants and animals, and a necessity for land-based flora and fauna, too.
Oceans	Nature's primary habitat—from phytoplankton to fish to great blue whales. Source of most of the seafood we eat.
Rivers	Nature's highways and a flowing source of hydropower.
Prairies, forests, wetlands	Manufacturer of biomass and biodiversity, with topsoil as a biologically beneficial by-product.
Topsoil	Keeps plants from falling over and nourishes them.
Forests	Provide food, lumber, and oxygen, limiting erosion and runoff.
Metals	For making stuff, including cars and computers and beer cans.
Air	Makes breathing easier—also flying.
Everything	Cycling (and recycling) of nutrients in system.
<i>Regulating</i>	<i>Keeping biotic systems in control.</i>
Atmosphere	Nature's screen (from ultraviolet rays).
Plants	Nature's carbon catchers, sequestering carbon dioxide and partially regulating the climate.
Decomposition	Nature's waste management, reducing the amount of garbage and shit we live in by breaking down organic wastes.
Trees and other plants	Nature's air quality control, removing pollutants like nitrogen dioxide, sulfur dioxide, ozone, carbon monoxide, and particulate matter from the air.
Trees	One of nature's sunscreens, shading people and buildings, and saving energy.
Clouds	Another natural sunscreen, and an evaporative part of the water cycle.

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Predators	Nature's pesticide and its population control.
Wetlands	Nature's water filter, purifying water going to groundwater.
Wind	Nature's coolant, conveyor belt for weather systems, and seed-dispersal system.
Polar regions	Nature's air conditioner.
Wetlands, plant cover	Nature's flood control, protecting coastal areas from storm surges.
<i>Supporting</i>	<i>Assisting people in their purposes.</i>
Atmosphere	Nature's greenhouse (maintaining temperatures to support life).
Pollination	Assisting the sex lives of plants (including crops) so that they come to fruition.
Acreage	Provides space for solid waste and sinks for gaseous waste.
Death	Nature's way of clearing space for new life.
Rain	Nature's vertical irrigation, nourishing crop growth and preventing drought.
<i>Cultural</i>	<i>Making stuff to make meanings about.</i>
Everything	Catalyst for curiosity, source of science.
Most everything	Stimulant for aesthetic appreciation and expression.
Landscapes	Nature's art museum and people's playgrounds.
Moon	Nature's romancer and tide pull.
Stars	Intimations of infinity, invitation to astrologers.
Animals	Totems for tribes, individuals, and sports teams.
Ecological design	A baseline for biomimicry and human cultures.
Ecosystems	Ecotourism.
Birds	Birding.
Flowers	Beauty in the wild and in the home.
Diamonds and beaches and chocolate	For romantic love.
Gold and silver	For the monetary imagination.
<i>Preserving</i>	<i>Keeping all the moving parts of the system, maintaining resilience.</i>
Biodiversity	Preserving more choices for natural selection.
Bioregulation	Partial stabilization of climate.

a place where the body's plumbing meets the plumbing of culture and nature, so it's a rich ecological niche.

College students talk shit all the time, but not ecologically. A superficial conversation is shooting the shit. Something obvious is "no shit!" while "bullshit!" is a standard response to falsehood. If you care, you might give a shit. If not, you might get shit-faced at a party. And if the party gets too wild, the shit hits the fan. "Shit" is on the tip of our tongues, but we need to bring it to the front of our minds, because shit isn't just a linguistic construct; it's a daily reality. Americans make about five billion gallons of waste a day without even thinking about it, but we don't *know* shit.¹¹

When students need to take a shit on campus, they go to a specialized space called a bathroom. In the average college residence hall, the bathrooms seem a long way from environmental studies, but waste management is an environmental study. If you're a human being of average size and weight, for example, your body produces about a pound of waste, solid and liquid, every day. It's one of the few forms of production still remaining in America, one type of manufacturing that can't be shipped offshore.

