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

Alternative Economies and Societal Innovation

Paradigms Lost? Trans-disciplinarity, Societal Innovation and Alternative Economies

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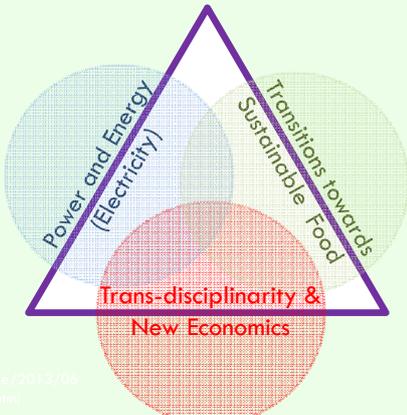
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Alternative Economies and Societal Innovation

Structure: **Societal Innovation; 'New Paradigm Thinking'**



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CRISIS

Shoulder to shoulder, let's break the cycle.

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Early Modernity; (second) Origins (Toulmin, 1990)

'Scientific' modernity epitomised and driven by **Descartes** (1596-1650). He sought **certainty** through **rationality**, based on an **antagonistic dualism** between the **objective** physical mechanical body & the entirely **separate subjective** mind/soul.

Descartes thesis, as a product of the times, was very well received and **hugely influential**. It formed the basis for **modernity**, the dominant reductionist paradigm of the past 400 years, and what Eisenstein (2012) calls 'the **Age of Separation**'.

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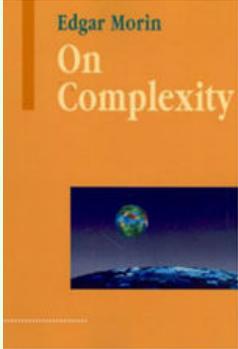
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“We are dominated by the principles of **disjunction, reduction, and abstraction**. Together, they constitute what I call the **paradigm of ‘simplification’**. ..This paradigm has dominated the adventure of Western thought since the 17th century. It has without doubt allowed for very great progress in scientific knowledge and in philosophical reflection. Its ultimately noxious consequences did not begin to become clear until the 20th century. This kind of disjunction reduced communication between scientific knowledge and philosophical reflection to a trickle. It eventually deprived science of any possibility of knowing itself, or even conceiving of itself scientifically.

..The only way to remedy this disjunction was another simplification: **the reduction of complexity to simplicity**. Hyper-specialization tore up and fragmented the complex fabric of reality, and led to the belief that the fragmentation inflicted on reality was reality in itself. ..In this way we arrive at **blind intelligence**. Blind intelligence destroys unities and totalities.”



Morin (2008, p. 3-4)

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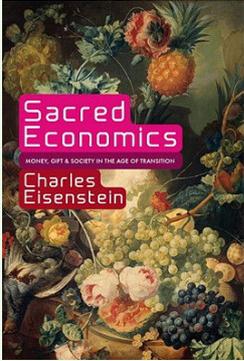




Characteristics of the ‘Age of Separation’:
Individualism, silo-isation, competition, consumption, ascendancy, efficiency, rationalisation, autocracy, concentration of power, managerialism and control.

See:

- Sacred Economics, **Charles Eisenstein** (2012) <http://sacred-economics.com/> (0-2:00 of 12:09)



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Critiquing Modernity's tendencies of Separation & Control: A recurring literary theme..

"In Dickens's *Hard Times* ..the **circus** stands as a romantic resistance to the **intellectual utilitarianism** of Thomas Gradgrind and, more especially to the industrial **capitalist utilitarianism** of Josiah Bounderby. ..This, written in 1854, expresses the essence of Romanticism's struggle against the controlling and 'deathly' utilitarian father-figure who is so much *the* archetypical figure of nineteenth century culture. It also expresses something of the **revulsion against control**"



Wendy Wheeler (1999)

"We were peeping at the circus," muttered Louisa haughtily, without lifting up her eyes, "and father caught us."

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"All the people in the universe were once **free** to travel and mingle, and build whatever they wanted. But President Business was confused by all the **chaos**. So he **erected walls** between these worlds and became obsessed with **order** and **perfection**."

"Hi, I'm President Business, president of the Octan Corporation, and the **world**. Let's take extra care to **follow the instructions** (or you'll be put to sleep) ...and don't forget about Taco Tuesday coming next week!"





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Current **global-wide crises** –around energy, water, food, climate, ecological destruction and biodiversity, (mental and physical) health, social and economic failure can each be recognised as merely symptoms of an **unsustainable societal construct** which has resulted from a **skewed sense of progress** that the paradigm promotes.

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*“It is common to portray human history as a **relentless and inevitable** trend toward greater levels of social complexity, political organization, and economic specialization, with the development of **more complex** and capable technologies supporting ever-growing population, all sustained by the mobilization of **ever-increasing quantities of material, energy, and information.***

*Yet this is **not inevitable.** In fact, cases where this seemingly near-universal, long-term trend has been severely disrupted by a precipitous collapse – often lasting centuries – have been **quite common.**”*
(Motesharrei et al, 2014)

¥ € \$ (Chung Kaifeng, 2010)
SAM, Singapore

Marina Bay Sands Casino, Resort & SkyPark, Singapore
150m pool on world's largest public cantilevered platform overhanging the north tower by 67m. S\$8bn to build.

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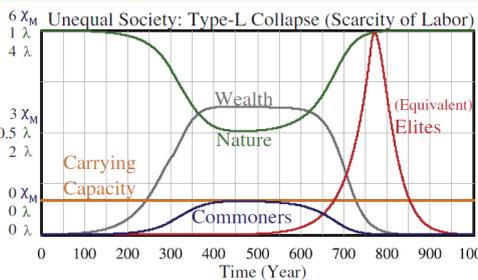
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Motesharrei et al (2014):
 “The results of our experiments – indicate that either one of the two features apparent in historical societal collapses – **over-exploitation of natural resources** and **strong economic stratification** – can **independently** result in a complete collapse.”



“It is important to note that the Elites – due to their wealth – do not suffer the detrimental effects of the environmental collapse until **much later** than the Commoners. This buffer of wealth allows Elites to continue “**business as usual**” despite the impending catastrophe.”

“However, **collapse can be avoided** and population can reach equilibrium if – the per capita rate of **depletion of nature** is reduced to a **sustainable** level, and if – **resources are distributed in a reasonably equitable** fashion.”

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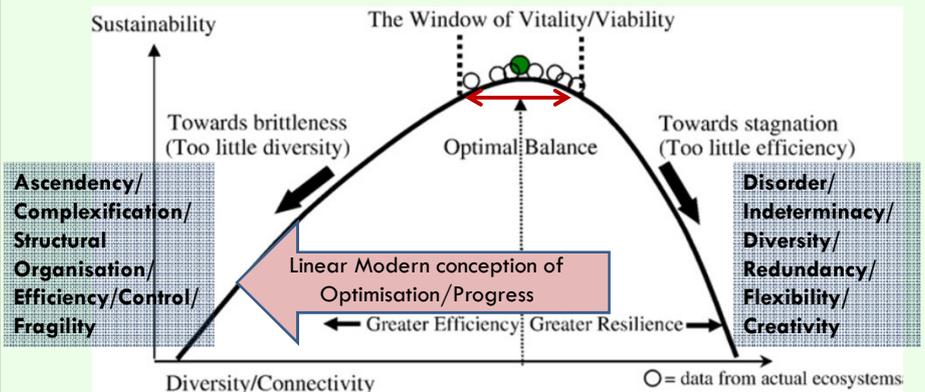
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Sustainability



○ = data from actual ecosystems

‘Systems can become **too efficient** for their own good’ (Robert Ulanowicz, 2009)

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De Róirce

A quantitative model of (ecological) sustainability as a dialectical & dynamic balance (right¹) has been independently applied and adopted in relation to envisioning sustainability across techno-economic and social domains (below²).

