

Considering Green Business and Green Values

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What Do We Know?

Our conference program's segmentation into issues, challenges and solutions implies some agreement about how to engage 'green issues' and proceed toward a 'Green New Deal'. Whether we consider energy management, oceanic acidity, the fall in the water table or the end of the age of oil, our target is to find a politically viable, socially acceptable and ecologically sustainable agricultural, industrial and social policies that cohere into an integrated way of being. Prince Charles's 2009 Dimpleby Lecture reaffirms this. Hard though this project might be, it seems one around which we should surely all gather.

Nonetheless I shall take a different position and argue it would be wiser to begin by admitting we have no idea what we are doing. This is not to insult the many now working passionately on green issues; rather, it is about clarifying the distinction between knowing and acting that lies at the core of our eco-age's challenge. With no policy position or revenue-stream to protect, I am institutionally free to suggest our present 'crisis' has less to do with the presence or absence of appropriate policies about energy, public health, or fish stocks than with how we think about matters green. Beneath the debates about what 'the science' does or does not show, or how we might resolve the North-South or Rich-Poor differentials, I shall argue that we are in the grip of an epistemological crisis that runs deeper than any crisis of technology, politics or ecology.

Green problems have a special sharpness because they force us to look into the state of our knowledge about who we are and how we interact through what we do to our world. We are reminded of how much we do not know about this - such as global

warming or the ecology of the deep oceans. My starting-out assertion is that we are confronting a historical break in how we understand the world and here I agree with the Prince, an authority one might not normally cite. Strained circumstances make for strange bedfellows. So I shall divert from our conference's title - 'green business and green values' - to a reflect on 'green' itself, its meaning and how it challenges our ways of understanding.

At one level, of course, the suggestion that we have lost our way might strike some as a reason to turn towards religion, as evident in the Pope Benedict's 3rd encyclical. Many of those grappling with corporate social responsibility, capitalism's contradictions, medical ethics, sweated labor, the prospect of water and pollution wars, and so on are moving in this direction, lamenting our age's loss of religion's moral compass. Engaging this calls for more knowledge, study and reflection than I can possibly bring to the task so I shall look at a narrower issue and suggest a new constructive role for philosophers and social science academics.

These quiet laborers, merely thinking about thinking, often find themselves positioned against activists, energetic business people and policy makers whose primary focus is action - stop talking and do something! But thinking is full of pitfalls and we need thoughtful action, not knee-jerk responses or action for the sake of appearing active. No doubt the widespread urge to act, to establish carbon trading or tighten fleet mileage or gas emission standards, will prove irresistible; it certainly salves our anxieties even as we wonder about the intended and unintended outcomes. That is the politicians' problem. Ecology has appeared on their menu and they must take a position if they are to earn their constituents' support. Academics are not in this situation and must wonder what, if anything, they might bring to the table from their ivory aeries. They might, for instance, wonder at the disappearance of the religious and philosophical frameworks within which green issues would have been discussed 150 or more years ago. I shall argue time is crucial and in losing our way we have also lost track of our time.

Back to the Future

We live in the shadow of the Victorian Age. *Inter alia* it gave us the modern university's agenda and science as the privileged mode of knowing, standing against previous times' less objective modes - religion, politics, feudal relations, and so on. Science's promise was that it would provide each of us the freedom to discover the truth for ourselves, free of intervention or interference by others. But most thinkers appreciated science's victory was far from complete, even as we hesitated to admit it; it seemed to overlook much about human knowing. The developments of pragmatism, existentialism and various forms of post-positive modernism reinforced and articulated these doubts. In the UK the popular appeal of CP Snow's 1959 Rede lecture about 'the two cultures' ¹ made it academically acceptable to say we had two legitimate modes of thinking and knowing. The point being that while the conflict or relationship between science and the humanities remains unresolved - in a philosophical or methodological sense - at least their differences were no longer hidden under a carpet of Victorian dogma. Nor did the humanities need to be grovelingly apologetic as they were in the late 1800s. Nor was pluralism to be considered mere methodological weakness, though justifying and handling it remains a challenge.

