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## **Orientation Paper and Primer for Discussion: New Paradigm Thinking - Alternative Visions transcending the Disciplines**

If it ain't fixed, then what?..

Human society is experiencing multi-faceted and increasing levels of crisis, turbulence and uncertainty. Economically, socially and ecologically, crises of varying magnitude and connectedness mount. The ways of doing things that we've employed to date, despite their attendant promise of ongoing progress, no longer seem to be working or be fit-for-purpose, that is if they ever were. These ways are based on the current dominant paradigm, one honed over the past four centuries since the birth of modernity, and epitomised by Descartes' hugely influential worldview based on reductionism and certainty, one which was warmly embraced at a time of unprecedented crisis and uncertainty in the 17<sup>th</sup> century, amid Europe's bloodiest war to date, economic uncertainty and climate change (Toulmin, 1990).

This is a paradigm which firmly underpins our current condition; we live in what Charles Eisenstein (2011) calls 'The Age of Separation', one characterised by individualism, silo-isation, competition, consumption, ascendancy, efficiency, rationalisation, autocracy, concentration of power, managerialism and control. There is no recognition in this worldview for the need to balance these traits with those of trust, redundancy, resilience, diversity, autonomy, localisation, subsidiarity, connectivity, solidarity and cooperation, in order to sustain respective (economic, social, ecological) systems. This paradigm therefore spawns economic models which do not recognise (natural resource) limits, but require continual and everlasting growth to avoid collapse. These are not simply theoretical abstractions or remote systemic crises, but increasingly penetrate the experience of everyday life.

While the current paradigm is intellectually recognised, at the start of the twenty first century, as being moribund in terms of any claims it may make to singularly describe, predict and control complex life and social systems or as a unique font of truth and knowledge, in practice it remains an immensely powerful and dominant force across global society. Self-referential rationality enables the paradigm to present itself as the definitive model of reality. Given that it embodies rational common sense, it must be taken that 'there is no other way'; critical reflection which might open up the possibility of revealing other versions of reality is thus a pointless waste of time. This reasoning allows powerful elites and vested interests to propagate the paradigm without question, and its 'objective reality' is brought to bear across all facets of society; it pervades modern science, technology, economics, business, management, medicine, law, politics, governance, in fact virtually every aspect of human endeavour.

In this way the paradigm persists and, without being capable of seeing the ultimate irony that despite having precipitated multiple (and interconnected) crises, it offers itself as the only 'solution' to 'fix' these. Current global-wide crises – for example, with respect to energy, water, food, ecological destruction and biodiversity, (mental and physical) health, social and

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economic failure and climate change, are all merely symptoms of an unsustainable societal construct which has resulted from a skewed sense of progress that the paradigm promotes. Each of these can be 'solved', or so the paradigm goes, by more of the same – more ascendancy, more consumption, more efficiency, more competition, more separation, more rationalisation, more individualism, more autocratic globalisation and more control.

Increasingly though, and right across the disciplines, there is a realisation that the old paradigm of modernity is inherently flawed. It is perverse to expect that a paradigm which has avowedly brought great societal benefit to some, but is simultaneously responsible for contemporary problems 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. Rather than 'throwing the baby out with the bathwater', the journey is not towards the 'no place' of utopia but from the 'here' of unsustainability to the 'there' of a more sustainable societal construct implied in the very notion of transition. While not yet generally consciously coherent, disciplinary responses have displayed remarkable resonance and parallels. This new paradigm rejects the atomisation of knowledge and recognises that in order to address contemporary problems and crises, knowledge is required which goes far beyond any one disciplinary 'object world', but embraces an integrated trans-disciplinary approach. It also recognises the need to strive for system optimisation (sustainability) through (contingent and context dependent) *balance* between ascendancy on the one hand and redundancy on the other, rather than through a singular and futile drive for the former, while seeking to extinguish uncertainty. Instead it recognises the complex interconnected unity inherent in reality as it pertains across our world and universe. 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.

Here we simply call it '*new paradigm thinking*'.

It has become increasingly evident to us from interactions with academics, and through their research output, that alternative visions have been emerging across this institution [University College Cork]. This realisation has come in the first instance through several collaborations around trans-disciplinary approaches to questions around sustainability, but it quickly became evident that this new thinking was not necessarily confined to academics with a particular interest in sustainability *per se*. One commonality was a genuine thirst for knowledge, in particular the willingness in the best academic tradition to critically assess current models and in doing so to try to seek deeper truths from which to make sense of the world around them. Ultimately these are academics who are more interested in asking fundamental questions than simply going with the flow or the path of least resistance. Of course, our conference represents not a definitive outcome, but merely a small sample and representation of the potential from across the university, an experimental exercise in itself which has the potential to describe a pen-picture of what could emerge from a wide range of various disciplinary perspectives around such new paradigm thinking.