¹Goerner et al., 2009
²Stirling, 2014

‘Four necessary but individually insufficient dynamic properties of sustainability’ (Stirling, 2011)

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De Róirce

Increasingly though, and right across the disciplines, there is a realisation that the **old modernist paradigm of separation, reduction and control is inherently flawed.**

It is perhaps **perverse** to expect that a paradigm which has avowedly brought great societal benefit to some, but simultaneously underpins contemporary crises could successfully address these challenges from **within its own frame of reference.**

New paradigm thinking has begun to emerge along with **alternative visions** across virtually all disciplines displaying remarkable resonance and parallels.

<http://www.nature.com/news/2013/06/13-in-my-town.html>

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This new paradigm rejects the atomisation of knowledge and recognises that in order to address contemporary crises, **new emergent knowledge** is required which goes *far beyond any one disciplinary 'object world'*, but embraces an integrated **transdisciplinary** approach.

It also recognises the need to strive for **system optimisation (sustainability)** through **(contingent and context dependent dynamic) balance** between **control and ascendancy** on the one hand and **redundancy, resilience, uncertainty and creativity** on the other. It recognises the **complex interconnected unity** inherent across our cosmos. This emerging new paradigm has been called a **'paradigm of complexity'** by the sociologist Edgar Morin (2008), but it takes on different names depending on disciplinary perspective.

/in-garden-what Here we simply call it **'new paradigm thinking'**.

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The modern reductionist paradigm has promoted disciplinary mutual ignorance through the silo-isation of knowledge: we organise the **'multi-versity'** of today into distinct **hard-bounded disciplines** characterised by ever increasing hyper-specialisation.

http://notesofnature.blogspot.ie/2013/06/in-garden-what-is-in-my-lawn.html

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Only through such **transdisciplinary** approaches can we hope to uncover unseen **connections** between our respective disciplines and thus reveal a broader reality, one that is **fit-for-purpose** in addressing **contemporary 'grand challenges'** and their attendant **crises, turbulence and uncertainty.**

Reductionist
'Object World'
Disciplinary Silos:
'learning more and more
about less and less':
islands of 'simple thinking'

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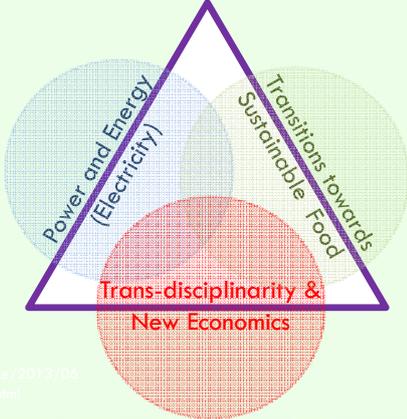
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Sample Study I

New Paradigm Thinking on: **Trans-disciplinarity and New Economics?**



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- **Calls for Transdisciplinarity**
 - *From a sustainability science perspective:*

‘Steering socio-ecological systems towards a more sustainable path is an inherently **transdisciplinary** problem, requiring cooperation between the scientific domain and society at large – here we define transdisciplinarity as a research approach that includes multi-scientific disciplines (interdisciplinarity) focusing on shared problems and the active input of practitioners from outside academia’ (Brandt et al 2013: 1)
 - *From a complexity standpoint:*

‘Latour (1993) makes a (formally) similar argument, in which climate change figures as a prominent example, suggesting that the proliferation and complexity of **connections and associations** within the world overwhelm the modernist attempt to impose a disciplinary order upon them: such an attempt is necessarily conceptually reductionist, where reductionism is seen to be both problematic and in principle avoidable. (Cooper 2012: 77)

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- Burns' *sustainability paradigm* entails a social scientific model (not a normative model) with a focus on the agents of change, the general mechanism whereby changes are taking place, and a stress not only on new values and cognitive frames but on social organizational and institutional changes taking place, for instance in the area of governance (2012: 1120).

- **Mechanisms of Social Order Formation and Transformation**
- *Dominant Power (Autocracy) Combined with a Shift in the Agent's Cognitive-Normative Framework*
- *Power Shifts*
- *A New Order Is Established Through Multi-Agent Negotiation* e.g. Kyoto (ibid 1123-1125)
- **Paradigm Shift Through Diffusion and Emulation** ("Organic" Transformation)
 - a new type of social system is established through **processes of diffusion and emulation** (mimetic function) under decentralized conditions in which a multiplicity of agents make autonomous, yet similar decisions to shift to a new paradigm. On an aggregate level, there is an **emergent development**

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Figure 1 Waves of Innovation (Hargroves and Smith, 2009)

The emerging sustainability paradigm is being established by a process of multiple initiatives facilitated by diffusion and collective learning of new values, ideas, and practices through associations, communities, business, and political networks (Burns 2012: 1129)

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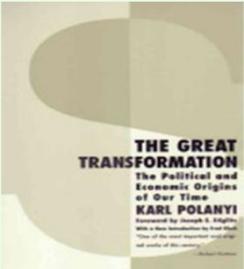
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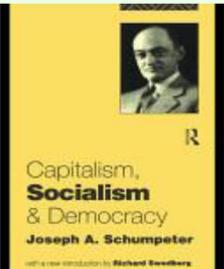




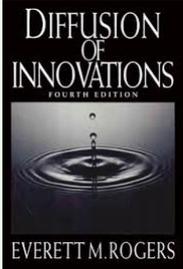
THE
STRUCTURE
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SCIENTIFIC
REVOLUTIONS
THIRD EDITION
THOMAS S. KUHN



THE GREAT
TRANSFORMATION
The Political and
Economic Origins
of Our Time
KARL POLANYI
Translated by Frank A. Knight
With a New Introduction by Frank
Knight of the Introduction and After
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Innovation at a broader societal level doesn't always represent a Schumpeterian process of 'creative destruction' rather at times it can lead to a process of 'destructive creation' (Soete 2013: 134).

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- a '**green turn**' (Bina and La Camera 2011: 2013) is where notions of eco-innovation that were previously confined to sectoral niches of the economy (Janicke 2011: 5) have become the basis of the restructuring and rejuvenation of the economy as a whole.
- ...we are still very much within the territory of **traditional economic growth paths** (Berger and Gjokski 2010: 24), with environmental considerations instrumentalized in strategies of crisis prevention (Janicke 2011: 16).
- **Smart economic growth** includes green growth: a key feature of smart growth is building on the innovation or 'ideas' component of the economy through the utilisation of human capital... the 'new engines of growth' are, therefore, investments in renewable energy, new technologies and innovation, combining higher productivity and higher energy efficiency through various sectors (Berger and Gjokski 2010: 14).

