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Transcending the Industrial Mind: Ecological Development, Governance, and Sense of Self

Timothy Den Herder-Thomas

A typical exploration of the future of humanity's relationship with the non-human world might start with the premise that we have to find ways to encourage people to "care" about "protecting the environment." If we are more cynical, we might instead assume that people will not care, and that we must instead try to link the environmental objectives of the learned few to the base desires of the many by tweaking the political, economic, and cultural forces at our disposal to deliver the desired result. We might debate the feasibility of various methods—eco-spirituality, environmental education, international climate policy, trade negotiations, mass media, consumer culture, or ecological disaster—in coaxing society to change the way it does business. We might ponder the possibility of slow and incremental change, or, in hopelessness and fear of future disaster, despair that ignorant humanity will ever do anything serious about "the environment."

This will be a very different sort of essay. I start with a number of bold premises, not because they are shared (in fact if they were, the world would look quite different), but because of the interesting questions that arise from them. I will assume that we all know that the war in Iraq; the fires in California; the collapse of America's farm culture; Cyclone Sidr (which drove 650,000 Bangladeshi's from their homes last year); economic competition from China; genocide in Darfur; the melting of the Greenland ice shelf; Hugo Chavez's rise to power; drought in the Amazon, Africa, and Atlanta; the rising cost and falling fuel volume of Macalester's energy bills; the evolving storyline of New Orleans after Katrina; the urban blight faced by ethnic minorities in a

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hundred American cities; the collapse of Canada's boreal forest; 9/11; big box suburban development; and killer heat waves in Europe are all symptoms of a central challenge that is now emerging onto center stage as the most powerful force shaping our future. I will assume we know that our relationship as individuals and as a society to the global ecosystem is beginning a process of rapid, fundamental, and earth-shaking change. I will assume that we all know—deeply and personally, not just intellectually—that unsustainable societies by definition do not continue in their current form, that the trends show that change starts now, and that we are preparing to chart a bold course into an unknown future. We can then perceive that the vital question is not *if* our society will transform rapidly and dramatically, but *how*.

We are at the dawn of a new ecological paradigm for society, one that I have seen start to take society by storm. As a society, we are still expecting the old environmentalist paradigm of doomsday language: “not if, but when,” flooding us with guilt and fear that slowly drain away our energy as the challenges to change seem ever more insurmountable. Instead, a visionary ecological paradigm asks us “not if, but how,” engaging us in the most cosmic of choices: what kind of society do we want to become and how will we get there? This is the environmentalism of American labor unions, Third World farmers, and students from the inner city working with visionary racial justice leaders to build, in the words of Van Jones, “a clean energy economy that’s strong enough to lift people out of poverty.”¹ The new environmentalism is radically holistic, hosting discussions in which youth leaders from across the nation address the housing market crisis and Third World trade imbalances in the same breath as they confront China’s coal rush and the desertification of the American Southwest. We are moving beyond seeing the task as cutting carbon to an expansive vision of building a post-carbon society. We are transcending the interest group that operates under a politics of limits. Instead, we are pioneering the power and vision of what some call “the politics of possibility.”² The climate movement is positioning people and human activities deep within ecology and forging a creative environmentalism of hope, determination, and ingenuity, with people power and our positive vision at its center.

In this essay, I attempt to break through the old framework of thinking about the environment and take us to a place where we can imagine and thus build an ecological society. I will take on this challenge in three key areas: our understanding of development, our methods of

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group decision-making, and our sense of self. We may rarely consider these things environmental, but exploring how we sustain ourselves, make decisions, and live our lives will bring us to a far more ecological understanding of the world than anything we are used to now. In each case, I will highlight how what I will call “the industrialization of the mind” is blocking us from imagining the possibility of a positive way forward, and suggest the outlines of the new ecological paradigm that will get us there. When conditioned to think and act industrially, we perceive and thus entrench a society of limits that seeks order and control, rather than envisioning and embracing a society of opportunity in which we seek the dynamic and unpredictable power of collaboration and inter-relationship. The industrialized mind is neither accurate in describing the world around us nor useful as a guide for the future, yet it has become a dominant paradigm.

In an industrialized worldview, we largely see the world as “the way things are,” whether controlled by governments outside of “us,” economic rules of operation beyond our influence, and/or the “inherent” norms of culture. The industrialized mind manufactures landscapes, economic and political processes, and social relationships by imposing an external blueprint of what “should” be. It simultaneously prevents us from imagining self-reinforcing processes of transformative and collaborative change that emerge from the existing system. Transcending the industrial mind allows us to transcend “normal,” reframing our institutions and interactions from a constraining infrastructure of production that we must work within to an ecological platform of processes in which we participate and upon which we can build—in essence *creating freedom*. Instead of units fitting together through a controlled (and controlling) structure, an ecological mindset relates to the world through social networks and knowledge sharing to create truly ecological relationships. The centerpiece of this radical understanding is that we are participants in global ecology, not observers, and thus can only understand the transformation by engaging it personally, not just conceptually.