Notwithstanding these advances, many academic disciplines seem unwilling to respond to their message, especially those focused on social policy and collective human action. Shying at the methodological chasm, they typically pursue one or other way of knowing, rather than working to bridge between and embrace both - as we see from the ongoing debates about quantitative and qualitative research methods. Likewise some philosophers - perhaps spurred by Snow's agenda - continue to seek an overarching mode of human knowing that, if found, would

¹ Snow, C. P. (1959). *The Two Cultures and the Scientific Revolution: The Rede Lecture 1959*. Cambridge: Cambridge University Press.

surely have a significant part to play in how we might deal with 'green' issues. But we now suspect this methodological Nirvana is forever out of reach and the Victorian dream of total objectivity and universal covering-laws no more than a fogged reflection of Plato's hunches. In the meantime we must confront our situation and make haste to cut away anything that stands in the way of our grasping Gaia more securely. We have nothing but our knowledge to bring to this task. Though our capacity for action is profoundly human it is only acceptable when shaped by our knowledge. This is my point - do we really know enough about our situation to think the green project is about choosing between identifiable actions?

The Place of Doubt

I mentioned religion because some of the deepest disagreements among Europeans during the Age of Enlightenment were around the limits to human knowing, specifically about whether we were imprisoned by 'radical doubt' or could ever achieve certainty or 'God's Eye View'. The ancient religious, humbler than we, presumed not, that it was not given to us to know the way the gods knew. Acceptance of radical doubt - what we might now call 'bounded rationality' - was central for Descartes and Kant and yet, in some mysterious way, Victorian science forgot it. We became persuaded the scientific method of Bacon and Newton could be developed sufficiently to let us achieve 'objective truth'. So my essay's main message is that we might leverage pre-modern doubt into our thinking about today's situation and see more clearly how, in many ways, we are the product and prisoners of Victorian ways of thinking. As long as we continue to deny doubt and thus the shortcomings in how we know we shall remain trapped in the Victorians' ultimately ineffective ways of thinking. Green means challenging such naïve thinking.

Bounded rationality is a way of defining who we are. It reminds us we can never find out everything that must be understood if we are to achieve even the tiniest degree of certainty. We are also limited in our abilities to grasp the implications of the

knowledge we have already developed. Following Popper's popularization, natural science articulated bounded rationality as the method of falsifiable hypotheses about our future experience². Scientific statements should not aspire to be fully certain knowledge of the world, simply close enough to be practical and useful as we act within it. The approved methods of science would produce knowledge that would be reasonably coherent without being in any sense complete. While our knowledge must be shaped by how we humans know, Kant's point, the deeper question of how the result might relate to the world remains unconsidered. Thus thinking about global warming is not at all the same thing as acting by, say, reducing carbon dioxide emissions in the expectation of changing it. Acting engages the world in ways quite different from thinking through the way we have modeled it. The passive and active modes of knowing - as in Ryle's distinction between knowing-that and knowing-how³ - can only converge when we have a complete model of reality, when we have reached beyond our bounded rationality to the place of total knowing. The Victorian dream was that science could be an apparatus like Jacob's ladder that would help us escape our condition of radical doubt and reach this place. Yet, if we care to look, we can see the futility of thinking this way, of looking to science to fix a situation we are creating through our application of science.

The humanities are in a different position; they lack a coherent method or even agreement about how one can know. On the one hand we have various 'historical methods' that range from truth as revealed by the accumulation of historical facts, such as a royal lineage or the sequence of events in a revolution, to the adoption of explanatory paradigms such as the inevitability of a people rising against a feudal power or the impact of acquiring a new military technology. Beneath these different notions of explanation are un-resolvable questions about how to justify the analyst's interpretation and selection, for science's *ceteris paribus* is not available. We cannot put history in the laboratory, extracting it from life and the unknown multitude of

² Popper, K. R. (1969). *Conjectures and Refutations: The Growth of Scientific Knowledge* (3rd ed.). London: Routledge and Kegan Paul.

³ Ryle, G. (1954). *Dilemmas: The Tarner lectures, 1953*. Cambridge: Cambridge University Press.

alternative explanations of every human event. Thus the humanities suggest forms of knowing forever contingent on arbitrary selections of the facts and causal attributions and, unlike science, they lack the methodological apparatus necessary to prove things could not have been otherwise.