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Alternatives

- The **Green New Deal** has a far-reaching goal: the “**ecological and social transformation of our economy**”... to achieve this transformation, the restructuring of financial markets, investments into climate protection via the development of renewable sources of energy, and sustainable transportation are all regarded as equally necessary” (Bauhardt 2014: 63).
- The **degrowth** approach is composed of various contributions that address the finite character of natural resources (not only oil) and which **critically regard the growth orientation of market economies** ...**Post-growth** or degrowth is to be achieved by stopping all policies aimed at inducing economic growth and reorganizing all economic sectors and institutions to make them independent of growth (ibid. 63-4).
- The **solidarity economy** draws on various projects and initiatives including cooperative housing and urban gardening projects, barter clubs, self-governed businesses, eco-villages and transition town projects...The projects and initiatives that pursue solidarity in their economic activities are **not dissociated from markets**. However, they are **not interested in the accumulation of capital** by maximizing profits, but rather in the utility of the activity or product for the involved parties

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‘transition studies’ : ‘research that looks at societal systems as complex adaptive systems ...in terms of non-linear and long-term processes of change from an interdisciplinary and integrative perspective’ (Avelino and Rotmans, 2009: 544).

Landscape: surroundings of societal system ...trends with relatively slow progress and/or developments with autonomous character.

The **regime**: ‘dominant’ configuration of actors, structures and practices; dominates the functioning of the societal system; defends the status quo.

Niches, configurations in which non-conformism and innovation can develop: part of the societal system able to deviate from the system

A **transition process**: interactions through time between landscape, regime and niches.

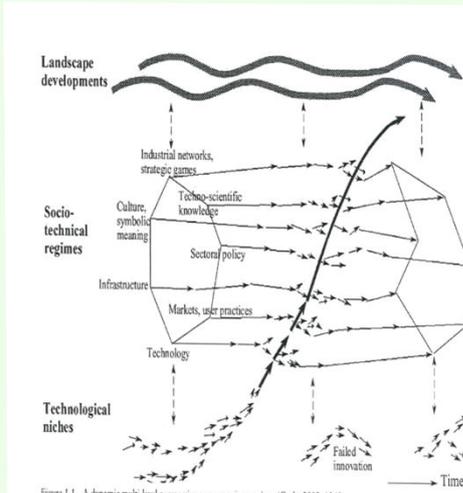


Figure 1.1 A dynamic multi-level perspective on system innovations (Geels, 2002: 1263).

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Sample Study I
New Paradigm Thinking on: Power and Energy (Electricity)

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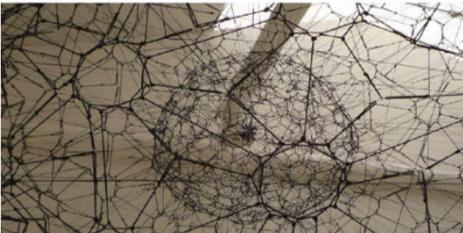


Figure 7. Art installation by Tomas Saraceno, Venice Biennale. Photo BL.

Power is constructed, as is all reality, in the neural networks of our brain. Power is generated in the **windmills of the mind** (Castells 2009: 145).

...opposition to wind farms in rural Ireland was 'enough to preoccupy Don Quixote for a lifetime', nature.blogspot.ie/2013/04/
http://www.fox.com.au/news-in-my-town.html

The metaphor of the net allows us 'insist on its fragility, the empty spot it leaves around (a net is made first of all of **empty space**) (Latour 2010: 8).



(Harry McGee, Irish Times, 14/4/2014)

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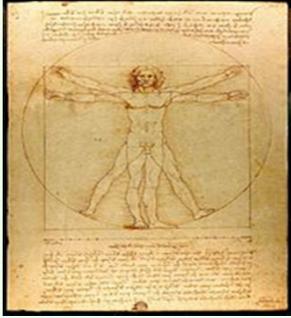
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...man is an animal suspended in webs of significance he himself has spun (Geertz 1973: 5)



Discrete technologies are not exogenously imposed on an economy, but are part of a web of rules, institutions and practices. This web shapes the likelihood and nature of **innovation and diffusion**... policies that are externally designed and imposed may be met with unexpected challenges in the form of habits, institutional cultures and values that contradict them (Burch 2011)



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In 2008, a framework for sustainable economic renewal published by the Department of the Taoiseach (Prime Minister), identified the inter-related challenges of climate change and energy security, suggesting that the **'smart economy'** is a green economy in that it recognises the inter-related challenges of climate change and energy security. It involves **the transition to a low-carbon economy** and recognizes the opportunities for investment and jobs in clean industry' (Department of Taoiseach, 2008, p. 8), (Davies and Mullin 2011: 797)



Contrasting narratives of post-Celtic Tiger Ireland



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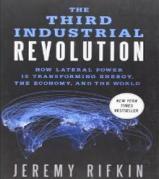
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Today, Internet technology and renewable energies are beginning to merge to create a new infrastructure for a **Third Industrial Revolution** (TIR) that will change the way power is distributed in the 21st century. In the coming era, hundreds of millions of people will produce their own renewable energy in their homes, offices, and factories and share green electricity with each other in an **"Energy Internet"** just like we now generate and share information online (Rifkin).



a new narrative of decarbonisation:

- the deployment of a smart grid;
- retrofit of buildings;
- electrification of transport;
- increasing penetration of wind into the energy system, and;
- developing the grid to facilitate the connection and connecting Ireland's grid more fully with the Northern European Grid (Curtin 2012: 18).



Decarbonising Energy End Use
Background Paper No.6

Final Report from the NESC Secretariat
Ireland and the Climate Change Challenge:
Connecting 'How Much' with 'How To'

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M. Wolsink / Renewable and Sustainable Energy Reviews 16 (2011)

SMART GRID
A vision for the future — a network of integrated microgrids that can monitor and heal itself.

Fig. 1. Smart grid: a "network of integrated microgrids that can monitor and heal itself" [10, p. 570].
©Nature (2008) Reprinted by permission from Macmillan Publishers Ltd.

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Figure 1: Definition of a Smart Grid

A socio-technical network: active management of both information and energy flows, in order to control practices of distributed generation, storage consumption and flexible demand... a buzz word without a precise definition (Wolsink 2012: 824)

'A new paradigm of active distribution that can dramatically change the role of consumers' (Mengolini and Vaseljevka 2013: 6).

Figure 12: The social dimension of smart grids: a framework

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Sustainable Energy Spectrum Model of Carley and Andrews (2012)

“We propose the concept of a “sustainability electricity scale spectrum” composed of a combination of traditional macro-generation facilities with increased integration of...”