The process seems simple, but it's fairly complex. When Joe College orders a cheeseburger and french fries, he chews his meal and swallows, sliding the food down his alimentary canal. There, a variety of digestive enzymes convert complex carbohydrates into simple sugars, transform fats into glycerol and fatty acids, and transmute proteins into amino acids and peptides. In Joe's small intestine, these digested nutrients are absorbed by blood and lymph vessels to be carried into the circulatory system to feed various organs. What's leftover is excremental, the waste that waits until, as the bumper sticker says, "shit happens." When it happens, we head to the toilet and drop our load into a small pool of water where it's submerged along with its pungent smell. After wiping with soft sheets of treated trees, we flush the toilet. To most of us, it's not worth a second thought.

This hasn't always been the case. Two-hundred years ago, college students disposed of their bodily wastes on campus. In the winter, people used bedpans, and then carried their waste to the outhouse. Removed from the main buildings, the outhouse was close enough for people to comprehend the problem (and the possibilities) of waste. In cities, entrepreneurs regularly cleaned "night soil" from outhouses and sold it as a fertilizer for outlying farms, providing a useful second life for what we call "waste."¹² After the arrival of indoor plumbing, however, when shit happened, it went down the drain instead of back to nature.

Most college students, like most Americans, live by what Philip Slater calls “the toilet bowl principle of American life”—out of sight is out of mind. But when the toilet flushes, shit doesn’t just evaporate. It travels through sanitary sewers to a solid-waste treatment plant. At most such plants, sewage receives several different treatments. After screening and grit removal, the mixture of excrement, urine, water, paper, and other items enters a settling tank. There, solids drop to the bottom so that grease and plastics can be skimmed off the top. The water heads for secondary treatment, where microorganisms feed on bacteria, purifying the liquid. Finally—using sand filters, natural or artificial wetlands, ultraviolet light, or ozone—the water is “polished,” to bring it up to legal standards, and discharged back into rivers. When we flush on campus, we’re intimately (and institutionally) involved in the water cycle.¹³

Biologically, excretion can remind us of the beauties of the natural world, the ways in which our bodies are designed to manage the ins and outs of animal life. Ecologically, our bathroom break reminds us that all natural systems, including the human body, are involved in processes of consumption and return. Taking in nutrients, we expel wastes, which function in the grand scheme of nature as nutrients for other species. Culturally, however, our excretions are a mess: We treat shit like shit. As Christopher Uhl says, “We take two perfectly good resources—human manure and fresh water—and splat them together in the toilet bowl, making them both useless.” But if we ever get our shit together, perhaps we’d see that human wastes aren’t wasted when we use them—properly treated—as fertilizer or fuel, thus returning them to the productive and regenerative cycles of nature.¹⁴

The Artificial Waterfall

At some point in the day, most college students take part in a purification ritual called a shower. They walk down the hall to the bathroom carrying a plastic caddy holding soap, shampoo, conditioner, and other lotions and potions. Towel on shoulder, washcloth or loofah in hand, students look for an open shower, set their supplies on a bench, draw a plastic curtain, undress, hang up their clothes, step under the showerhead, and then open the valve to a torrent of cultural assumptions and expectations. Though turning the tap seems mechanical, it’s also organic and very complex. In Northfield, Minnesota, for example, the water flowing in the shower is drawn from the Jordan Aquifer. It’s pumped through a purification plant for chlorination and fluoridation, and then

to water towers that provide the pressure for the whole municipal system. In a hydraulic civilization, water goes not just where it falls or flows, but where we want it.¹⁵

The shower gets us clean, but it also performs cultural work. Dirt is evil in our culture, and so we ritually cleanse ourselves in a sort of daily baptism, initiating us into a sect of sanitation. Early in the morning, as we're trying to wake up, a shower is cleansing and stimulating. Later in the day, after a run or a game of basketball, it's cleansing but also relaxing. In either case, a shower is a way of washing the body, but it's often also a luxury, too. The water streaming over the skin, massaging the muscles, is a sheer delight. The sound of constant flow is soothing, like a cascading creek. And the steamy heat penetrates our pores, comforting us with wondrous warmth. We bathe not just physically, but also psychologically. When we're dirty, we tell ourselves we need a shower. When we're tired or stressed, we tell ourselves we *deserve* a shower. A long shower, too, is a counterpoint to the culture of speed and efficiency so recently reinforced by our alarm clock. In a small way, a slow shower is a protest movement against a world of enforced time poverty: As we linger in the liquid tranquilizer, we're *not* quick and we're *not* efficient. This ultimately is a problem. Resisting the time pressures of our society might be a good instinct, but using fifty gallons of fresh water in the process is not so good.¹⁶

