Sustainability Essentials: Take 2

PLURALITY, PLURALITY EVERYWHERE: THE LABYRINTHINE COMPLEXITY OF THE SOCIAL DIMENSION OF SUSTAINABILITY

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We strive for the singularity of a shared purpose or vision; for the single best to be done. We know the duopoly of markets and governments. But how can the immense complexity in all the world be vitrified into a pair of monoliths, to be slotted smoothly into the simplicity of just a two-compartment bin for characterizing the ways of Society — especially in respect of establishing the social legitimacy of what is to be done "sustainably"? It cannot.

In 2004, when Beck hosted a Seminar at Imperial College London (on "Sustainability: Never Mind the Engineering Principles — Just Deal with the People, Politics, and Public Relations"), a Professor in the Department of Civil and Environmental Engineering accused him (on that day) of having done nothing more than re-discover that there was a Society "out there", with which engineers have to deal.

Sooner or later, engineers come to realize why they have become engineers. There are even scientific papers pointing towards autism as having perhaps had something to do with it.[1]

Dealing with Society out there may not come naturally to us. But we might yet gain entry into the realm of these dealings through the eyes of those to whom it does come easily, and does so from a conceptual standpoint based in Anthropology. In fact, it is one with much appeal to engineers, especially control engineers. Access takes two steps, beginning with the thinking of an Ecologist (C S Holling), who himself understood well the notion of adaptive control, which engineers were developing in parallel at the turn of the 1960s/70s.

Consider the dynamic behavior of Nature to be as that of the motion of a ball-bearing on a surface, as in any one of the four panels of Figure 1.[2] Where the ball-bearing is on the surface at some point in time is the "state of Nature", for good or ill.

[1] Baron-Cohen, S, Wheelwright, S, Stott, C, Bolton, P, & Goodyer, I, (1997), "Is There a Link Between Engineering and Autism?", *Autism*, **1**, pp 101-108.

[2] Redrawn from Thompson, M (2002), "Man and Nature as a Single but Complex System", in *Encyclopedia of Global Environmental Change*, **5** (P Timmerman, ed), Wiley, Chichester, pp 384-393.