<p>Macro-generation</p> <p>Large (inter-)national transmission systems over great distances from large, often distant central-station generating plants. Energy losses (~ 6.5% USA, 2007) could be significantly reduced by more local generation.</p>	<p>Micro-grids</p> <p>Relatively small, low voltage distribution networks; housing estates to municipal applications. Self-controlled, semi-autonomous connected to the central grid but easily isolated to serve as an islanded electricity system.</p>	<p>Distributed generation</p> <p>Generally refers to generating systems that produce between 5 kW and 5 MW of power; e.g. Combined heat and power (CHP)</p>	<p>Micro-generation</p> <p>Small-scale generation (< 5 kW) e.g. PV, solar thermal, hydrogen fuel cells, wind, CHP. Usually owned by end-users, to generate a portion or the entirety of their domestic household needs.</p>	<p>End-user conservation and efficiency</p> <p>Includes both passive and active energy-efficiency technologies that reduce total electricity demand, as well as changes in electricity consumption behavior.</p>
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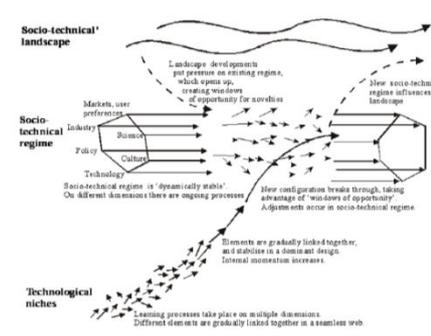
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Figure 2: mapping civil society activity in sustainable electricity transitions



Socio-technical landscape

Landscape developments put pressure on existing regimes, which opens up, creating windows of opportunity for niches

slow socio-technical regime influences landscape

Socio-technical regime

Market, user preferences

Industry

Policy

Culture

Technology

Socio-technical regime is 'dynamically stable'. On different dimensions there are ongoing processes

slow configuration breaks through, taking advantage of 'windows of opportunity'

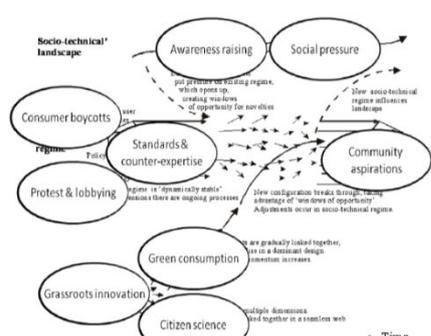
Adjustments occur in socio-technical regime

Elements are gradually linked together, and stabilise in a domain of design. Internal momentum increases

Technological niches

Learning processes take place on multiple dimensions. Different elements are gradually linked together in a seamless web

Time



Socio-technical landscape

Awareness raising

Social pressure

slow socio-technical regime influences landscape

slow configuration breaks through, taking advantage of 'windows of opportunity'

Adjustments occur in socio-technical regime

Socio-technical regime

Consumer boycotts

Standards & counter-expertise

Protest & lobbying

Green consumption

Grassroots innovation

Citizen science

regime is 'dynamically stable'

Elements are gradually linked together, and stabilise in a domain of design. Internal momentum increases

multiple dimensions

linked together in a seamless web

Time

‘Civil society based social movements could play a significant role in sustainability transitions through their ability to develop innovative *social practices*’ (Seyfang *et. al* 2010: 4).

‘If pushed unreasonably and too far some civil associations will form around more active mobilisations of resistance e.g. anti-wind farm movements’ (Smith 2011)

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Ault & Frame (2008): 'Electricity Network Scenarios for Great Britain in 2050' (Ofgem's LEMS project)

1. Big Transmission & Distribution (Big T&D)
2. Energy Service Companies (ESCO)
3. Distribution System Operators (DSO)
4. Microgrids (MG) (right)
5. Multi-Purpose Networks (MN)

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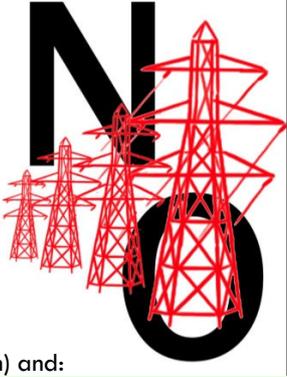
	2000	2050				
		Big T&D	ESCO	DSO	MG	MN
Total final energy demand (PJ) ¹	6,189	6,468	5,807	4,910	4,568	5,785
Transport	1,855	2,142	1,542	1,292	1,255	1,538
Residential	1,961	1,920	1,921	1,625	1,431	1,920
Other (Industry, Services & Agriculture)	2,374	2,407	2,345	1,993	1,872	2,327
Total electricity demand (PJ) ²	1,176	1,522	1,623	1,243	1,044	1,662
Transport	20	85	330	126	263	343
Residential	403	587	473	378	195	531
Other ³	754	851	819	739	595	788
Total electricity generation output (PJ)	1,288	1,652	1,874	1,501	1,462	1,860
<i>Large scale generation:</i>	1,288	1,652	1,761	1,348	1,131	1,804
<i>Small scale generation:</i>						
Micro CHP	0	0	0	0	142	0
Microgen	0	0	113	153	189	56
Sub-total	0	0	113	153	331	56
CO2 reductions from 2000 (Mt)						
Energy system reduction	0%	30%	47%	61%	71%	45%
Electricity sector reduction	0%	67%	88%	95%	99%	79%

¹ 1 PJ = 0.278 TWh
² Sectoral electricity demand figures do not include that proportion of electricity demand that is met by small scale electricity generation.
³ Industry, Services, Agriculture, Hydrogen and Upstreams

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Separation between local (generation and distribution) and:

- corporate elites and
- distant end users

Energy Use Implications: Overall Consumption **increases** as renewables supplement other energy sources

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'pylons and their first cousins, the wind farms have become a source of serious political woe for this administration', as resistance is growing because on increasing proximity to homes and the scale of proposed new turbines'

'Nimbys out in the sticks threaten to shatter political legacies: Local issues like pylons and wind farms can trip up the most canny of political operators, *Sunday Independent*, January 12th, 2014.

'taller even than the Great Pyramid of Giza that stood as the loftiest man-made structure on the planet for 3,800 years'.

'The winds of change that sweep our land: We need to ask ourselves what price we are prepared to pay for progress', *Sunday Independent*, January 12th, 2014.






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De Róirce

Alternative conceptions; alternative options?

“It is possible to identify **two ends of a spectrum** of innovation for sustainable development that focus on distinct actors, mechanisms, and knowledges.

Green Industrialisation
 “led by **large firms, or by public-private partnerships of multinationals and governments advocating a science-push and top-down form of STI¹.**”

Grassroots Innovation
 “rooted more centrally in civil society, and argues for a more **participatory, bottom-up form of knowledge production and innovation for sustainability that responds to local situations and the interests and values of the communities involved.** (Leach et al, 2012)

[¹ science technology and innovation]

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De Róirce

Alternative conceptions; alternative options?

“**Smaller scale technologies** like PV can show quick rates on innovation and can be quickly deployed and improved.

Arguably, then, from an energy security and low carbon transition perspective, **there is something inherently more secure about smaller-scale technologies.**

Currently this sort of analysis is **not considered** by policy-makers within the UK, but ..this is more likely to enable a transition that is rapid, sustainable, secure and affordable and it deserves more policy attention.”
 (Hoggett, 2014)

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Alternative conceptions; alternative options?