The Social Construction of Showers

We all understand how a shower works, and how it can work to wake us up, but we need to wake up to how it functions in the moral ecology of everyday life. Considered analytically, a shower, just like the toilet, is a way of transforming drinkable water into wastewater. The drain water finds its way (sooner or later) to an ocean, where it evaporates and circulates in clouds until it precipitates into places where we can pump it once again. In the shower, we're in the water cycle, which is affected by every turn of the tap.

We think of a shower as a private act, but when we get in the stall, we enter with a lifetime of education and expectations. Every day, ads for soaps, shampoos, conditioners, gels, and moisturizers teach us what clean really means. They teach us about feelings—about comfort and pleasure and joy and indulgence—and sometimes, for women especially, about sexiness. They teach us to get clean, but they also teach us to get that fresh, clean *feeling* that we have unconsciously learned to associate with the commodities in our shower caddy. Ads don't tell us that soap

works first by bonding dirt to hydrophobic fatty acids, encapsulating the dirt in droplets of water that can be rinsed away, or that shampoos generally use detergents like ammonium lauryl sulfate to remove our hair's natural oil and phthalates to dissolve scents and thicken lotions. They certainly don't trouble us with information about the chemistry of conditioners, which not only coat the clean hair with *different* oils, but also with silicone, humectants, proteins, and quaternary ammonium compounds—primarily to make hair slick and easy to comb. We don't learn where the ingredients came from, or who was involved in manufacturing them, but that's okay, because our hair looks great, and that's what matters in the morning.¹⁷

Indeed, we don't learn these things because shampoo commercials aren't about shampoo: They're about cultural conceptions of beauty—about hair and the meanings of hair. Shampoo companies hire models like Cindy Crawford, Eva Longoria Parker, and Jessica Simpson—who possess what is essentially professional hair—to teach us that a woman's hair, and not the brain beneath it, is what makes her sexy and attractive. Generally these shampoo models have long, straight hair that they wave around in slow motion. Watching the ads, we might believe that the purpose of shampoo is to train hair to dance.

A guy's hair usually doesn't dance in ads. Joe College's shampoo can be stylish and scented, but for guys in TV ads, shampoo serves three putative purposes: washing hair after an athletic event, thus confirming one's manliness; getting rid of unsightly dandruff, thus confirming one's attractiveness; and convincing women to stroke the clean hair lovingly, thus confirming the gullibility of the guy who believes in such a scenario.

Shampoo ads teach us, or at least remind us, that women are meant to smell like flowers and fruit. For men, as usual, there is a narrower range of choices, and they tend not to be floral or fruity. If men smell, the ads tell us, they need to smell different from women—musky perhaps—thus confirming their independent gender identity. At the end of a shower, therefore, we can rinse off the shampoo, but it's harder to escape the images and assumptions locked in the lather of the ads. Advertisements shape our common sense of what's normal, and we respond, subtly shaping the moral ecology of everyday life.