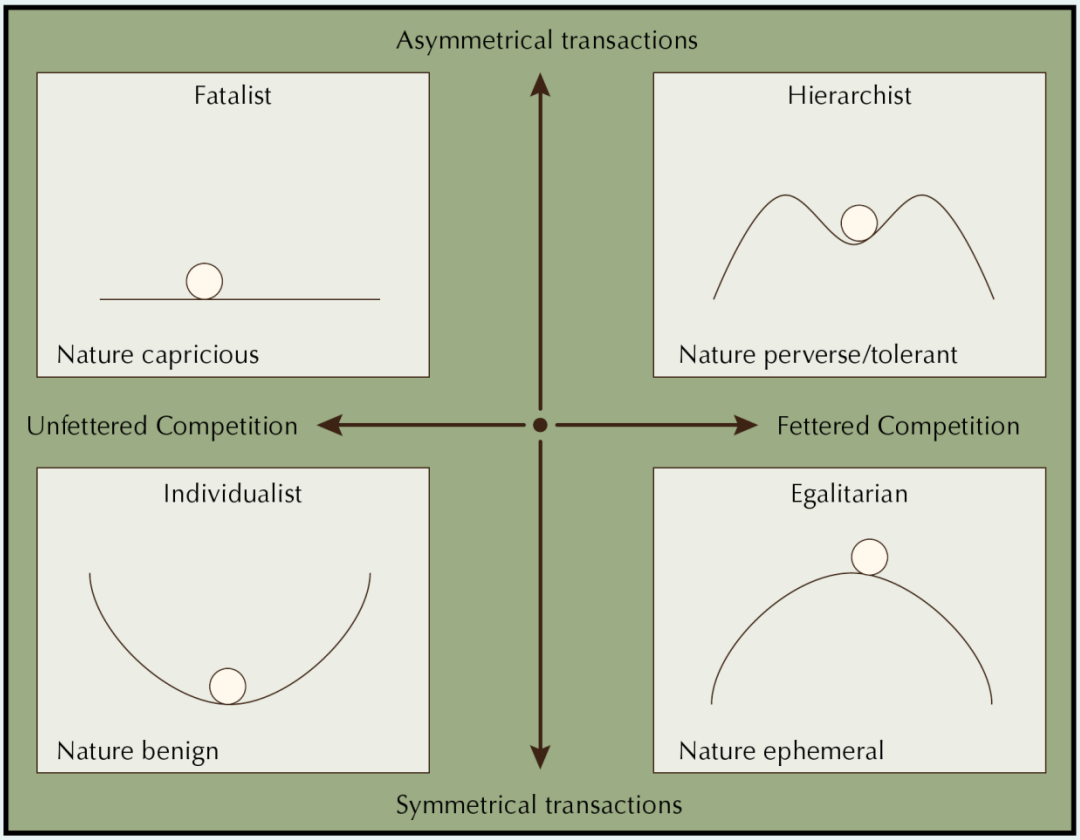

Figure 1:
Thompson's "solidarities", and their respective Myths of Nature (from Holling). The metaphor is that of a ball-bearing (the state of the system) rolling about on a surface (of potential energy), where local stability and stasis are defined by any points on the surface with (locally) a zero gradient.

If we view the world as "Nature benign" in the lower left panel of Figure 1, any striking of the ball-bearing, no matter how large this disturbance, will cause it to oscillate back-and-forth, up-and-down the surface, but always to come to rest at the bottom of that surface. No matter the insults and injury to Nature, it will always return to the state we have come to know and cherish.

To the right, in the lower right panel of Figure 1, the merest touch upon Nature will cause the ball-bearing to crash out from its precarious, unstable equilibrium, into some possibly unknown domain of disaster. "Nature ephemeral". Above this, in the upper right quadrant of Figure 1, "Nature is perverse/tolerant". Nature can take a buffeting, but only up to a point, for if struck too hard, the ball-bearing will again crash out into disaster. Finally, in the upper left panel, there is "Nature capricious". As the blows come, so the ball-bearing is moved every which way across the flat surface.

Now we must take a second step, from Ecology to Anthropology, in particular, to the Anthropology of Michael Thompson and *Cultural Theory*.

The risk-seeking, entrepreneurial Individualist looks upon Nature as benign (in the lower left quadrant of Figure 1). S/he

argues for unfettered competition and favors social transactions that are symmetrical, nowhere privileged by rank or status along any dimension of Society. Competition in the market place is conducted on the most level of playing fields.

The Egalitarian would agree on the virtue of such symmetrical transactions, yet vehemently abhor the unfettered competition so beloved of the Individualist. Retreat from risk wherever it may be! Nature is ephemeral for the Egalitarian (in this lower right panel of Figure 1) and Man should be caring and sharing; we start out equal in life, and we should end up equal.

The Hierarchists, in their upper right camp, know that the behavior of Nature should be kept within certain discoverable and predictable bounds. Fettering of the competition, in which the Individualists are so busily engaged, is due. Risks can be managed. Transactions for the Hierarchist are asymmetrical: what the "higher-archs" are sanctioned to do unto the "lower-archs" is not identical with what the latter are permitted to do unto the former.

And then there is the poor old Fatalist, for whom nothing in the way Nature may behave makes any sense. It is all "noise"; no identifiable "signal" in that behavior, by which to learn. Why should the Fatalist vote? After all, the government always gets elected. Let come what may: the Fatalists are the "risk-absorbers".

Departing from the engineering mechanics of ball-bearings on (potential) surfaces, lo and behold, we have entered the domain of socially-constructed world views, social dynamics, entrenched convictions, and dissent, dispute, and negotiation. Plurality, plurality everywhere: in hopes and fears for the future; in styles of managing Man's interactions with Nature; and in styles of Engineering for sustainable development (as Thompson would argue, "Sustainability is an Essentially Contested Concept"). There is a plurality too of wisdoms, from which to benefit, on how Man should get along with Nature and his fellow Man.

This is not the pre-determined poverty of just two ways of managing the world and the Environment — the free market or the fettering by government regulation — with the one replacing the other, when its failure becomes manifest, as it will. Nor is this utter bewilderment for the engineer: in pondering an infinite plurality in Society and the labyrinth through which forward movement in its social negotiations might have to be threaded. It is the richness, albeit indeterminate, of just four archetypal ways of viewing and interacting with the world. Just a four-fold bin, in other words. Failure of the free market could be followed by an era of government regulation, whose failure in turn might — just "might could" — be succeeded by an era of the shared, collective moral restraints of egalitarianism, whose failure might then give birth to ... to what?

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