

*'Trans-disciplinary conversations on transitions to sustainability'*



<http://notesofnature.blogspot.ie/2013/06/in-garden-whats-in-my-lawn.html>

A role for **diversity**  
in achieving sustainability  
through ecological, social  
and economic domains

Dr Edmond Byrne  
Process & Chemical Engineering, UCC

EC RPA: Sustainability in Society Conference

University College Cork, 5-6 Sept. 2013

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*"Anyone that does not want a splash of daisies and clover across their lawn, with frequent visits from the wonderful bees and insects that choose to feed from these, is insane. I curse those with immaculate, carpet-esque lawns, devoid of life"*

Tom Young (2013)\*

\*Beyond the Riverbank blog; 'Mini Garden Survey: Perfect lawns are for prats!', 4 July 2013

<http://tomyoung89.blogspot.co.uk/2013/07/mini-garden-survey-perfect-lawns-are.html>

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Modern conceptions of progress, based on the dominant Cartesian reductionist paradigm, are associated with a linear drive towards ever greater **ascendancy, order, organisation, homogeneity, hegemony, performance,**



**efficiency and control.** ..and towards extinguishing **disorder, inchoateness, uncertainty, redundancy and risk.**

By this dualistic framework, **diversity** is conceived as a threat to system **organisation** and **efficiency.**

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Contemporary conceptions of sustainability & sustainable development, framed within this paradigm, align with such ideas of **'progress'**. Sustainability itself is seen as an unending process characterised by greater **efficiency\*** and **control**, realizable for example through **technological prowess, more organisational structure, utilization of 'smart' systems & 'big data'** and **risk extinction**. Such increased ascendancy can, it is envisaged, even build system **resilience.**

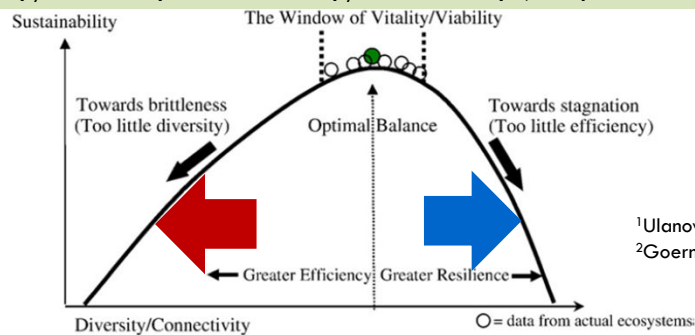


\*Jevons' paradox is conveniently overlooked.

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A conflicting picture emerges from a complex systems perspective however. It's been shown quantitatively<sup>1</sup> that sustainable ecosystems maintain a dynamic balance between opposing but necessary tendencies of ascendancy/efficiency and diversity/redundancy (complimentary dualism).



<sup>1</sup>Ulanowicz, 2009  
<sup>2</sup>Goerner et al., 2009

**Sustainability as a dialectical balance between homogeneity/efficiency and diversity<sup>2</sup>**

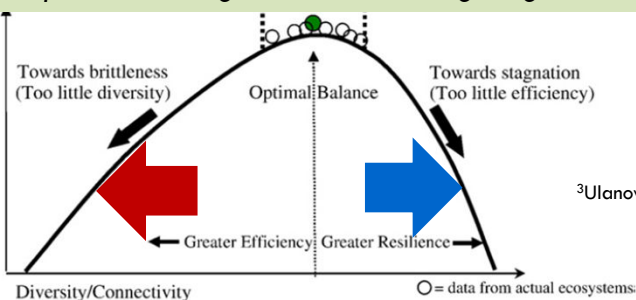
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While antagonistic at a local level, there is mutual dependence at higher levels<sup>3</sup>:  
 "A requisite for the increase in effective orderly performance (ascendancy) is the existence of flexibility (reserve) within the system. Conversely, systems that are highly constrained and at peak performance (in the second law sense of the word) dissipate external gradients at ever higher gross rates."