The Natural Resources of Showers

In the shower, we get in hot water when we forget where the hot water comes from, because both water and heat come to us from nature. A

toilet is basically a small pond in the bathroom, while the shower is a waterfall positioned for our convenience. While they definitely depend on plumbing and human ingenuity, they rely more basically on precipitation and the recharge of groundwater and aquifers—natural phenomena. And because water in nature is seldom warm enough for a satisfying shower, Joe and Jo College use nature to heat nature, warming water by burning fossil fuels or causing chain reactions in uranium. While we luxuriate in the shower, we also suck up the world's fresh water and generate more greenhouse gases.¹⁸

If a normal shower delivers three gallons of water a minute, then a ten-minute shower requires thirty gallons of water. With just one shower a day for a nine-month school year, most students will use about 8,100 gallons of water; if the average university has ten thousand students, that's more than eighty million gallons. Simple updates like low-flow showerheads could allow the university to save four million gallons of water, plus the fuels needed to warm that much water. Students would still be clean, with hair that would still glisten, but the school could easily be conserving resources.¹⁹

The American shower has a deeper effect, though, by impressing the planet's other people, who often emulate U.S. standards of cleanliness. "The British bath," notes Elizabeth Shove, "is in danger of being abandoned in favour of showering on a daily or twice daily basis." By itself, this English adjustment might be no big deal, but it's a small part of an energy-intensive shift in international comfort standards, and *that* is huge. This also suggests that standards of cleanliness are never universal or permanent. American students now expect free and unlimited water for showers in their residence halls. At one time, however, a trustee at a college in the prairies of the Midwest thought that the purchase of a single tin bathtub was an unnecessary luxury for students. The extravagance only seemed justified when he discovered that the college could charge students a nickel a bath. If today's colleges charged students for water by the gallon, it might help teach the costs incurred by lingering luxuriously in the shower, and it might be a first step toward full-cost accounting (and accountability) for all the resources in students' lives.²⁰

We shower ourselves with water, in an artificial waterfall created by culture. Though our morning shower never seems like "getting back to nature," it's one place where we could wake up to nature, a place where we could practice mindfulness about our "ordinary consumption." Usually when we think about consumption, we think about buying stuff or going out to restaurants, movies, or concerts. "Ordinary consumption," on the

other hand, is so routine and repetitive—like water and heat, electricity and embodied energy—that we don't normally consider it a part of our consumer behavior. In the shower, then, we can fully enjoy the comforts and convenience of the steamy stream, but we can also begin to immerse ourselves in the paradigm shift of conservation that will characterize the coming culture of permanence.

Mirror Image: The Nature of Looking Good

After performing their cleansing rituals, Joe and Jo College usually take part in rituals of self-inspection and self-improvement in front of a mirror. The word “mirror” itself comes from the Latin root *mirari*—to admire—making a mirror, at its root, a meeting place for a mutual admiration society of one.

Yet while its smooth surface simply reflects the images of objects, a mirror also performs cultural work, reflecting the patterns of American society. It is a visual echo, and, like television, a way of seeing—and not seeing.

As a matter of physics, most mirrors reflect exactly the patterns of light and shade that hit them. But as a matter of culture, there can be significant distortions, because mirrors reflect not just the way we are but also the ways we hope (or fear) to be. For example, when we look at a mirror in the morning, we are trained by years of advice and advertising to see not just our own reflection, but also its relationship to ideal images in magazines or on TV. We are trained to focus on particulars: We don't usually see the whole picture because we're concentrating on so-called problem areas that popular culture has pinpointed for us. One student's mirror highlights his pimples and the size of his nose, while another's magnifies her worry about her makeup and hair. Mirrors permit us to objectify ourselves, to look at ourselves as others see us, rather than as we truly are. American culture teaches us to be attractive, and to dress for success, and the mirror provides the final exam to see if we have succeeded.

But mirrors can't do everything. Although they reveal the social self, they divert our attention from the natural self. Contemplating teeth, zits, facial hair, and the dark circles under our eyes, we forget to appreciate the intricacy of the organism that stands before us. We forget, for example, the marvel of our eyes, which allow us to use a mirror effectively. An immense evolutionary advantage, they provided our ancestors with the hand-eye coordination that has made *Homo sapiens* such a successful

species. Containing about half the sensory receptors in the body, our eyes use about 30 percent of the brain's cortex to see that bleary face in the mirror. But we don't usually perceive the amazing ecological adaptation staring back at us. Eyeing the mirror to check out the surfaces of the self, we miss the nature of the body and the nature of its connections to the rest of nature. Although he wasn't talking about mirrors, Thoreau once wrote that he wanted to be "nature looking into nature." That's what happens in mirrors of America. But because we bring our cultural preoccupations to the mirror, we often turn out to be nature looking *away* from nature.²¹