So I shall take Snow at his word and contrast our two current ways of knowing - for it is in such ambiguity that we must act mindfully. Note that science and the humanities only seem to be different ways of knowing because we are denied full knowledge. Were certainty available we would not need even one research methodology. Consciousness itself would be enough, for the Truth would expose itself to us without interference or delay. Our research methods are our various strategies for dealing with our particular modes of not knowing and the resulting inaccessibility of the Truth. It follows, as social studies of science have shown as they rediscover Kant's critiques and erode the Victorian dream, that our knowledge is never 'of the world' or of the things we seek to know. Knowledge is always about our own project - making a life and living in the world as we find it. We see that science is one of the humanities after all - inevitably humanist and imprisoned in how we think, forever tied up with subjective interpretations that can never be grounded in an out-of-life 'objectivity'. While philosophers and epistemologists may be excited by exploring how one way of knowing or discovering relates to another or might be better justified and so preferred, the immediate practical issue is to handle the doubt that is the most pressing characteristic of our present situation.

Most understand bounded rationality in psychological terms, the consequence of our limited neural capabilities. But it is also about our relationship to the things beyond the mind that we seek to know. A different way of addressing the same apparent disjunction between our outer and inner worlds is to restate the fundamental difficulties that arise when we discover ourselves located within the system we are trying to know, making it impossible to put it at arm's length and view it objectively. Just as we cannot achieve certainty so we have no access to that

Archimedean fulcrum from which we might survey reality.

Here is the fundamental challenge of dealing with matters green - we are embedded within them, part of the problem and its imagined solutions, in a Wonderland of our own time and making. The epistemological consequence is that until we abandon the pursuit of certainty and objectivity, and the curious dream of being able to stand outside this world, we shall never find our way to the lived heart of our situation and explore possibilities that are not mere masks covering its interactions - such as 'climate-gate' and the debates about the problematic 'science' of global warming illustrate.

Gore continues to do a fine job proposing recent changes in temperature, ice cover, and vegetation are proof positive of our messing up the biosphere⁴. But how can we ever know whether this is correct or not? We cannot conduct a 'natural experiment' on the human condition. So the question is 'Does it matter?' To settle it we would need a complete validated model of the universe and/or access to that Archimedean fulcrum. Gore is neither a fool nor naïve and knows he is a perishable influence around the world, so what is he really doing? I suspect he is deliberately challenging our belief that we have to get the science right before we can act responsibly, knowing that traps us into inaction as we wait for complete knowledge. But what are the alternatives? Is 'the science' all we have to go on?

The problem here is not relativism, the bogeyman positivists deploy to de-legitimize the humanities' ways of knowing. Rather, the deeper challenge it is to grasp that fact that the discussion is about our condition, about how we know and act. There is irony here for Popper's motivations were as much political as philosophical, as his Open Society project revealed⁵. While the knowledge that interested him - as a philosopher of science - was of the non-human, of what lay beyond the humanities, he actually envisaged a science-based democracy. As we wait for that to emerge we

⁴ Gore, A. (1993). *Earth in the Balance: Ecology and the Human Spirit*. New York: Plume.

wonder how to justify choices of human action under the conditions of rampant uncertainty and knowledge-absence that are so evident on matters green. We know we do not have the time or opportunity to act only on the basis of adequately established science, even though there are times it can be informative. Rather we face immediate choices about whether to intervene or not in a world we do not understand. Under these circumstances, if we choose to act, we are morally obliged to surface the interests involved. In other words, while we cannot know the consequences of our action, we can for sure try to find out who is likely to be impacted, who and where are those others who make up the human network. Cotton subsidies in the US affect others in nations far away. Green means uncovering the ways in which such interactions work, it means building workable models of human society rather than of the natural world. It means adopting a humanist kind of pragmatism rather than a de-humanized positivism of 'the real'.

In the absence of certain knowledge and the rigorous plans that can be built on it, we have a Snow's pluralism, two immiscible ways of knowing - a scientific way and a humanities way. What happens here? As we admit this we draw our choosing and acting out of the imagined impersonal world of facts and into the community of those acting and those affected, the very opposite of appealing to 'scientific experts' who tell us they have some privileged access to a neutral objectivity beyond the lived world. Gore's strategy becomes clearer. He is not playing the scientist who thinks he knows reality; on the contrary he is a canny politician working to re-shape the global warming discourse and thereby engage interest groups all too often excluded by the discourse of science. He recasts global warming as a political/social problem, reaffirming the ancient Greek belief that in the absence of certain knowledge all we have is democratic conversation. It alone must synthesize the pluralism within the situational contingencies the discussants are experiencing, allowing them to search for and find a consensus that reaffirms their membership of a single community. Conversation is the crucial process of constructing our

⁵ Popper, K. R. (1945). *The Open Society and Its Enemies*. London: Routledge.

experience and sense of self. Given bounded rationality we have nothing else, weak as it might seem.