I. The New Development

The modern industrial economy, just like other ecological activities, features organisms interacting and shaping materials and energy flows to suit their needs. Unlike most ecological processes, however, the way we do it in the modern economy is rarely well aligned with sustain-

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ing the process, integrating it with other processes it depends on, or even nurturing the individuals that undertake it. The modern human economy understands the world as “raw materials” of little intrinsic value that are forced into useful configurations and then discarded as “waste” when they are no longer useful to us. We regularly make the world less useful to other ecological actors in the process. We develop by utilizing linear processes that are incredibly energy-intensive to maintain. We focus myopically on the value of the useful product rather than other steps in the cradle-to-grave process, and create controlled systems that work for our productivity, but in ignorance and often to the detriment of other ecological needs. Our development is founded on relationships of control and imposed functionality, rather than relationship and adaptive integration. This may seem quite natural to us, but on deeper analysis, it is rather absurd.

Manufacturing steel requires tons of rock blasted out of the earth’s surface, shipped to a smelter where enormous amounts of fuel are consumed to melt the iron out of rock, and then forging it under incredible temperature and pressure using yet more energy in oxygen-starved forges. It must then be shaped and assembled by masses of hard-working people, more recently assisted by yet more fossil-fuel-guzzling machines, for finished products that will someday be discarded, never to return to their final state, or used in structures that cost yet more energy and resources to maintain until they too are scrapped. Making this happen takes yet more mining and drilling for the coal and oil needed to power iron mines, smelters, transportation, assembly plants, and machines—energy that is exhausted as heat and carbon whenever used. We use one-time energy and resources: the energy source, the metal ore, and the space to dump it are all running out and the production line, from bedrock to landfill, cannot be sustained. Meanwhile, the process strips the landscape at the mine construction sites of ecological capacity and threatens its own creators and the biosphere through global warming. What is the alternative?

Spider silk is five times as strong as steel, yet lighter and more pliable. A massive net of it could stop a jet in flight. Yet the most impressive thing about it is the way it is made—quietly, with little fanfare, using only the materials and energy the spider can get from the insects it catches (and by eating previous webs).³ The spider is efficient, avoiding the need for the infernal pressures and temperatures that it cannot create (and we will not be able to sustain), and it creates a product that yields more energy for the spider in the form of trapped insects than

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its creation uses. The spider relies on the blades of grass, shrubs, or trees around it to provide structure for its creation, directly integrating its economy into the broader ecology of its surroundings, which it does not control. If it dies, the spider and its web become resources for predatory birds or decomposing fungi, rapidly used by countless other organisms. There is no *final product* because the spider finds a way to harness and adapt a network of endless and efficient inter-relationships to make its way in the world. Spider silk is not trivial. Scientists are trying to understand the process in order to make our own manufacturing process better quality, super-efficient, and renewable.

In contrast, when we wish to create a comfortable environment for ourselves in the form of a suburban housing development, the first thing we do is raze everything that is already there. Suburban control-based development creates communities filled with open space and trees that are supposed to “fit” by completely ignoring the ecological landscape assets that are already there and bulldozing the landscape to start from scratch. Beyond the illogical treatment of the site itself, its structure and purpose—i.e., intentionally situated far away from the resources that support it—requires exorbitant expenditures of human work, fossil energy, resources, time, and money to first create and then maintain the suburban landscape. We generate entire highway networks, which then degrade the quality of the community we set out to build, to service the transportation needs of citizens who can no longer access food, workplaces, or recreation without spending time and money in costly and tedious commutes. We excavate the landscape to run water mains and gas lines to these far-flung regions, use yet more energy to pump resources to these distant locations, and then face ever-rising economic burdens to maintain and repair them. We relish as the American Dream the ability to live in a stand-alone house surrounded by greenery, but it is intimately dependent on the pollution, congestion, and highway sprawl of our cities, geopolitical conflict, the replacement of our local businesses with big-box stores sourcing products manufactured across the world, and the constant fiery hum of fossil fuel car engines, electrical plants, and basement furnaces. This is really quite bizarre, yet this is considered “normal.”

Another sort of development is possible, one that uses ecology, pre-existing infrastructure and cultural assets, and smart design to provide shelter, food, energy, goods, community, and a sense of place much more effectively and efficiently than the industrial model. By thinking ecologically, a team of Macalester students is creating this kind of

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development two miles away from campus at the Ford Plant site on the Mississippi River and Ford Parkway. We are working with other local advocates to launch ARISE, the Alliance to Re-Industrialize for a Sustainable Economy.⁴ We look at the site, not as blank space on which to impose a new structure, but as a landscape rich in pre-existing ecological and industrial infrastructure that can be woven creatively into a new future. We see the existing rail spur into the site as the ideal route for a transportation corridor connecting the Hiawatha line with the Central Corridor terminus in downtown St. Paul. We see existing sand mines (where Henry Ford's factories made windshields from local silica) as ready-made trenches for a ground-source heating system that could heat the site as well as the surrounding neighborhood. We see a world-class industrial facility ready to be retooled to support Minnesota's rising wind industry, powered by on-site clean hydroelectricity, and generating thousands of family-supporting jobs. Combining these features with transit-oriented community design, on-site food production, and mixed-use residential, retail, and recreational spaces generates economic opportunity that improves environmental quality, ensures more valuable space per the land area, generates accessibility for low-income residents, and produces more carbon-free energy than the community even needs. This community is unique, and by defining and uniting the key assets of the place, we can make a new kind of development.