Carley & Andrews (2012):
Potential benefits from locality based energy systems include potential for more closely aligned supply- and demand:

*‘the presence of local energy systems, and possibly also individuals’ control over these systems, causes consumers to **change their energy behavior or patterns.**’*

*‘A more local scale and ownership of energy systems may provide a sense of **empowerment** and contribute to lifestyle decisions based on the **environmental ethics**, including **demand-side behavioural adjustments**. ..large facilities also are often initially overbuilt in order to anticipate future demand growth, they also **create pressures** to promote more rapid **demand growth** in order to more fully utilize them’*

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Alternative conceptions; alternative options?

Templederry Wind Farm, Co. Tipperary – local creativity



John Fogarty, Director, Templederry Wind Farm
“The key is that a large amount of the money should stay within the **community**. ..If a community came together and worked with the planners, we might be able to find a **solution that suits everyone.**”



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Alternative conceptions; alternative options?

Templederry Wind Farm, Co. Tipperary



Paul Kenny, Tipperary Energy Agency

“The bottom line is that the negative lobby has been driven by fear of the very big projects that have **very little community input or gain**. There was no issue before the big projects came on stream, and what people are attacking is wind energy, but what they should be attacking is **corporate dominance** over our energy supplies.”



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Alternative conceptions; alternative options?

Templederry Wind Farm, Co. Tipperary

Pat Rabbitte, Minister for Energy, Opening Templederry WF, 16 Sept. 2013

“While the debate continues over how best to tackle rising energy costs, insecurity of supply, and the obvious downsides of a carbon driven energy sector, it has become increasingly apparent that **what is needed is a broad mix of both top-down and bottom-up initiatives**. The Templederry project is, I believe, a template for the future and I fully expect to see many more of these community led projects, where **local people seize the initiative** in powering Ireland for the 21st Century.”



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Processes of sectoral transition, as well as their outcomes, are difficult to predict and might take different forms such as:

- (a) a re-imposition of the old regime with some adjustments;
- (b) the breakdown into unorganized social space;
- (c) the partitioning into several spaces (e.g. renewable vs. traditional energy generation);
- (d) the development of a wholly new regime.

(Fuchs, Hinderer, Kungl and Neukirch 2012: 15)

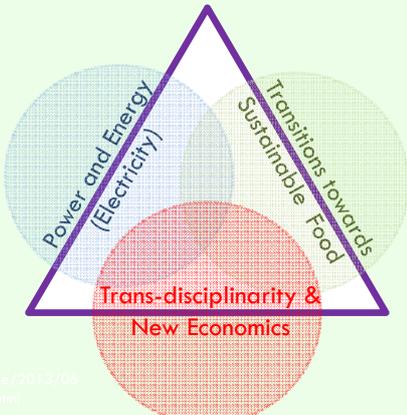
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Sample Study I
New Paradigm Thinking on: Power and Energy (Electricity)



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

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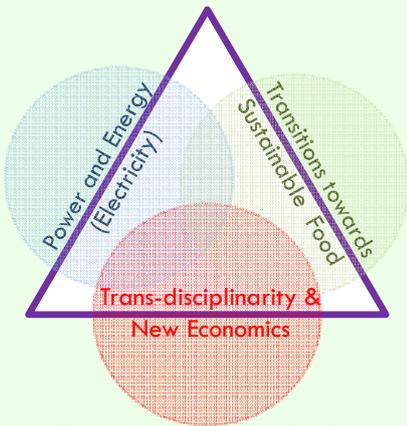
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Sample Study I

New Paradigm Thinking on: Transitions towards Sustainable Food



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New Paradigm Thinking on Transitions toward Sustainable Food

- 2007-08 food (& oil) price peak
 - Interlocking of food & energy security
- Solutions to global food security: productivism
 - Dominant paradigm of 20th century
 - Seeds + inputs = food security
 - Nutrition transition worldwide: ↑ meat consumption
- But:
 - The 'quality turn' by the West's middle class
 - Cracks in the paradigm

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An 'Alternative' Paradigm?

- “Business as usual is no longer an option” (IAASTD 2009)
- Weight of scientific evidence:
 - Climate change (IPCC AR5 WG2); water; eco-services
 - Health care costs (Mexico)
- Yet productivism has a Malthusian trump card: how will we feed 9 b by 2050? Need to ‘double’ output.
- Sites of contestation: GM seeds, red meat, biofuels
- Reconciling contradictions: ‘Sust Intensification’
- UN Special Rapporteur on the right to food
 - <https://ohchr.org/en/in-gov> — Food sovereignty embraces wide range of social mvts

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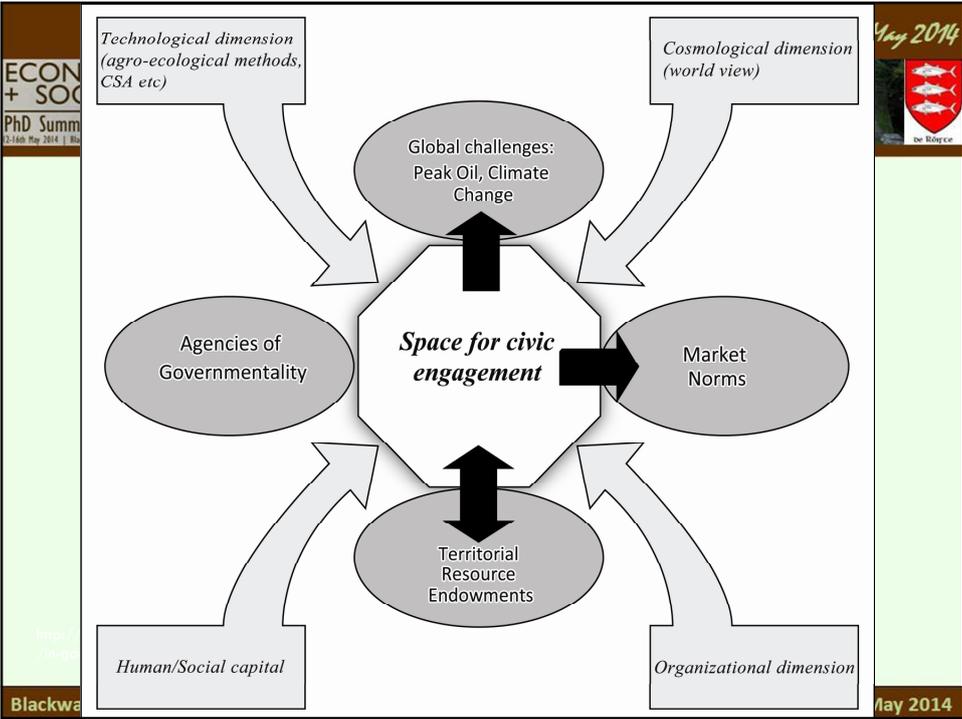
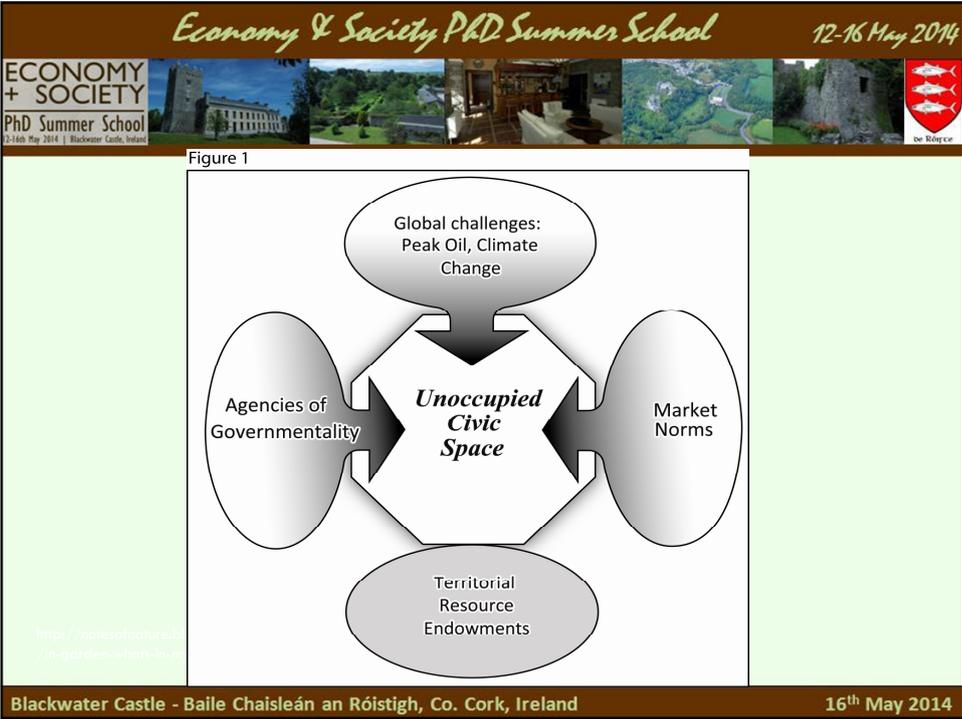