The Student Body

The student body in the bathroom mirror is both natural and cultural. The human body is, of course, a highly evolved product of natural selection with bifocal vision, bipedal locomotion, and nimble hands with opposable thumbs. It comes with a big brain that supports complex thinking, toolmaking, communication, culture, and even college class work—not to mention autonomic functions like breathing and blood flow. It's a mammal's body in the mirror, with warm blood and temperature control, an internal combustion engine we call the digestive system, and a tangle of bloodlines and nerves that bring it all together. Right now, this animal body is brushing the teeth that make it omnivorous, able to eat both animal and plant life. But this is only the beginning. The natural body is in constant intercourse with nature.

We often speak about "people and nature" as though the body is bounded by its skin, but this is a dangerous illusion. The body in the looking glass is constantly sharing elements with its environment, amassing atoms from everywhere. As ecologist Christopher Uhl suggests in *Developing Ecological Consciousness*, "If you were to put an ink dot on a map of the Earth to designate the origins of the trillions of atoms that make up your body, the map would be covered in ink. Our atoms have journeyed to us literally from everywhere on the planet. We are a part of their cycles." We are dependent on the Earth's interdependence, and we forget it at our peril.²²

The natural body depends on the natural world, not just abstractly, but viscerally, and not just occasionally, but constantly. For example, the body we see in the morning mirror is breathing, inhaling the oxygen that fuels the combustion of carbohydrates in the body. People can live about three weeks without food, and about three days without water,

but only three minutes without air. We don't think much about that, however, because air is invisible, because it's not yet a commodity, and because it's automatic. However, if we had to buy the air we breathe, we would pay a lot more attention. If all of us needed to inhale "Perri-air" (as Mel Brooks does in *Spaceballs*) or visit an oxygen bar for our daily requirements, we'd be more mindful. If the three thousand gallons of air we take in each day were as expensive as gasoline, we'd notice. But air is still free—an ecosystem service provided by the planet—so we ignore it entirely (and allow industries to pollute it). Likewise, if we had to *choose* to breathe, we'd keep it in our consciousness, but the autonomic nervous system takes care of air for us. As Christopher Uhl suggests, "Breathing happens on its own; you are not breathing so much as you are being breathed."

Even more amazing, the body we see in the mirror doesn't just exist *in* a natural habitat, it *is* a habitat for nature, filled with microorganisms that are essential to its functioning. Recent studies show that 90 percent of the cells in our bodies aren't ours: They're bacteria. In the microbiome that is us, some bacteria are helping to convert plant sugars to usable energy for us, some are making vitamins essential to our health, some are neutralizing chemicals that could cause cancer and other diseases, and some are making food for other bacteria, including the cells that line the colon. These life-forms help shape the form of human life. Every minute of every day, we have a relationship with nature more intimate than our relationship with our families, friends, and partners. By nature, we are always in relationship with nature.²³

The relationship, however, is not always harmonious, so we protect ourselves against microbes that have proven deadly in the past. In the United States, vaccinations are practically mandatory, so almost all college students are armed against the natural flourishing of organisms that thrive by causing disease. But we rarely stop there: On any given day a lot of the bodies seen in college mirrors are teeming with antibiotics—a word that literally means "against life"—as we try to kill the living organisms that unsettle our digestive and respiratory systems. Some of us also use antibacterial soaps and lotions to protect our skin from similar attacks. Unfortunately this defense can be counterproductive because it kills the good bacteria, leaving a body susceptible to hardier bacteria that develop resistances to our common pharmaceuticals.²⁴

The natural body also absorbs the chemical elements of our culture. If we could look *into* the body, we'd see stuff we don't imagine when we look in the mirror. In "The Pollution Within," *National Geographic* writer