The two ways of developing land are different in process, not just outcome. The traditional subdivision developer aims for an output of homes that yields a profit, while the students aim for an efficient and fulfilling community. The first process is controlled by the desires of the developer, gives incentives to participation through economic transactions, and involves only the groups that the developer needs to get a very conventional job done. The second process is much more ecological and relies on the participation and guidance of many partners, including local labor leaders, affordable housing advocates, transit planners, city officials, and local residents. It forms an innovative vision and shares the process of implementing it through social networking. ARISE engages top-notch professionals and amateur student visionaries as equals and harnesses the skills of each to advance a common vision: the transformation of manufacturing from a dirty industry (that American society seems dangerously eager to send abroad) into a crucial centerpiece of just, sustainable, and prosperous communities. That vision has become a central contender for the future of the

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site. It is linking with partner projects nationwide, and is included in Congressman Jay Inslee's recent book, *Apollo's Fire: Igniting America's Clean Energy Economy*.⁵ Everything we have done takes ordinary landscape assets, ordinary development practices, and ordinary organizing tactics, and uses them in extraordinary, systematic, and holistic ways. This is the new development.

We can easily imagine how this new development could be wildly positive, but we may be less sure that it is feasible. In order for it to work it must scale across American society and redefine the meaning of "development" for rising giants like China, where coal-based industrial expansion is already killing 750,000 people a year.⁶ At this scale, the challenge seems impossible. We cannot just raze our suburban infrastructure and build local communities in their wake. For every new, ultra-clean Green building, there are a thousand energy-sucking big boxes that will not be "unbuilt" anytime soon. For every intentional community, there are ten thousand sprawling, highway-crossed suburban developments. Even if we know of a better alternative, we rely on our current infrastructure so much that we could not survive the process of demolition and building a new structure. We may tinker with marginal changes to the fast-moving vehicle that is our economy, but international diplomats agree in every dispute over who is responsible that it is just not feasible to stop our course in order to change the engine. The industrial mind-set has taught us to think that our society can only be fundamentally remade in structure and function by scraping the current infrastructure and using yet more resources and high-tech innovation to build a new one from scratch.

Ecological thinking imagines a radically different story of transformative development, one that weaves innovative new infrastructures unobtrusively through existing ones, changing the function and order of existing human systems towards more sustainable models without having to replace them. A new certified "Green-built" house may be Greener than an inefficient one, but knocking down an existing inefficient house to build a new one is not only far less profitable or feasible but also less sustainable than making small, inexpensive (even profitable) tweaks to an inefficient home to cut its energy usage in half, as Macalester students are doing with the EcoHouse.⁷ Where we will never bulldoze new rail lines through neighborhoods, we can use existing rail corridors (and later highways as car use declines in usefulness) to generate transit routes that then provide incentives for cluster development around stations. The new development works by mak-

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ing the first small changes to existing conditions in ways that trigger synergistic and holistic change, like the Green Belt movement started by Kenyan women to improve their quality of life, social authority, and the productivity of the land by planting trees.⁸ The new development does not construct the new future, it lets it grow.

At a meeting, someone asked whether my work was revolution or evolution, implying that the structural changes the climate movement drives are far more transformative than anything the environmentalism of the past has imagined. They are, but I found it an interesting question because revolution usually implies breaking down the old world order and starting anew, which is a far more conventional and status quo understanding of remaking the world, and one that accepts the industrialization of the mind. Evolution is far more revolutionary: it transforms the existing world order quietly and efficiently, without breaking the stride of society. The conversion of trapped insect to web through a spider's ecology is far more transformational, simple, and context-dependent than the conversion of rock into steel through fiery infernos of overwhelming force that we usually associate with dramatic change (although rock and steel are functionally similar, unlike an insect and a web). Too often, we think a fundamentally sustainable development is impossible because we do not hear the roar of its arrival. Yet in almost every community, empowered people are quietly transforming the transportation, food and materials production, energy sourcing, and built infrastructure they depend on in ways that improve them. The new development sows the seeds of its own proliferation by engaging the world as a whole, where no problem is isolated and all actions have multiple, often unpredictable outcomes. The new development is innovation based on uncertainty that cultivates the productivity of those unpredictable outcomes rather than trying to control them.

II. Open Space Governance

Given a radically different vision of development, we must envision a type of governance that plans for processes, not for outcomes, since to be efficient, desirable, and sustainable, outcomes must be derived from the open co-creation of participants. I think the question of ecological governance is far more fundamental and intriguing than whether it will still be run by nation-states. What does governance mean that supports people in self-organization instead of trying to impose structure?

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If we accept that prosperity in an ecological world works by operating creatively in the context one is given rather than imposing a very different vision, then ecological governance cannot be done without people. This brings us to a startling conclusion: radically participatory governance is not just a nice ideal, it is actually fundamental to the future of human civilization. Once again, the task is not to try to imagine such governance in a hypothetical super-sustainable world in the distant future, but how we use such governance in the world we have right now to chart a course forward. Like the new development, the process of ecological governance is the outcome, and acting under a radically different decision-making paradigm makes that paradigm shift a reality.