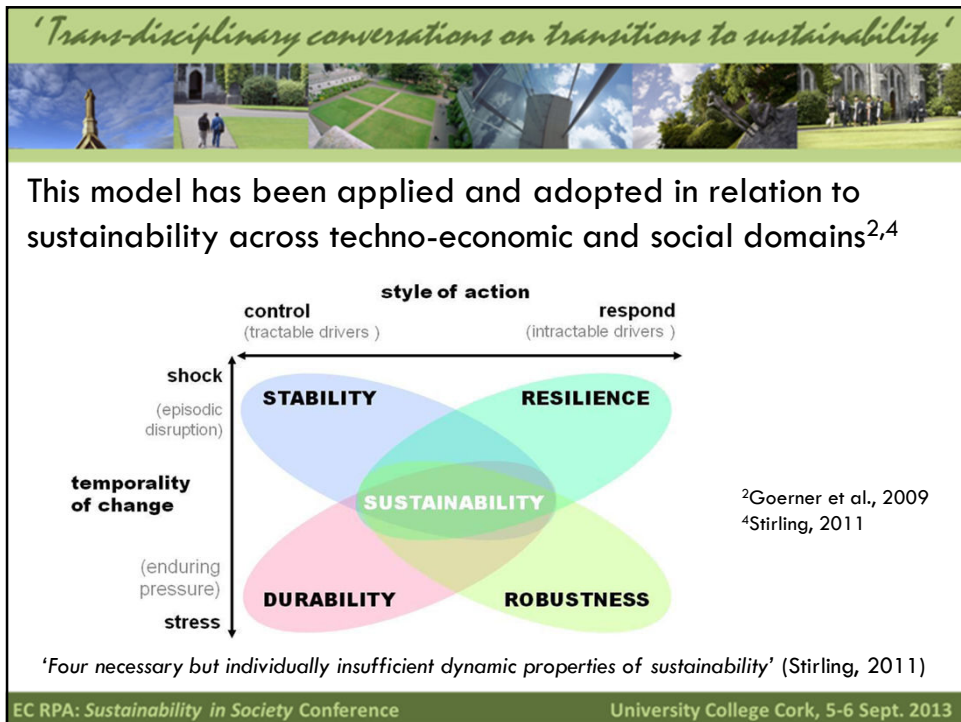
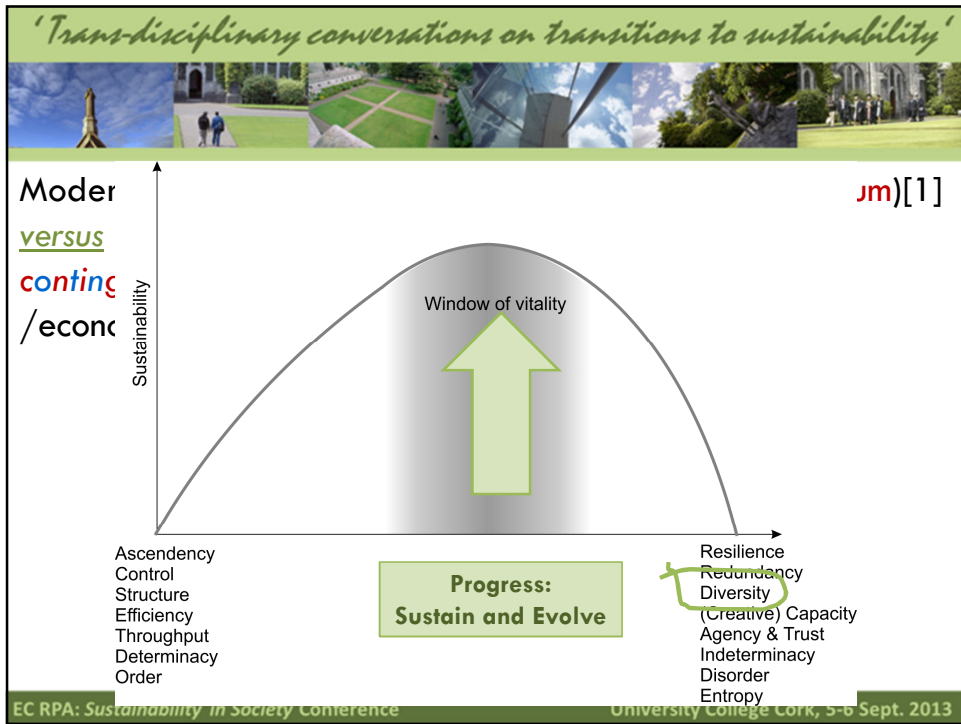
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Some examples:

Intensive industrial/monocrop agriculture **versus** Diffuse microgeneration and distribution of electricity

Globally centralised lean manufacturing **versus** localised and artisan production

Hegemonic globalisation **versus** local economic subsidiarity

'Survival of the fittest' individualism **versus** interconnected social solidarity and cohesion

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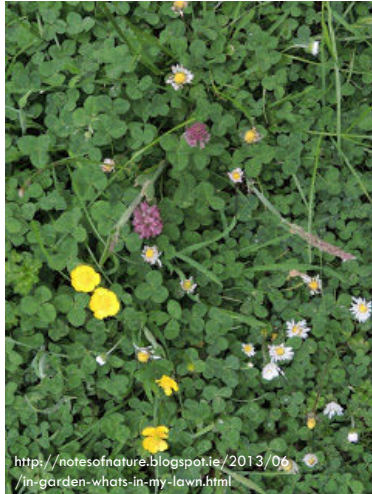
To Conclude..

A vision of progress which seeks to extinguish **uncertainty** to gain ultimate **control** is as delusional as it is potentially dangerous. It is directly analogous to seeking to violate the 2<sup>nd</sup> law of thermodynamics by conceiving an **isentropic universe** or a **100% efficient machine**; an impossible and unsustainable mirage!

Instead sustainability can only be achieved through recognising progress as a contingent balance between **ascendency** and **redundancy**, between **homogeneity** and **diversity**.

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