What Happened to Our Conversation?

Around 150 years ago the European public conversation changed. The Newtonian model of natural science as the paradigmatic mode of knowing finally delegitimized an older tradition, the ancient art of rhetoric and persuasion that hinged on the philosophical modesty mentioned earlier. Rhetoric differs from logic alone precisely because it is fashioned around shared human situations in which proof and complete knowledge are not available. Reasonable agreement or *pisteis* was the objective - what lives on today as 'beyond reasonable doubt'. The Greeks were sharply aware their city-states could not function without such agreement and the collaborative action that could result. Their leaders could not claim or demonstrate certainty about the outcome of the action called for, even more important when it involved giving up a measure of self-interest in favor of the group. Note that rhetoric is about collaborative human action, not merely about propaganda and shaping opinion, reasoned action's precursors. We realize Greek communal activity, the Olympics, the drama, and so on, were laboratories for their rhetoric and, thereby the creation of the state. From several hundred years BCE through to the 18th century rhetoric was one of three parts of the *trivium*, the central plank in European university education and academic scholarship⁶. Adam Smith, for instance, was a professor of rhetoric long before there was economics. Green is about our need for a new rhetoric with which to create a new state of our world.

As soon as we emerge from the Victorian dream encapsulated in Lord Kelvin's dictum that 'if you cannot measure it, you cannot improve it' we see science itself is no more than a family of rhetorical devices, a trope, a mode of persuasion that has

achieved remarkable weight in spite of being, like every other discourse, ultimately founded on mere assumption. At this point Snow's two cultures collapse into one, that of the human conversation among the engaged. Green matters must be grasped from the subjective humanist point of view, from within our form of life, not as matters of science considered from an imagined objectivist point of view, beyond our life-world. Nature is not something to be understood as a 'thing-in-itself' but as the inanimate that mediates the ways in which we (and the animate) impact each other. The epistemological re-positioning makes green rhetoric very different from the objective discourse of a science far removed from our experience and day-to-day - the nature of black holes, say, or what were the causes of the Second World War? Green matters are about us, inherently indexical, constrained within the here-and-now and how we occupy and make our world. The key choice is always that between our action and inaction, between agency and acceptance or irresponsibility.

We cannot bring this constructive immediacy into our discourse until we have a sense of what is to be acted on. Mere abstractions will not do. Nor can we swallow the whole world in a single gulp. From medieval times through to Talcott Parsons we have been tempted to disaggregate human society into functional layers (Figure 1). While we experience ourselves as individuals we sense levels of analysis and possible action 'above' and 'below' us. Simon, who deserves more attention, saw society as 'partially' decomposable⁷. There is policy at the level of the family, China's 'one child policy', or at the level of the industry, carbon trading. There is the level of sovereign nations and international agencies to demand they control their industries' emissions through their own national legislative processes. In general we need a model functionally relevant to the action modes of the socio-political situation. Again, this asserts no certain knowledge of how human society functions,

⁶ Conley, T. M. (1990). *Rhetoric in the European Tradition*. Chicago IL: University of Chicago Press.

⁷ Simon, H. A. (1981). *The Sciences of the Artificial* (2nd ed.). Cambridge MA: MIT Press.

it is simply a reflection of social action heuristics we have generated over time.