We think of climate activism as building a mass of support behind policy initiatives to push decision-makers—from the campus level to the national level—to make the changes necessary to solve global warming. Much of the climate movement is doing just that, and in less than a year has advanced the policy of 80% carbon reductions by 2050 from the status of an absurd pipe dream to a mainstream Congressional proposal endorsed by major Democratic presidential candidates. Interestingly, these policy statements say little about what such commitments really mean or how we will get there, a realm that takes action beyond political feasibility. The paradox of the climate crisis as a global challenge requiring mass cooperation is that solutions are so context-specific that they can only be solved locally, and so fundamental that they require the active leadership and participation of local communities and everyday people. Such a premise entails a radical restructuring of our understanding of power: instead of governance being representative and our role as activists being to influence those who make decisions, it is direct. The lives we live, the actions we take, and the worldviews we create and reinforce directly shape the course of the future, overcoming the political suicide that would result if someone else were trying to make these changes for us. This is not a statement about how governance ideally should be; this is how things actually are. The price of oil, the spread of terrorism, the success of the American suburb, and the integrity of the Greenland ice-cap have slipped beyond the control of the American and Saudi governments or the corporate strategy of Exxon-Mobil. These forces are now in the hands of multitudes of American and Chinese energy consumers and the vast array of individuals—whether Islamic fundamentalists or leaders of a clean energy economy—who are driving visions of a dif-

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ferent future. It is time to recognize that truly fundamental problems are beyond the realm of formal government or economic super-powers to change. It is not just that they will not be accountable to us; they quite simply can't. As a network of decentralized decision-makers, we can.

Understanding whom "we" includes is often baffling. Once we as individuals understand that we are part of global governance, we realize that, whether aware of it or not, everyone else is too. We all make decisions that are guiding the course of the world. To a certain extent, "we" are those who recognize our agency and collective decision-making ability and focus on encouraging others to embrace their role as decision-makers and start shaping the world actively, rather than just passively, thus expanding who "we" are almost every day. We cannot be defined by a specific organization or goal (though we have many), but we align visions with others around us and support each other in the process. For an industrialized mind that is used to a well-defined protocol of who makes decisions in relation to whom and how, it can be quite confusing, especially since ecological power structures evolve so quickly. Adaptability is strength, as innovative actors who harness each other's strengths create opportunities for yet more people to embrace their own power. The process of building powerful networks is organic and self-reinforcing.

Open-space governance is entirely oriented around an understanding of governance as ecology, which can be rather disconcerting (even intimidating) if one is not used to it. This type of governance is not limited to established decision-making structures. We can work with anyone. Through collaboration, no goal is impossible. Our role in governing society is based on the relationships we build with others in the system. Certain people (and cultural, economic, governmental, and ecological entities) have unique roles in shaping the future, just as in an ecosystem. Yet no one has power outside their relationship to other parts of the system and thus no one is in control of or manages the whole. We shape the world by integrating our efforts to provide mutual benefits to cooperative change. "Opposition" instigates alliance building and the search for reconciliation towards a positive outcome that we all create, not antagonistic competition for the attention of "the powers that be." Open-space governance succeeds even in conditions of presumed central authority by building its power to shape existing power structures through the exponential growth of social networks as more and more people feel their power by working together. The real-

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ization is quite liberating. If we need to rewrite city law to reduce parking demand at Macalester, we work with the legal planners to do so. If we need to start a company to create the right economic incentives for saving energy, we find and inspire the people who can help. If we need to transform what is politically feasible, it will be a long hard task of getting people to believe, but ultimately, it is completely attainable.⁹ Like the new development, ecological governance is context-specific but uses the existing infrastructure of governance in innovative and dynamic ways.

The course of the world is in our hands. No one can or will take care of it for us, and none of us can make it work alone. The realization calls for the re-imagining of activism. There is little use in just calling for “the decision-makers” to change—submissively through lobbying or aggressively through protest. We must make many of the changes ourselves and engage others in support. The traditional goals of student energy groups, pushing the administration to agree to carbon neutrality for example, fail to meet the needed scale; it only matters if the carbon reductions are meaningful and inspire change across society as a whole. No one really knows how to do this, and pushing such responsibility onto administrators without the innovators who know how to harness the new development sets the initiative up for failure. Such efforts further fail to generate the collaboration needed to engage the institution in the broader movement, missing vital opportunities to build our own skills for operating in a world organized around networks, not hierarchies. MacCARES, CERF, MELT, and other Macalester campus bodies reach far beyond the realm of promoting campus sustainability in order to build innovative models for sustainability and engage Macalester students, faculty, and staff, leaders across the Twin Cities community, and leaders of the youth climate movement nationwide in the process of system-wide change. This is an activism of action, not advocacy: we build it by working. This may sound warm and fuzzy, but the results have been groundbreaking.