Why food? (as a site for social mobilization)

- Low entry threshold; potential for (re-)skilling
- A social lubricant, aiding connectivity, aggregation
- Reveals territorial resource endowments hidden by phases of modernization; recovers ‘place-ness’
- Food is being revalued due to its multifunctionality & capacity to create synergies (production/consumption)
- Intersection with institutional initiatives (urban-regional planning; food policy councils). Critical to addressing health & well being.

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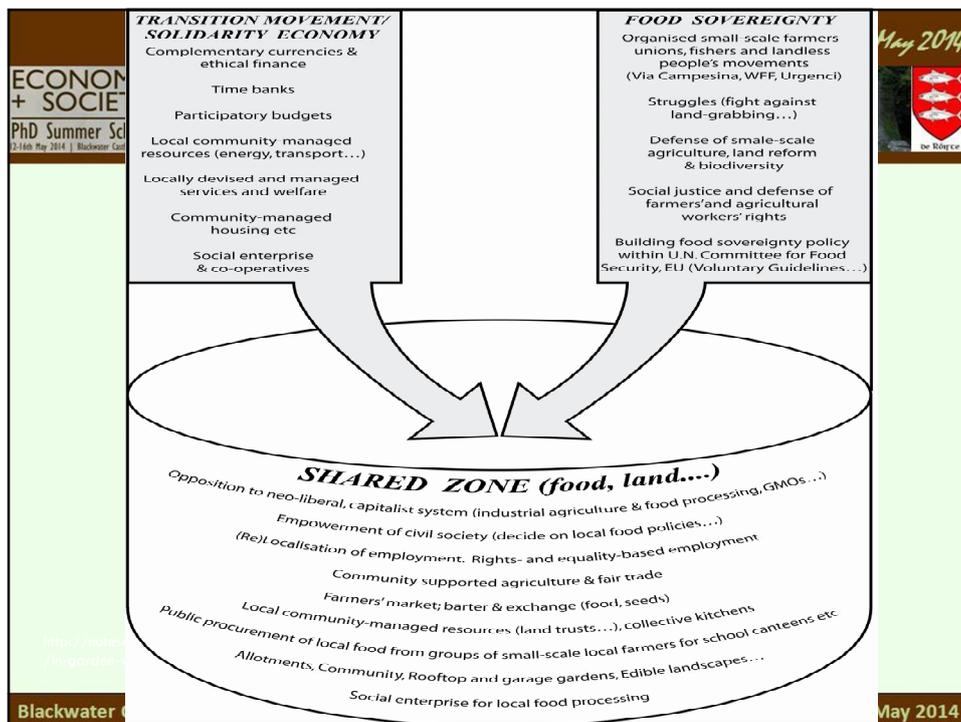


Transitions & Food sovereignty

- Convening power of food for social mobilisation
 - De-commodification, autonomy → autarky? (TM)
- F. Sov: not simply 'the right to food' but the right of peoples to define their food system & agri-resources
- Agroecology: not just farming techniques (Gliessman)
- Alternative 'paradigm' must ensure adaptability, resilience, nutritional wellbeing, sustainability
- F.Sov mvt as alternative socio-technical niche marked by technological + policy innovation for SD.
- Can work on food move beyond experimental niches & lead to regime change?

http://notes.in-garden.com

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

Alternative Economies and Societal Innovation

Paradigms Lost? Trans-disciplinarity, Societal Innovation and Alternative Economies

<p>Dr Edmond Byrne School of Engineering University College, Cork</p> <p>Dr Colin Sage Dept. of Geography University College, Cork</p>	<p>Dr Gerard Mullally Dept. of Sociology University College, Cork</p> <p>Prof. John Barry School of Politics, International Studies and Philosophy Queen's University, Belfast</p>
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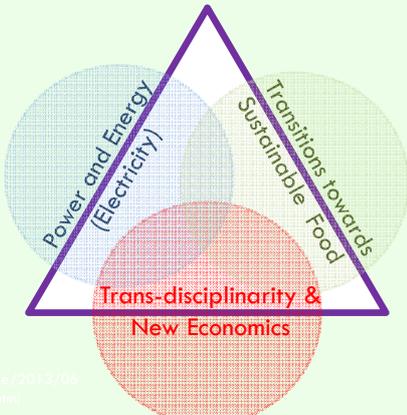
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References