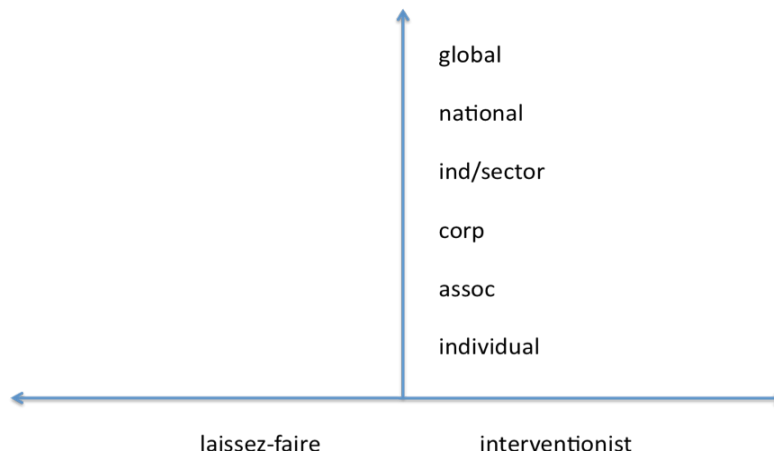


Figure 1: Field of Green

Figure 1 suggests it makes sense to disaggregate any green action to a specific layer. Then we can evaluate it against criteria such as: (a) is there enough understanding for us to consider the decision reasoned, (b) is there the political will to carry the action through, and (c) can we anticipate the consequences sufficiently to reinforce (a) and (b) and can we see where the chips will fall, who will be impacted and how? We live within democratic capitalism, national and increasingly global, and business organizations are some of the most powerful and complex engines producing the goods and services we value. But business is bounded within a context of social, political and legal constraints. Clearly if business is to really engage green, rather than merely hijack its language to benefit its shareholders, its efforts to maximize share-holder wealth must be curbed by the public and the institutions created to implement their conclusions. But it is even more sharply bounded by its rhetoric, what can and cannot be said.

Considering Rhetoric and Political Action

While rhetoric is more art than science, it benefits from several thousand years of thought about how we humans influence each other. First there is the matter of identifying one's audience and what they are prepared to hear versus what seems incomprehensible or immediately unacceptable. This shapes the specifics of what might be said, its 'tropes', the particular language, metaphors, metonyms, and parts of speech and the specific arguments to be brought to the persuasive task. Gore's process is rhetorically rich fully appreciating how his choice of media shapes the audience and what can be said. His deft use of scientific language distances him from pronouncing on 'values', clothing his discourse in a contemporary authority a religious vocabulary, for instance, might lack. Yet his allusion to our responsibilities to future generations raises such issues, especially for so religiously inclined an audience as the United States. Likewise PowerPoint and projected graphics were not available to Cicero or Winston Churchill, but are available and acceptable in our age.

The overall project then is to reframe green matters as the most important and pressing for our collective consideration and to frame them with a language that enables us all to take part in a democratic discussion about our future. Implicit is the caution that such matters should not be left to elected representatives, for their political situation and compromises reduce their inclination and ability to properly engage the issues. Nor should they be captured by science. Can the public reclaim the green discourse as feminists have shown women must claim the discourse of their bodies? What are we really trying to do? Green is about action under uncertain circumstances not about developing better knowledge; the ultimately fatal temptation to inaction. To reclaim the discourse we must bring it to the same level of immediate engagement that we have with the rest of our everyday lives - fetching the children from school, calling on friends when they are sick, deciding to take up a new fitness project, and so on. Gore, as one person trying to show us how to proceed, is encouraging us to realize the contextualized nature of our lives and to

embrace its implications responsibly and moral commitment.

Rhetoric is about language applied to persuasion, not just verbal language, of course, but symbolic communication of all types. The language of science has proved extraordinarily compelling for two centuries, but cannot be sufficient under our present circumstances of bounded rationality. Much of the science that deals with everyday matters, such as genetic engineering or ending life-support, has severed itself from the public discourse, creating a deep practical form of communal not-knowing that calls for the development of a new discourse around medical ethics - a new language with which we can engage the medics whose discipline-driven choices have little attachment to our individual existences yet affect them greatly. In the past families and tribes addressed these questions as matters of social tradition; there were no disengaged specialists standing outside the group.

Green issues likewise demand a language of the engaged. How should we speak with the North-Western Pacific tribes about whale hunting, part of their culture but not of ours? Or with Chinese industrialists about acid rain as they struggle to put that country's impoverished past behind it, a past we do not share? Or with Western states' cattlemen about gaseous emissions as we dine on vegetables flown in from Israel? Without a mutual functioning language we can have no reasonable persuasion and no collectively-arrived-at action. The alternative is some form of science-based anti-democracy that, aside from anything else, implies a significant narrowing of the interests engaged and a temptation to totalitarian sub-optimality.

