

Biogeography and ecology in crisis: the urgent need for a new metalanguage

πάντα ῥεῖ οὐδὲν μένει

“All is flux, nothing is stationary.”

Heracleitus (Ephesus, 6th Century B.C.)

As we approach the Millennium, it is my fervent belief that popular biogeography and ecology are in crisis. If they are to survive into the next century as credible entities, both must experience a significant Kuhnian paradigm shift. Unfortunately, this paradigm shift is currently proving impossible to effect because many practitioners, both professional and amateur, cannot bring themselves to recognize the crisis phase through which they are now passing. Our ecological language is suffused with a desire for ‘stability’ and ‘safety’ (the so-called ‘precautionary principle’), whereas, in reality, all is Heracleitan flux, and we can never ‘step into the same river twice’. We are trying to replace human flexibility and adaptation by god-like control and stasis, and it will not work.

THE LIE OF KYOTO

The terrible experience of the Kyoto Summit on ‘greenhouse warming’ was surely warning enough. As I watched the debate unfold, I increasingly felt like Heracleitus himself, observing the folly of the Ephesians from his hermit-home high in the mountains. To hear ecologists talking about ‘halting’ or ‘curbing’ climate change was deeply disturbing, but for them to try to make the world believe that this ‘stability’ might be achieved through manipulating just a few variables out of the millions of interlinked and dynamic factors which govern the world’s climate is frankly sinister. Let us be blunt; it is a lie, a disgrace to the subject, and a scientific nonsense. In similar vein, our continuing obsession with ‘forests’—and the ever-asserted ‘evils’ of deforestation—causes us to ignore the whole ecological history and pattern of the Earth, not to mention the vast tracks of land and ocean where there have never been any forests at any time. Only a New Englander, such as Henry David Thoreau, could write that: ‘. . . Nature endeavours to keep the earth clothed with wood of some kind’ (Dean, 1993). One could go on—our subject is littered with such ‘false ecologies’; but the point is made. The whole of popular ecology and biogeography is warped, dated, and increasingly dangerous for the survival of humanity. Why?

SEMIOTICS AND LANGUAGE

I believe the answer lies in the semiotics and language of biogeography and ecology. Our subject’s metalanguage—that is, the overarching language which governs the thoughts and expressions of all of us, both professional and popular—is deeply flawed, yet it remains so powerful that it continues to override what ‘real’ ecology is actually telling us. The ‘key signifiers’ of this metalanguage (the *points de capiton* of the philosopher Jacques Lacan (1977; see also Leader, 1995)) have all been derived from certain historic and regionally-specific sources, well exemplified by Thoreau and New England: the hegemony of forest ecology (Moore, Chaloner & Stott, 1996; Stott, 1997); the hegemony of equilibrium notions (Sullivan, 1996); and the hegemony of Europe and North America over ‘the rest’ or what Edward Said (1993) has termed ‘orientalism’. Because of the essential control exercised by such language ‘signifiers’, and despite the cogent critique of so many scientists, from Gleason (1926) onwards, we continue to think and speak our ecological ‘signs’ in terms of climaxes, optima, balance, harmony, equilibria, stability, ecosystems, synecology, and ‘the exotic other,’ like tropical rain forests (the ‘jungles’!) and the giant panda (can we please have the smallpox virus on the collecting cans of the WWF instead?—it too is part of ‘biodiversity’).

In doing this, we often ignore what we really know and what our own research should be telling us, research which is consistently opening up to us a non-equilibrium world, in which change takes place all the time, in all sorts of directions and at all sorts of scales, catastrophically, gradually, and unpredictably, a world in which means are ‘meaningless’, and a world in which autecology rules,

both past and present, and prediction is very, very difficult. For many, the resultant tension, which is as traumatic as any that existed between 'creationism' and 'evolution' in the late-Victorian world, has painfully split their personalities, so that they say one thing in public, and another before their peers. 'False ecologies', like false relics, are good enough for the faithful 'Greens', if the ends justify the means! For others, who must sadly, and often desperately, cling on to the wreckage of the metalanguage they have held so dear for so long, the 'key signifiers' have been adjectivally (and very conveniently) modified to permit their continued use, so that 'development' is now always 'sustainable', while the non-equilibrium world is reduced to the 'disequilibria' of 'multiple-equilibrium states'! A virtual contradiction in terms!

TOWARDS A NEW METALANGUAGE

Colleagues, all this will not do. Much of what we write about topics such as the tropical rain forests is untrue, and we know in our heads that it is untrue, and people are not fools, for they increasingly know it is untrue. We delude ourselves, and all the folk who inhabit this restless Earth, if we do not accept change as the norm and stability as an illusory, and ultimately, dangerous goal. The inevitable application of equilibrium solutions (under the guise of 'sustainability') to a non-equilibrium world may finally prove to be the very worst chimera of them all, and, in continents such as Africa, it could even be regarded as a criminal act. We have to replace our Northern-derived, historic metalanguage of 'equilibrium', 'sustainability', and 'balance' with a different metalanguage, more accepting of change and comprising a new range of 'key signifiers', including 'adaptation', 'migration', 'movement', 'opportunism', 'flexibility', and 'resilience'. We will also require a new and more radical approach to the political ecology and economics of risk assessment. The language of non-equilibrium will then come to the fore, and, like King Canute before the surging sea, we will begin once again to show some humility in the face of our uncontrollable and unpredictable planet.

In this new metalanguage, fire, drought, seasonality, and cold should no longer be seen as 'ecological stresses'; such a concept of 'stress' can only exist if we foolishly maintain a classical norm of 'stability', 'some Eden of perfect rainfall and equability against which all other habitats must be assessed' (Stott, 1997, p. 208). There is no such Eden, and, for most plants and animals, the absence of fire, cold or seasonality may prove a greater stress than their presence. Life itself was, after all, born out of fire, and Prometheus gave fire to humans as a gift; for Heraclitus, fire was the Universal Principle of Life. The driving forces of abiotic change must therefore also be regarded as the norm, and not the internal adjustments of biological systems.

Once again, our traditional metalanguage has caused us to stray; but perhaps the greatest 'wrong' is the fact that we biogeographers and ecologists so often seem to dislike 'people'; people are 'signified' in our metalanguage as 'the problem'—the teeming millions, who destroy the Earth and upset the 'balance' and 'stability' we so desire! In any future metalanguage, people must be 'the opportunity'.

PROFESSOR PHILIP STOTT
Editor, *Journal of Biogeography*

*Department of Geography,
School of Oriental and African Studies,
(University of London),
Thornhaugh Street, Russell Square,
London WC1H 0XG, U.K.*

REFERENCES

- Dean, B.P. (ed.) (1993) *Faith in a seed: the dispersion of seeds and other late Natural History writings by Henry Thoreau*. Island, New York.
- Gleason, H.A. (1926) 'The individualistic concept of the plant association.' *Bull. Torrey Bot. Club.* **53**, 7–26.
- Lacan, J. (1977) *Écrits: a selection*. (Trans. A. Sheridan). Tavistock, London.
- Leader, D. (1995) *Lacan for beginners*. Icon, Cambridge.
- Moore, P., Chaloner, W. & Stott, P. (1996) *Global environmental change*. Blackwell Science, Oxford.
- Said, E.W. (1993) *Culture and imperialism*. Chatto & Windus, London.
- Stott, P. (1997) 'Dynamic forestry in an unstable world.' *Commonw. For. Rev.* **76**, 207–209.
- Sullivan, S. (1996) Towards a non-equilibrium ecology: perspectives from an arid land. *J. Biogeogr.* **23**, 1–5.