I started the Clean Energy Revolving Fund (CERF) as a freshman to confront head-on the funding crunch for sustainability by building a financial tool that funded sustainability projects out of the cost savings they create (up-ending the assumption that Green is expensive), with returns more than three times the stock market rate. We built ourselves into the fund’s management as we created CERF’s guiding principles with advice from a broad range of supporters. Initial funding was generated by student government and departments, demonstrating

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commitment through action, not just words, and communicating both openness to collaboration with campus administration and dedication to going forward regardless. Now at around \$100,000, with projects that are reaching adequate scale (like the full campus light-bulb replacement effort), we continue to empower students to develop and implement creative and cost-effective projects. Notably, we have inspired the emergence of revolving funds at a number of other colleges.¹⁰ Building the fund in a way that included us in its ongoing governance was a test run for the model. Cooperative Energy Futures, the pilot phase co-op that offers tools to foster efficiency at the community level around the country, was built through exactly the same process. By continually evolving ideas via welcoming excited new community organizers, non-profit leaders, local government officials, and venture development professionals, and letting everyone explore bold new applications, we move forward while never depending on the success of any one piece.

When this model of activism caught hold in the work of Macalester's climate leaders at a conference last February, it rapidly transformed the scale and vision of our work, launching many of the groundbreaking projects we have since pursued. The process of getting there was arduous, starting with the shocking realization that the ways of acting in the past would not get us to a thriving and healthy future. We formed a student team committed to making "it" (we were not actually sure *what*) happen by hosting a conference with no speakers and little agenda that showed us what it looked like. Then we applied these principles carefully and appropriately to our organizations, campaigns, and visions. Slowly, over the past year, we have been working this approach quietly into the national movement, until January, when everything exploded.

In mid-January, seven Macalester students hosted a group of twenty student leaders from around the country for a five-day summit that positioned this organizing model at the heart of what we need in a movement. We recognized that the seeds of the new development and ecological governance models are already being planted by students and community leaders worldwide. The central task of our movement is to provide the infrastructure, resources, and vision to empower them. By affirming that making change is the evolution of a system working through governments, economies, cultures, and people's everyday lives, we focus ourselves on the process, not just any one goal. At the summit, we contested the duality of activism and gover-

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nance. The massive movement of networked change-makers we must build to make transformative policy possible is itself the creative force that such policy must serve to empower and sustain. It is time to transform an activism of “you should” or even “you must” into something with far more ownership, vision, and power: “we can.” People are the “technology” that will solve the climate and energy crisis. *We are people power.*

The people in the conference room went off to build think tanks and social networking systems, create summer training programs, build action plans for national non-profit coalitions, generate open spaces based on ecological governance that fulfill the vision of the new future through the process, and partner with the likes of Google and Barack Obama. The process and the progress have been stunning. We have been organizing ecologically ever since, through collaboration and initiatives in a thousand directions at once through a network that is growing toward the global level. While global social movements have so far acted largely in reaction to the spread of corporate power through the use of global networks, we must now build the new future by using the power of those networks. We should recognize that we have the home field advantage. Individuals and local organizations have far more flexibility than governments or even corporations to make relational decisions rather than control-based ones. We are already used to the idea that we live in, rather than control, a network of actors in our personal lives. The challenge is to take that awareness of the network to scale.

The federal government may be necessary to provide coordination and infrastructure for the transformation to a post-carbon society, but it is quite impotent at making that transition. Globalization theorists like Thomas Friedman have observed the declining power of the state in the face of flexible institutions that are better able to harness the dynamic network power of interconnected economic, cultural, informational, and ecological interactions. Corporate, organizational, and community actors are taking on the task of shaping the global future, and they can do so because they can align the resources that participation in the network provides.¹¹ While this realm has largely been dominated by corporations, the groups of people who determine the future of the world are becoming ever more diffuse. This future may not mean the demise of the nation-state or the multinational corporation, although their scale and centralization will become far less efficient in a world where dynamic networks powered by ecological energy

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prevail over the centralized power of fossil fuels. The new future will mean the rise of people working together in a framework of networks, not hierarchies, as the key determinants of our future.

People power must rise as the fundamental force shaping the future of the world, arising from a network of “super-empowered individuals”¹² that in turn empower and engage yet more participants in the process of ecological governance. In this future, we will use the structures that nations, companies, and organizations provide as long as they are useful—there is no need to abolish them—but we will also work across and beyond them. We will be continuously developing initiatives as we implement them by welcoming new individual and institutional participants while never depending on any one venue for approval. Others will carry the ball forward while making it easier for those who are not yet supportive to engage as well. It feels quite invincible.

The process of ecological governance embodies the world it creates in ways that confound the industrialized mind. It is not an operating manual that creates infrastructure independent from the society it builds; it embodies the process of our evolving society. The process is not authoritarian or deterministic. Yet it is simultaneously not democratic in the deliberative sense that too often devolves into endless discussion, agreements of what we should *not* do, interest group trade-offs, and outcomes based on limited governmental resources, not the potential of society. Ecological governance does not sit around debating what we will do. It allows everyone to act through a framework of communication, relationship, and conscious choice that aligns decisions and visions as they prove successful and synergistic. Ecological governance is not done by arbitrators through the passive “consent of the governed” but rather by active participation in the individual’s inherent role in governance. We are already part of the power structure, and it is all a question of whether we realize it and use that power consciously. The more we choose to act on our power, the clearer it becomes that through our actions all of us already have the power of decision-making, and the more apparent and empowering the inescapable reality of ecological governance becomes.