The argument here is that green issues are, by definition, those of the collectively and subjectively lived world and therefore inherently political - not scientific. Attempts to present them as about the objective world - especially that presumed in positivistic science - are no more than the charged rhetoric of disdain for those whose interests are being silenced. Green matters and how we think about them must be put into a global political context in which all are entitled to be engaged, whatever their life-world. That is obviously a political statement, reminding us of

the impossibility of addressing these issues in a non-political way and that attempts to present them as objectively science-driven are simply political moves to control the conversation.

Possible Languages

But before closing this essay on 'it's all politics, isn't it' - clearly true - we might return to the question of possible languages. The Western modes of thought evident in Snow's contrast of cultures are not widely shared around the world. Huntington's book⁸, whatever its merits, reminds us of Islamic culture and thought and its marked differences from Western thought. Any global conversation about green issues must take alternative ways of thinking into account, just as it must take Indian, Chinese and Filipino thinking and culture into account - and a lot more peoples' besides. Perhaps academe's most significant challenge is to do this language work and thereby help enlarge the discourse, rather than leave it to the politicians of the moment. In short, green issues challenge us to globalize academe and so marshal the human race's knowledge resources in ways that have not been imagined since the Abbasid translation project and its attempts to codify the Book of Human Knowledge⁹.

Nor is the Western situation as simple as Snow suggests. Since Victorian times and the noted contrast between scientific objectivity and subjective interpretation the public discourse has been augmented by two additional modes of human knowing, giving us four main modes to contrast with the Newtonian one that was dominant for so long. The most influential is evolution, propelled into our discourse by Darwin and Spencer. Before dealing with this I note a fourth, now being reshaped by brain

⁸ Huntington, S. P. (2003). *The Clash of Civilizations and the Remaking of World Order*. New York: Simon & Schuster.

⁹ Gutas, D. (1998). *Greek Thought, Arab Culture: The Graeco-Arabic Translation Movement in Baghdad and Early 'Abbasid Society (2nd - 4th / 8th - 10th centuries)*. Abingdon Oxon: Routledge.

research, the science of consciousness, the exploration of the physiological, biochemical, or neurological core of the human condition. For many this promises to an underpinning to all forms of human knowing, a final reconciliation between the purity of logic and the nature of Mind. For others this raises the paradox of expecting the human mind, as the apparatus that produces all knowledge, to stand outside itself and understand itself - matters that need not delay us here.

For clarity these four alternative modes of human knowing can be arranged along two dimensions - time and agency, or more specifically, given the essential subjectivity of human knowledge, human time and human agency. We can distinguish between epistemologies that presume what is to be known about is fundamentally static or universal, such as the positivistic laws of nature; time-less and true at all places. Some presume the soon-to-be-revealed laws of brain function will be of this type. Against this time-free view we can place a dynamic view, and here evolution is the archetype. So long as we presume evolution is not towards a knowable end, mere teleology, be that perfection or equilibrium, it is a way of thinking about our engagement with the eternally dynamic as species evolve to create a new situation, so demanding further evolutionary adaptation by other species.

The evolutionary metaphor has been very productive for the social sciences and the humanities, as it has been for the life sciences, but its impact is often misunderstood. Ultimately it is about the difference between our lived time and Nature's, between the time we make and the time that is beyond our influence. The distinction above is also that between passive fatalism and engaged agency, between accepting the world as we find it and acting to change it. This distinction has been influential in European thought at least since the time of Vico, who argued for two universes of human knowledge; Nature, that which we could observe but not know fully because

it was created by God, and that which we could know in quite different ways and even fully because the things known were created by us, such as our legal systems¹⁰.

	<i>universal - equilibrium</i>	<i>dynamic</i>
<i>natural</i>	positivist science	evolutionary thought
<i>man-made</i>	science of consciousness?	humanities' lived-time

Figure 2 - Time-modes of Human Knowing

Time is reinserting itself into our discourse and becoming an issue for contemporary philosophers, in the work of Bergson and Heidegger especially. The latter distinguished between logical time, which positivist science might use, and the lived time of *Dasein*, subjective time. As we shift from the left side of the matrix to the right side, evolutionary thought is attractive because it clamps down on the inherent relativism that might otherwise render the analysis viciously circular. The selecting agent is Nature not man. But, as a result, evolutionary time must be measured in terms of species change, not in either logical nor lived times. Green means abandoning all notions of time that are detached from the human lived experience - such as logical or evolutionary time - and adopting a time subjectively contextualized in our life-world in terms of our life-choices.