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

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16th May 2014

Economy & Society PhD Summer School 12-16 May 2014

ECONOMY + SOCIETY
PhD Summer School
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- Ault, Graham, Frame, Damien, Hughes, Nick and Strachan, Neil (2008) Electricity Network Scenarios for Great Britain in 2050 Technical Appendices to Final Report for Ofgem's LENS Project
- Avelino, Flor and Rotmans, Jan (2009), 'Power in Transition: An Interdisciplinary Framework to Study Power in Relation to Structural Change', *European Journal of Social Theory*, **12**(4), 543-569
- Barry, John and Farrell Katherine N (2013) 'Building a career in an Epistemological No Mans Land', in Katherine N Farrell, Tomasso Luzzati and Sybille van den Hove eds. (2013), *Beyond Reductionism: A Passion for Interdisciplinarity*, Routledge: London and New York, 121-153.
- Barry, John (2012), *The Politics of Actually Existing Unsustainability: Human Flourishing in a Climate Changed, Carbon Constrained World*, Oxford and New York: Oxford University Press.
- Bauhardt, Christine (2014), 'Solutions to the Crises? The New Green Deal, Degrowth and the Solidarity Economy: Alternatives to the capitalist growth economy from an eco-feminist perspective', *Ecological Economics*, **102**: 60-68.
- Berger, Gerald and Gjokski, Nsidia (2010), *Linking Economic Growth and Sustainable Development: Strategies, Initiatives and Activities on the International, EU and National Level*, Vienna: European Sustainable Development Network (ESDN), ESDN Case Study, No.1.
- Bina, Olivia and La Camera Francesco (2011), 'Promise and Shortcomings of a Green Turn in Recent Policy Responses to the "double crisis"', *Ecological Economics*, **70**, 2308-2316.
- Brandt, Patric., Ernst, Anna., Gralla, Fabienne., Leuderitz, Christopher., Lang, Daniel J, Newig, Jens, Reinert, Florian., Abson, David J., von Wehrden, Henrick (2013), 'A Review of Transdisciplinary Research in Sustainability Science', *Ecological Economics*, **92**: 1-15

Blackwater Castle - Baile Chaisleán an Róistigh, Co. Cork, Ireland 16th May 2014

Economy & Society PhD Summer School 12-16 May 2014

ECONOMY + SOCIETY
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12-16th May 2014 | Blackwater Castle, Ireland





- Burch, Sarah (2011), 'Sustainable Development Paths: Investigating the roots of local policy responses to climate change', *Sustainable Development*, **19** (3), 176-188
- Byrne, Edmond, Sage, Colin and Mullally, Gerard (2013) *New Paradigm Thinking - Alternative Visions transcending the Disciplines*, Transdisciplinary Conversations Conference, UCC, 5-6 Sept. 2013. Available at: <http://www.ucc.ie/en/media/conferences/sustainabilityinsociety/OrientationPaperTransdisciplConversationsConf2013.pdf>
- Byrne, Edmond and Mullally, Gerard (2012), 'Are Sustainability and Modern Society Compatible?', *Sustainability and Modern Society*, Adult and Continuing Education (ACE) Seminar Series, October 2nd, UCC. Available at: <http://www.ucc.ie/en/media/conferences/sustainabilityinsociety/papers/AreModernSocietySustainabilityCompatible.pdf>
- Byrne, Edmond and Mullally, Gerard (2013), 'Sustainability and Modern Society: Transdisciplinarity in Education for Sustainable Development, Environment, Planning and Sustainability Colloquium Series, 2012-2013. Available at: <http://www.ucc.ie/en/media/academic/processengineering/publicationspresentations/MPlanSustainabilityColloqUCCFeb2013.pdf>
- Byrne, Edmond and Mullally, Gerard (2014), 'Sustainability and Progress: Building Adaptability, Resilience and Creativity into Socio-technical Systems', 'The Free University' – ACE@UCC, Centre for Adult and Continuing Education, April 9th available at: <http://www.ucc.ie/en/media/academic/processengineering/publicationspresentations/ByrneMullallySustProgressFreeUniv14.pdf>

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Economy & Society PhD Summer School 12-16 May 2014

ECONOMY + SOCIETY
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- Carley, Sanya and Andrews, Richard N. (2012) Creating a sustainable U.S. electricity sector: the question of scale, *Policy Science* **45**: 97–121
- Castells, Manuel (2009), *Communication Power*, Oxford and New York: Oxford University Press
- Coen, David, and Roberts Alasdair (2012), 'A New Age of Uncertainty' *Governance: An International Journal of Policy, Administration and Institutions*, **25** (1), 5-9.
- Cooper, Geoff (2012), 'A Disciplinary Matter: Critical Sociology, Academic Governance and Interdisciplinarity', *Sociology*, **47**(1), 74-89.
- Davies, Anna and Mullen, Sue. J (2011), 'Greening the Economy: interrogating sustainability innovations beyond the mainstream', *Journal of Economic Geography*, **11**, 793-816
- Eisenstein, Charles (2012) *Sacred Economics*. See: <http://sacred-economics.com/>
- Electricity Needs Ireland (ENI), (2013) Cost benefit analysis for a full and immediate Smart Grid roll out in Ireland, Dublin
- Geertz, Clifford (1973), *The Interpretation of Cultures*, New York: Basic Books.
- Goerner, SJ, Ulanowicz RE and Lietaer, B (2009), Quantifying economic sustainability: Implications for free-enterprise theory, policy and practice. *Ecological Economics* **69**, 76–81
- Hall, Peter A (2013) 'Brother, Can you Paradigm', *Governance: An International Journal of Policy, Administration and Institutions*, **26**(2), 189-192
- Hargroves, Karlson 'Charlie' and Smith Micheal H., (2005), *The Natural Advantage of Nations: Business Opportunities, Innovation and Governance in the 21st Century*, London and Sterling VA: Earthscan
- Ingebrigtsen, Stig and Jakobsen, Ove (2012), 'Utopias and realism in ecological economics – Knowledge, Understanding and Improvisation', *Ecological Economics*, **84**, 84-90.

Blackwater Castle - Baile Chaisleán an Róistigh, Co. Cork, Ireland 16th May 2014

Economy & Society PhD Summer School 12-16 May 2014

ECONOMY + SOCIETY
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- Janicke, Martin (2012), 'Green Growth: From a Growing Eco-Industry to a Sustainable Economy', *Energy Policy*, **48**, 13-21.
- Lam, Jacqueline C.K., Walker, Richard M, and Hills, Peter (2012), 'Interdisciplinarity in Sustainability Studies: A Review', *Sustainable Development*
- Leach, M, Rockström, J, Raskin, P, Scoones, I, Stirling, AC, Smith, A, Thompson, J, Millstone, E, Ely, A, Arond, E, Folke, C and Olsson, P (2012) Transforming innovation for sustainability. *Ecology and Society* **17**(2): 11
- Hoggett, Richard (2014), Technology scale and supply chains in a secure, affordable and low carbon energy transition, *Applied Energy*, In press.
- Mengolini, Anna and Vasilievska, Julija (2013), *The Social Dimension of Smart Grids: Consumer, Community, Society*, JRC Scientific and Policy Reports.
- Morin, Edgar (2008) *On Complexity*, Hampton Press
- Motesharrei, Safa, Rivas, Jorge and Kalnay, Eugenia (2014), Human and nature dynamics (HANDY): Modeling inequality and use of resources in the collapse or sustainability of societies, *Ecological Economics* **10**: 90–102
- Mullally, Gerard and Edmond Byrne (2013), 'Transgressing the Limits: Sustainability, Boundaries and Transformation in the Anthropocene', *Theory and Philosophy Summer School, Casteltownroche*, April 30th
<http://www.ucc.ie/en/media/academic/processengineering/publicationspresentations/TransgressingLimitsMullallyByrneTAPSS2013.pdf>