Given our industrial governance ethic, which seeks clear lines of command, static positions of power, and a well-defined boundary of what is part of the governmental machine and what is not, one might expect that an uncontrolled effort would descend into chaos or unproductiveness. As I have found at the January Climate Movement Insti-

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tute and many other events, it does the opposite, allowing participants to shape the event as they see fit, align our visions through a commitment to responsiveness and communication, and reach breakthrough insights that redefine our course. Anyone who has watched ecosystems should know that it works well: no one is in control, all actors make decisions constantly based on the decisions of others, and the system tends to increase in productivity as well as opportunity for new participants as the process continues. Just as there is no “final product” in sustainable development, there is no “final decision” in ecological governance. Choices keep being made in a never-ending process whose progress is its outcome. Ecological governance focuses on unleashing the abilities of synergistic networks that continuously shape the future of society by building the infrastructure for communication and relationship. It understands collective responsibility as the collaborative ability to respond.

III. Living Freedom

We find ourselves living at the remarkable point in time when we must somehow overcome the industrialization of the mind to realize and express our latent potential for ecological development and governance through a new sense of self. This is a very exciting time to live, given that we now have the opportunity to envision and through our lives embody the transformation to a new ecological paradigm. How do we live to both express and fulfill this vision? What does the new ecological paradigm mean for us?

We have long treasured our independence—our ability to resist external influences, our sense of individualism, our sense of self as a discrete and self-defined unit. That sense of self is completely illogical, and it is time to face up to the fact. By number, 90% of the cells in “our” bodies are not human cells, they are microbes. The vast majority of them provide “us” with services that we would not be able to do on our own, with a few just hitching a ride, and still fewer trying to disrupt the biological communities that are our bodies. “Our” immune cells are excellent at identifying and dispatching that tiny fraction that are antagonistic. Antibacterial hand sanitizer, a control-based form of the same job, is not so discriminating. If everything operated so that these interactions were clearly under the control of “our” intention, the literal *inhumanity* of so much of our physical bodies might be less disturbing, but the interactions that allow us to live are driven by so many

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decentralized intentions. Bacterial cells that keep us alive do it for their own survival and prosperity, and only *usually* maintain a homeostatic whole. Debilitating disease, the failure of that cooperation, shocks us by shredding our illusion of control and ownership. We rarely quake in fear at the rogue genetic elements that constantly propagate themselves throughout our DNA, despite the fact that our fundamental code is frantically writing itself to advance its own survival with no thought to our opinion, simply because it *usually* avoids seriously screwing us up (if it did, it would be non-adaptive and would rapidly stop). We like to think that all the genetic coding and well-balanced enzymatic interactions in our apparently orchestrated metabolism are there to serve “our” interests, but that would be ironically “self-centered.” These things are in our interest because they happen and therefore allow us to exist. There is no one conducting the orchestra; we enjoy the harmony that the musicians have collaboratively organized themselves into because that is why we exist.

Many scientists have taken this to mean that the complexity of life is extremely unlikely, given that it organized without outside determination—a long series of random events that just happened to create life. The process of order just happening to arise without imposed structure seems so ludicrous and unlikely that mainstream religion rejects it entirely in favor of an engineering God, carefully constructing the various pieces of the world and making them fit together. Ironically, the two positions reflect the same entrenched assumption of the industrial mind—that complex systems are extremely unlikely to arise unless they are designed by a controlling mind, and that the emergence of such a system independently is almost a mistake. The premise sounds reasonable in a culture used to mechanistic thinking, but it holds fatal flaws, producing an industrialized God and industrialized science. We continue to model the world based on the way we have assumed we are managing it, ignoring the innately context-specific and network-oriented nature of the systems that create our selves and sustain our societies. Based on the model of self-contained and independently defined units, James Lovelock proposed the Gaia hypothesis to model the entire planet as a giant organism, a unit composed of functioning parts united by some broader intention.¹³ Though many ecological romantics have embraced the concept as a more enlightened and earth-centric understanding of the world, it is inherently an anthropocentric (in the sense of how we conceptualize our “selves,” not necessarily how we actually are) and anti-ecological concept. The world is not

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organized around clockwork units functioning together under a central design. It is even inappropriate to talk of the world or nature as a “thing,” implying it is an independent identity. Although it should surprise no one, it is remarkable to realize that, like the biosphere, the self itself fails to fit the model of a unit under personal control. As shocking as it sounds, it may be both more realistic and more empowering to see ourselves as ecosystems.

While we may (ludicrously) dismiss the ecology of our bodies as inconsequential for everyday life, the ecology of our minds forces us to either hide in fear of its implications or step boldly forward to affirm our true power. Just like our collaboratively self-organizing bodies, the landscape of our mind is not independently constructed but collectively grown. “Our” ideas form through countless arrays of interactions with other people, life forms, situations, and landscapes, processed by a unique, self-organizing community of neural networks that communicates electrically and chemically. The truth and ideas about the world that we understand are a function of the way we interact and engage the world around us. This is not saying that there is no reality any more than saying an ecosystem has no order. All it says is that reality is created through the participation of those who work in it, and is thus constantly changing—which seems rather obvious. Our actions and words are shaped not by beliefs and values that we hold independent from context, but by those we generate through a vast web of social, economic, and ecological contexts that shape our assumptions and those of the people around us. Again, this seems quite obvious, and we all agree at the conceptual and academic level, but the implications are profound for anything we consider “normal” or “the way things are” when we apply it to the way we think and live.