If green matters were merely about politics there would be fewer constraints over our actions. We could discuss and agree, and modern communications means this can be amazingly rapid. Likewise we are mistaken if we think people are inherently conservative and take a long time to change their views. Even the most casual

¹⁰ Berlin, I. (2000). *Three Critics of the Enlightenment: Vico, Hamann, Herder*. Princeton NJ: Princeton University Press.

reading of the happenings during the French Revolution reminds us that people and their actions can change with terrifying speed. Green matters are especially demanding of our modes of knowing precisely because they are not only about politics and the common will; they often engage the natural world which has its own clock/s. A species' reproductive cycle constrains to our agency and the changes we might wish to make in a species' population. Breeders know this and work with it as an unchangeable time-ness that limits their agency just as the Second Law of Thermodynamics does, it sets limits to how time can be experienced in that milieu.

If the life-world centered green discourse is indeed constrained by what man did not create (Nature), the challenge is to see how science's tremendous achievements can be brought in without pushing all other discourses aside. The power of radical doubt is that it denies science its victory. Science becomes a handmaiden to human persuasion, not its master. *Logos* is powerful but can never be determining or leave *ethos* and *pathos* behind for their interplay mirrors the human condition. Rhetoric is about persuading thinking, feeling and socialized human beings not logic engines.

It is useful to look at how Clausewitz argued strategy - what we might call leadership or effective rhetorical practice - begins when the general confronts the limits to the various actors' knowledge. But he also argued that this meant little separated from the context and practice of battle. In military terms, strategy (a) is about choosing the time and place of engagement and (b) must accompany the army into the field and reconstruct its context continuously as the battle unfolds¹¹. Military leadership is about the interplay of determining and adapting to the changing context of action. While this pushes the general's agency to the fore, denying any scientific model or theory priority, science can provide some powerful and rigorous language for defining the context and communicating the leader's intentions. We can plot the enemy positions and tell our troops to advance out of

¹¹ von Ghyczy, T., von Oetinger, B., & Bassford, C. (Eds.). (2001). *Clausewitz on Strategy: Inspiration and Insight from a Master Strategist*. New York: John Wiley & Sons.

their line of fire. We can use the 2nd Law to calculate the heat losses and energy demands of various action options. Science, along with the relevant social, legal and psychological constraints that lie beyond the rhetor's influence, helps describe the context of action without determining the general's choices. It helps outline the socio-political context into which human agency is projected - what we might call the solution space. That space is the lived-world and cannot ever be defined by science alone. Clearly science is essential to the green discourse, helping define some options, but its hegemonic impulses must be restrained and held subservient to the life-world and its own lived time. As leaders make green proposals they engage human audiences with deep intuitions about how time works in their lives. Lived time is remarkably fluid and changeable while logical and evolutionary times are not. Thus rhetoric is often regarded as the activity of making others aware of possibilities they had not previously refracted into their everyday living. A rhetor's ability to frame green issues is constrained by these experience-based time and space intuitions for they are, by definition, in the audience's lived world, one far from the laboratory or the library.

Overall my essay argues green issues cannot to be considered objectively in the ways normally implied by the scientific committees meet and experts as they pontificate or as natural experiments to be conducted by governments or corporations. Those affected lie outside these constellations of power and must seize the conversation. Green matters' difficulty lies precisely in the fact they are lived and are inherently political. Stakeholder theory, workable or not, is likewise inherently green because it is about negotiating the distribution of burdens and benefits among the people involved. Corporations have no capability to be green beyond their stakeholders' actions, and are seldom open to what all of them have to say either. The bottom line is that green is not merely intellectual, academically interesting and demanding as it might seem. Thinking productively about it cannot be disengaged from the political, social and economic realities of our life-world. Green demands, on the one hand, a new appreciation of the limits of scientific thinking and, on the other, an appreciation of the limits to political and economic

possibility. To pretend otherwise is to put off the post-modern realization that we are being challenged to think beyond technological fixes to the problems that our technologies have created, beyond transferring green problems to those claiming scientific analysis is power, and conclude that green presupposes making our species' collective experience and expectation central to the discourse. This might move us onward from the academic elitism of Enlightenment thinking to a green humanist conversation before it is too late, before our lived time runs out. Doing so it might open up a new universe of life-world-centered ethics and morality that could take us back to the animism of previous pre-scientific or pre-modern civilizations.