Blackwater Castle - Baile Chaisleán an Róistigh, Co. Cork, Ireland 16th May 2014

Economy & Society PhD Summer School 12-16 May 2014

ECONOMY + SOCIETY
PhD Summer School
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- Mullally, Gerard and Edmond Byrne (2014a), 'Smart Grids, Social Innovation and the Smart Society: The Generation, Distribution and Transmission of Discontent', Smart and Green Transitions in Cities/Regions, Institute for Governance and Innovation Studies (IGS) and the European Sustainable Energy Innovation Alliance ESEIA, International Conference, University of Twente, April 24th-25th.
- Mullally, Gerard and Edmond Byrne (2014b), 'Blurred Lines and the Windmills of the Mind: Media Constructions of Power and Energy in Ireland', Unpublished Manuscript [in progress], May/June, Cork
- Rifkin, Jeremy (2011), *The Third Industrial Revolution: How Lateral Thinking is Transforming Energy, the Economy, the World*, Palgrave MacMillian
- Robinson, John (2008), 'Being Undisciplined: Transgressions and intersections in academia and beyond', *Futures*, 40: 70-86.
- Sage, Colin and Byrne, Edmond (2012), 'Sustainability, Resilience and Food', *Environment, Planning and Sustainability Colloquium Series*, 2011-12, available at <http://www.ucc.ie/en/media/academic/processengineering/publicationspresentations/SustainabilityResilienceandFoodSageCByrneE25012012.pdf>
- Sage, Colin (2014), 'The Transition Movement and Food Sovereignty: From local resilience to global engagement in food system transformation', *Journal of Consumer Culture*, DOI: 10.1177/1469540514526281, 1-14. Available at: <http://joc.sagepub.com/content/early/2014/04/01/1469540514526281>
- Seyfang, Gill and Haxeltine, Alex (2012), 'Growing Grassroots Innovations: exploring the role of community based innovations in governing sustainable energy transitions', *Environment and Planning C: Government and Policy*, 30: 381-400

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- Smith, Adrian (2012), 'Civil Society in Sustainable Energy Transitions', in Geert Verbong and Derk Loorbach (eds), *Governing the Energy Transition: Reality, Illusion or Necessity*, New York and London, Routledge, 180-202.
- Soete, Luc (2013), 'Is Innovation Always Good', in Jan Fagerberg, Ben R. Martin and Esben Sloth Andersen (eds.), *Innovation Studies: Evolution and Future Challenges*, Oxford and New York: Oxford: 134-156.
- Stirling, A (2014) *From Sustainability, through Diversity to Transformation: Towards More Reflexive Governance of Vulnerability*, In: A. Hommels, J. Mesman, and W. Bijker, eds., *Vulnerability in Technological Cultures: New Directions in Research and Governance*. Cambridge MA: MIT Press.
- Toulmin, Stephen (1990) *Cosmopolis: the hidden agenda of modernity*, University of Chicago Press
- Ulanowicz Robert E (2009) The dual nature of ecosystem dynamics, *Ecological Modelling*. **220**: 1886–1892
- Wheeler, Wendy (1999) *A new modernity? Change in Science, Literature and Politics*. Lawrence & Wishart
- Wolsink, Maarten (2012), 'The Research Agenda on the Social Acceptability of Distributed Generation in Smart Grids: Renewable as common pool resources', *Renewable and Sustainable Energy Reviews*, **16** (1), 822-835

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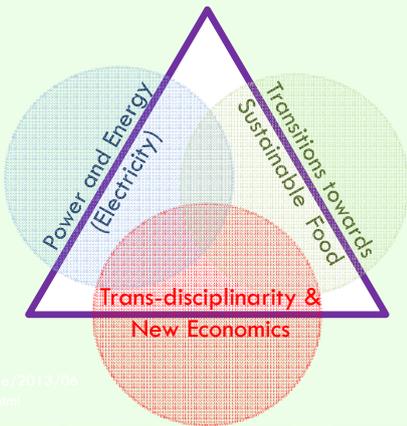
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Appendices



<http://notesofnature.blogspot.ie/2013/05/in-garden-whats-in-my-lows.html>

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- **Varieties occasional interdisciplinarity** (summarized by ‘enrichment through contingent encounter’, Wellbery, 2009: 988), **problem-oriented interdisciplinarity**, and **transdisciplinarity**, referring to theories that cannot be said to have a specific disciplinary home since they were intended from the outset to have wide applicability (Cooper 2012: 76-7)
 - **Weak and Strong:** Strong transdisciplinarity can be seen as an extension of interdisciplinarity because it involves both “inner-scientific cooperation between various disciplines and fields as well as cooperation between science and society” (Ingebrigsten and Jackobsen 2012: 85)
 - **a broad category** encompassing inter-, trans-, multi- and cross disciplinarity (Lam et al 2012)
 - **Cross- disciplinarity:** research beyond boundaries, **without collaboration or cooperation** - no techniques or knowledge is exchanged between disciplines.
 - **Multi- disciplinarity:** maintaining disciplinary paradigms and frameworks without change or; **conducting research ‘in parallel’, rather than in coordination**
 - **Inter- disciplinarity:** Researchers retain their own **disciplinary knowledge**, but must also be able to **accept and value the differing paradigms** they encounter.
 - **Trans- disciplinarity:** can involve the process of producing, restructuring, integrating and managing knowledge from technological, scientific and social arenas ... an attempt to bridge science and society together – moving from ‘**science on/about society, towards science for/with society**’ .

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Challenges

- ... a programmed cooperation between the representatives of the established sciences that would study a common object, itself already defined in its contours, with the help of different methods and complementary approaches [...] **interdisciplinarity thus understood does not institute a novel problematic and does not invent new objects.** (Derrida 2004 cited in Cooper 2012: 76)
- ...the move towards interdisciplinarity is a manifestation of **new forms of academic governance** that embody an implicitly or explicitly critical stance towards disciplines and disciplinary knowledge, and introduce more **instrumental forms** of value (Cooper 2012: 79).
- Transdisciplinary research has been described as being **at the edge of marginalization** (Brandt et al 2013: 7).
- '...universities and academic funding agencies in Canada, despite strong rhetorical commitments to interdisciplinarity, have challenges in supporting issue-driven interdisciplinarity on the ground. It remains a **risky activity**, perhaps pursued more out of its intrinsic interest to those inclined this way, than out of any sense that it is a fast track to academic success' (Robinson 2008: 84).
- 'The "no-man's land" of ecological political economy is a messy, risky and uncertain **interregnum between different paradigms of knowledge production**' (Barry and Farrell 2013: 148)

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- 'one paradigm has been replaced by another. Rather, it is that – for the time being – there is no dominant paradigm at all' (Coen and Roberts 2011: 9).
- Any **new paradigm** 'will only be credible if it is grounded in economic science, it will also have to speak to the quintessential political dilemmas of an age' (Hall 2013: 191)
- The **green turn** embodied in discourse of green economy, green growth, sustainable growth, green new deal frame the problem as 'declining economic growth, partly as a result of the latest financial crisis, but also as policy makers look to the future a mix of trends suggesting rising population pressure on limited and deteriorating resources may negatively affect the engines of growth' (Bina and La Camera 2011: 2310)
- ...green growth has become 'the only remaining option following the failure of the neo-liberal growth model of an "unleashing of the forces of growth" through denationalization and deregulation' (Janicke 2011 18) and is removed from the goal of significantly higher growth rates

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