“People are motivated by self-interest and greed because collaboration is a sacrifice.” If you believe this statement, then no matter how altruistic and collaborative you feel, you recognize that, tragically, it is illogical to act in any way except self-interest and greed (hopefully moderated by a strong conscience) because collaboration will only be abused. A society that shares this understanding of reality will fulfill its predictions, even if it was not the “innate” nature of the participants. Alternatively, if we believe that people interact through collaboration and mutual support because doing so makes everyone stronger, the society we create will make it far easier to operate that way. The latter principle makes so much sense when we think of the support networks created by our social relationships, a situation in which imposed

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order for personal benefit seems not only unnecessary but despicable. Because we see society as a whole through an industrial mind, in which order is imposed and static rather than dynamic and emergent from the interactions of its participants, the adoption of the former seems to be “just the way things are.” Likewise, the trajectory from primary schooling through college to a “necessary” job to support the “normal” lifestyle that may or may not be fulfilling—or shape the world in ways that you appreciate, or create the types of personal and global relationships with people, economies, and ecosystems that you want—becomes simply *the thing to do*. By seeing our “self” as independent from the reality around us, we avoid the recognition that our view of what is normal or possible is being shaped and changed by the social, cultural, economic, political, and ecological forces around us. It blinds us to the possibility of reshaping that reality.

Once we have relinquished our false sense of autonomy, we can embrace our power to shape the course that guides our “selves” and the entire world together. We suddenly become aware that so many paradigms that have always seemed quite natural are really rather curious assumptions elevated to a monumental level by their manifestations in a society that assumes they are inherent. The “ordinary” state of things, through management-based governance and development by control, becomes simply a path built through society’s choices, by which we mean the process of interaction and relationship with people, ideas, and so many systems, reinforced as we have industrialized our own minds in the process. I have found, and watched many others find, the transformative realization that “normal” or “the way things are” are actually choices that have been made and continue to be made as they are reinforced across society. By choosing our course in the context we live in, we can align the way we live with our values to quite literally reshape both our own reality and the world. We have been seeking security, certainty, and control of our lives. None was ever reasonable, and the fallacy that they are possible will become increasingly clear in the era of rapid global change and the social upheaval it will bring. Just as with the new development and ecological governance, it is time that we sought for our own lives the innovation and opportunity that come with the possibilities of context, and the creative uncertainty that accompanies the constant inter-relationship and change we share with the web of interactions we call our world.

A central tenet of the industrial version of human progress is that we build freedom by gaining greater control over our environment

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and our lives. This philosophy gave rise to the Industrial Revolution itself, the increasingly centralized and mechanical system of governmental and economic power, and the increasing alienation of the self from the context that we shape and are shaped by. The process allowed our economies, our governments, and our cultures to see themselves as outside the world they sought to control, creating the possibility of “bending the world to our will.” Now the bending of the world to our will is bending our society and our lives against our will, because when we shape the world, we shape ourselves. Thinking we were independent, we paid little heed to the broader result. Progress through control of our surroundings has caused us to lose control in frightening and dangerous ways: our economic relationships result in abusive outcomes we never intended; the energy demand that powers our control consumes our economic, political, and diplomatic resources; and the carbon signature of our controlling power starts to unleash ruin upon our society. Freedom through control has paradoxically left us in a paralyzed state in which we either relinquish management or through control feed our own helplessness in a turbulent and unstable world that has gotten away from us. We will not survive a continuation of suburbia, or coal-powered air conditioning to face global warming days, or a government paralyzed to act because it structurally cannot transform the lives of its people. Some have proclaimed this era as the end of progress.

If our freedom has been oriented around imposed control that becomes a societal dream determining our course, our desires, and our values, then it has been quite Orwellian, and we should look eagerly to the opportunities posed by something new. We are at the dawn of a new ecological era, and the freedom that lies ahead is one of interdependence and the ability to influence (not independence and the ability to *avoid* influence). This freedom does not imagine the self in the limited terms of one’s personal life, because we recognize our power as integral actors in an ecological process of innovative relational development and open-space decision-making. This is freedom, not to be outside the ecosystem (which has always been a false premise), but to engage in it creatively and actively with all the power of ecology. We now see human progress in a very new light. It is the process of generating collective freedom, not by constraining the limits others can place on us, but by liberating our potential for collaboration and innovation to bring into being entirely new ways of living.