David Duncan recounts the chemicals that tests found in his body in 2006—polybrominated diphenyl ethers (used in flame retardants and implicated in thyroid disruptions and neurological problems in mice); DDT (used as a pesticide until it was banned in 1973); the insecticides chlordane and heptachlor; PCBs (banned in 1976); Bisphenol A (used in hard plastics like Nalgene bottles and safety goggles); phthalates (used in shampoos, car dashboards, and plastic food wrap); perfluorinated carboxylic acids (PFCAs); dioxins (used in making paper); and mercury (from coal-fueled power plants). Like most Americans, including Jo and Joe College, Duncan is poisoned by the stuff our culture uses to free us from our natural limitations: gasoline, plastics, and fossil fuels. Like it or not, the environmental impact of American culture ends up in our bodies and blood. What goes around comes around, and the outside environment comes in.²⁵

We miss a lot in the mirror, but some of what we do see is also deeply related to basic biology. The culture of cosmetics, for example, may be related to our natural need for healthy mates. Many sociobiologists contend that when we're thinking about appearances we're often thinking about the appearance of health—especially the appearance of people who look healthy enough to reproduce productively. Teeth are a sign of health, so we brace them and brush them to make them more attractive. Lustrous hair is another indicator of natural health, so we shampoo, condition, and color it. Some go even further. Nature doesn't call Jo College to cosmetics, for example, but cosmetics can imitate the signs of nature. Although college girls seldom think of cosmetics in terms of evolutionary biology, they often involve biomimicry: a youthful look, with smooth skin and full lips, makes the face appear healthier to prospective suitors. In the twentieth century, a tan also became an indication of healthy outdoor activity, so many of us get tanned, if only from a bottle or a booth. We want to look well—or, as Carl Elliott says, “better than well”—and that's natural. But how we get that look is decidedly not.²⁶

Right now, when Joe and Jo College look in the mirror, they're hoping to see someone beautiful or handsome looking back, because they're trying to meet social expectations. They could look for a sense of beauty that's more than skin deep, a sense of beauty that meets ecological expectations by connecting them to the biotic community. When Aldo Leopold articulated his land ethic, beauty was one of his criteria for when “a thing is right.” But he clearly didn't mean scenic beauty, since he derides the shallowness of people who only like the landscapes of nature. For Leopold, beauty wasn't just what you could see, but how you might relate—beauty was functional, harmonious, whole. What if

we tried to arrange our lives so that when we looked in the mirror, we would see the loveliness (and lovingness) of people who harmonized with nature? Wouldn't that be beautiful?

Waking Up to Responsibility

At college, when we wake up, we do what comes naturally, even though most of it is what comes culturally. American culture works hard to distance us from our environmental impacts and our ecological consciousness so that even though we wake up every day *in* nature, we don't generally wake up *to* nature. Our morning routine offers all sorts of cultural cues about time, busy-ness, and convenience, but very few clues about the natural world in which our harried activity occurs. We receive constant commercial messages about cleanliness and looking good, but we don't read or receive many of nature's messages—the ones sent as news about gas prices and oil wars, global weirding and habitat loss, disease and extinctions, or the simple and beautiful seasonal cycles of our campus habitat. As a result, we don't see or feel ourselves as environmental actors, participating wisely or wantonly in the rhythms and cycles of a living Earth.

When we wake up, some of us are conscious, but few of us are conscientious. Despite that fact, we all participate fully in the moral ecology of everyday life, making at least five ethical choices before breakfast. But we don't *feel* like ethical actors because we're just doing what comes culturally. We've made these choices not by our active options but by our passive participation in *systems* of choice. As this suggests, one of the most powerful things we do in life is to define normality for each other. If it's normal to flip on the lights in the bathroom, we normally think it's okay. But it might be more complicated than that. For example, when Joe and Jo College think they are just lighting a room, they're also generating greenhouse gases. If they thought about it, they might think that this is "no big deal"—and that would be true, if they only lived for a day. But Americans live a long time, so all of our "no big deals" add up to major environmental impacts. As Eric Sorensen points out in his *Seven Wonders for a Cool Planet*, "If the average North American life expectancy holds at seventy-eight years, each person can expect to produce 1,630 tons of carbon dioxide over his or her lifetime." The everyday actions of students are choices camouflaged as routines, but each of these habits is, in fact, a moral choice.²⁷



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Because what we do matters, we might want to wake up to more than the mere routines of the day. Mindful of the social construction of college culture and the busy-ness of campus life, we might try to set aside time for some big questions—ones having to do with the goodness of the good life or the health of the ecosystem services that we depend on. Mindful of the life-giving properties of water, we might try to conserve it for future generations. Mindful of our animal nature, we might try to be creatures who enhance habitats, instead of despoiling them. Mindful of the complexities of the human body and the other bodies that support it, we might nurture a sense of wonder for the natural world that includes us so generously.

Mindfulness: The quality of attention and care that keeps Earth in mind, so that we can mind our own social and environmental behavior. Antonym: mindlessness.

We might also begin to imagine and invent tools that literally remind us of our responsibilities for the life of the planet. Most current technologies are designed to be easy to use, and “easy” is sadly often just a synonym for “careless.” The thermostat maintains the temperature in our room; the TV stands ready for instantaneous power-up; the car starts with the turn of a key. Nothing reminds us that ambient temperatures, instantaneous electronics, and automotive travel are environmental

issues. Nothing tells us about the implicit choices embedded in our machines. But we can remind ourselves of our environmental impacts—and change them—by designing machines for ethical impact as well as aesthetic appeal. In *Sustainability by Design*, for example, John Ehrenfeld suggests that a dual-flush toilet disrupts the normal flow of life just enough to make us mindful of our choices. Instead of just flushing, we have to make a choice about how much water to use—and if we know anything at all, we know the choice is both environmental and ethical. Eventually, this water-saving option might become second nature to us, and we might finally establish a mindless habit that actually conserves habitats.²⁸

We might also consider reinventing the habits that threaten the planet's natural (and cultural) habitats, so that our habits teach the people around us about the routines of a regenerative life. Unlike most humans in most of history, Joe and Jo College live in a segregated society, having separated themselves from the reflective experience of the natural world. Americans value “getting back to nature” on vacation, but that common phrase illustrates just how far we've removed ourselves from nature in our everyday lives. Instead of just living on the Earth, therefore, we might begin to live in the Earth's cycles and rhythms, not just as consumers of ecosystem services, but as sources of ingenuity, creating regenerative designs—social, ecological, technological, and personal designs—that make it easier to live well with nature.²⁹

Fortunately, Joe and Jo College live in an environment that allows reconsideration and reconstruction of the way we live in the world: the college campus. Unlike most Americans in the workaday world, college students could easily wake up to systems thinking—to see the systems that operate beneath the surfaces of everyday life *and* to change them. In the college environment of hope and opportunity, why not practice the mapping and modeling of natural systems, including the altered stocks and flows that result from our ordinary consumption? Why not pay attention to the inputs and outputs of our natural and cultural systems, and to feedback loops in nature and culture? Why not consider the cultural resources that we have to change the systems we live in, aligning our human systems with the ecosystems of nature? Why not make our lives mean something?³⁰

Academic success won't mean much in a world of ecological failures, and a college degree won't be so advantageous on a planet warmed by five degrees. The grade we get in biology won't matter that much if we compromise the planet's biological systems. Cleanliness may still be next

to godliness, but it won't seem so special if it sucks up the world's fresh-water supplies. Putting on a cosmetic face in the morning may make us more attractive, but it won't matter much if the guy of our dreams is full of flame retardants or other cancer-causing chemicals. Indeed, if we're not careful *and* committed to environmental activism, we might find ourselves up shit creek without a paddle.

Our biggest environmental impacts don't usually happen before breakfast, but if we woke up to our place in the world, we would see the amazing intricacy of nature and our part in it, and the amazing damage we can do without thinking. We would begin to understand the nature of college culture, including the power of habit, the power of example, and the power of institutions. And we would begin to use this new knowledge of our culture to change the nature of our relationship with the natural world.