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IV. Conclusion

At the dawn of a new ecological era, it is time to pursue the way we run our economies, govern our societies, and live our daily lives from the perspective of ecology. Moving past a way of living in the world based on control, well-defined structure, and “normality,” we must embrace one based on adaptation, dynamic inter-relationship, and change. We have entered the era in which the illusion of “the way things are” has shattered, leaving us with the cosmic question of how we move on when forced to proactively, not just reactively, create the reality of the future. I have tried to outline what transcending the industrial mind will look like, piercing into the deeply ecological nature of how prosperity works, decisions are made, and even how we live. In each case, I have sought to demonstrate how exactly the same situations can be approached from a deeply ecological perspective to generate radically different results. As I have argued, one cannot really understand transcending the industrial mind except in context. There is no blueprint for how to build this type of society except as it happens, and the theory is meaningless except as it is made concrete. I have offered a few telling examples, but as this is a paradigm shift that the whole world will be pursuing in the coming years and decades, it is far from complete.

It is time to recognize the greatest confrontation in the history of humanity, to see it all around us, and to recognize that there is no way to be a bystander. We are entering a period of global contestation. Fossil-energy-powered infrastructures of control will vie for the formation of our cities, landscapes, economies, and even our value systems against emergent infrastructures fueled by ecological energy that quietly infiltrate and transform their opponents through integration and relationship. In this global contest, governance by control is on a collision course with a network-based, people-oriented process of relational decision-making that is already starting to reshape the state of global affairs through social networks, the global economy, and the Internet. The landscape of the future is being contested through the collapse or stagnation of old economies and the rise of new ones, the outbreak of energy wars, the rhetoric of political candidates, and increasingly unnatural disasters. It echoes in the halls of international diplomacy and in the survival decisions of the global poor. The conflict expresses itself through the economic downturns, the devastating weather, the uneasy reshuffling of corporate and governmental power

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structures, and the rise of visionary leaders all across the world who know their local work is aimed at shifting the global future. What is rising is what Paul Hawken refers to in the subtitle of his book, *Blessed Unrest: "How the Largest Movement in the World Came into Being, and Why No One Saw It Coming."* All across the world, if you look for people working toward positive visions of a very different future, you will find them, literally millions of them.¹⁴ Alone, none of them amount to much, but they are just learning to use the ecological power of integration and relationships.

Most of all, this is a contest fought over the landscape of the mind, challenging the most deeply held assumptions of the role and nature of the individual, shredding old paradigms of security and control, and opening bold opportunities for innovation and collective capability far beyond anything we can imagine. We are challenged to affirm our interdependence with the world around us, accept our power in shaping it, and take up the challenge of transcending the industrial mind. The breakthroughs at this turning point are cosmic. We are the foundations of development, the creators of value and resourcefulness through collaboration and interaction with a vast array of other actors in a global eco-cultural economy. We are the geopolitical entities that make decisions about the course of the world. We are the creators of freedom, achieving the impossible because we work together with a collaborative force that does not impose, but empowers. Building a very different world is not only necessary and possible, it is happening, and we are all at the steering wheel. It is quite simple: we are the people we have been waiting for.

Notes

1. Van Jones, Presentation at Sierra Student Coalition Shindig, Meridan, New Hampshire, August 12, 2007.
2. Ted Nordhaus and Michael Shellenberger, *Breakthrough* (New York, N.Y.: Houghton Mifflin, 2007).
3. Daniel Esty and Andrew Winston, *Green to Gold: How Smart Companies Use Environmental Strategy to Innovate, Create Value, and Build Competitive Advantage* (Westchester Book Services, 2006), p. 47.
4. Please contact Madeline Kovacs '08, Andrew Ehrmann '09, Kate Ballard '09, or other Macalester students or local leaders like Lynn Hinkle for more information. MacCARES and the Environmental Studies Department have close connections to the project.
5. Jay Inslee and Bracken Hendricks, *Apollo's Fire: Igniting America's Clean Energy Economy* (Washington, D.C.: Island Press, 2008), pp. 40–43, 181–183.

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6. Joseph Kahn and Jim Yardley, "As China Roars, Pollution Reaches Deadly Extremes," *The New York Times* (26 August 2007). Original sources are from the World Bank in collaboration with SEPA (China's environmental bureau) and independently corroborated by the World Health Organization (WHO).
7. The Macalester College EcoHouse is located at 200 Vernon Street, next to the language houses. Stop by for a visit or check out website <http://www.macalester.edu/ecohouse>.
8. The Green Belt Movement is a well-known Kenyan effort launched by 2004 Nobel Peace Prize winner Wangari Maathai. Details can be found online at website <http://www.greenbeltmovement.org>.
9. These three examples are all things the author or other youth leaders have done in 2007.
10. Timothy Den Herder-Thomas and Asa Diebolt, "Creating a Campus Sustainability Revolving Loan Fund: A Guide for Students," *Association for the Advancement of Sustainability in Higher Education* (April 2007). May be found online at <http://www.aashe.org/resources/pdf/CERF.pdf>.
11. Thomas Friedman, *The World Is Flat: A Brief History of the 21st Century* (New York, N.Y.: Farrar, Straus and Giroux, 2006).
12. Ibid.
13. James Lovelock, *Gaia: A New Look at Life on Earth* (Oxford, U.K.: Oxford University Press, 1979).
14. Paul Hawken, *Blessed Unrest: How the Largest Movement in the World Came into Being and Why No One Saw It Coming* (New York, N.Y.: Viking Books, 2007).