The papers presented today and tomorrow, while written in many cases from various disciplinary perspectives, do however represent a truly emergent phenomenon, in that while academics have not by-and-large been aware of each other's work across the disciplinary

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walls, when put together, they nevertheless may offer a tentative outline of a coherent worldview; perhaps offering a glimpse or shadow of the possibilities inherent in this new paradigm thinking.

Our mutual ignorance is in large part due to the silo-isation of knowledge that the old reductionist paradigm of separation has effected, as we organise the 'multi-versity' of today into distinct bounded disciplines, which in turn, in this institution are manifested within four separate Colleges. The rationale behind this exercise however, and in particular this conference; is to further develop intra-institutional trans-disciplinary competencies across the university, and through highlighting the radical interconnectedness of our being, with each other and with the rest of our universe, to help recognise multi-faceted and multi-scale perspectives, which recognise inherent (social, ecological and economic) system complexity. By our conferring, we aspire 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. In doing so however, we also wish to project our work outwards to the wider world with a view towards forging inter-institutional research links.

For this conference, each of the authors from across the university were simply given a brief to offer a perspective situated in the context of their own work, research and reflections. In laying out the proceedings based on the extended abstracts our intention is to enable, not constrain; to open, not close a conversation. If we are collectively successful over the next couple of days, new possibilities, synergies and purposes will emerge. The following, as articulated below, is therefore, only the story so far!..

**References:**

Eisenstein, C. 2011. Sacred economics: Money gift and society in the age of transition. Evolver Editions, CA <http://sacred-economics.com/>

Morin, E. 2008. On Complexity. Hampton Press, NY.

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## Conference Session Contexts and Preview

### Session 1: Socio-ecological Integration

The papers in the first session lay out some of the conceptual, contextual and case based approaches to the integration of the social, economic and environmental dimensions of sustainability. In considering concepts of 'social learning', 'ecological integrity', stakeholder 'engagement, rural sustainability and diversity, these papers span a wide range of fields of application and policy domains including the EU Water Framework directive, EU Conservation Law, the role of technology in national climate change policy, EU Agricultural Policy and also consider the implications of complexity theory for a truly integrated approach to sustainability.

In the first paper, *Bacci and Chapman* take the topic of increasing anthropogenic pressure on water as a life giving resources as a key problematic and address the theme of sustainable resource management as an exemplary challenge to trans-disciplinary collaboration. Moreover they draw our attention of the necessity of transcending boundaries and integrating scientific and social participation in their exploration of mechanisms of social learning employed in the Integrated Water Resource Management (IWRM) methods used in the initial implementation of the EU Water Framework Directive.

The second paper also begins from the EU level, this time with the Habitats Directive as the point of departure. *McIntyre and O' Halloran* take the concept of 'ecological integrity' as a prime example of how a key normative component of EU conservation policy remains 'undefined and only barely understood from a legal perspective'. Viewed from their respective disciplinary perspectives the authors diagnose a need for 'a structured trans-disciplinary dialogue' bridging the legislative and ecological domains and demonstrate its value in the very form of their collaboration.

The third paper, while considering the broader global context of climate change mitigation and adaptation responses, recognises that climate change impacts will be local and varied. *Rogan, Bolger and Ó Gallachóir* of the Sustainable Energy Research Group outline a core methodological approach adopted in the Climate Technology Fellowship in UCC that integrates both a trans-disciplinary and stakeholder approaches to sustainability. The project, in its early stages, integrates 'the principles of a Technology Needs Assessment process, whereby the criteria for the multi-criteria assessment are chosen through a stakeholder engagement process'. One of the key objectives of the research is to contribute to the integration of science and policy by investigating 'the key technology potential at points where Ireland's unique climate challenges and particular research strengths are aligned.

In the fourth paper, *O'Shaughnessy and Sage*, continue the theme of context related engagement with sustainability transitions, this time in relation to EU Common Agricultural Policy. Taking the vantage point of a transition period in European agricultural policy and the horizon of Food Harvest 2020, they reflect on the status of rural sustainability in post-Celtic Tiger Ireland. The authors review the substance of Food Harvest 2020 and 'examine what the

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implications might be for rural life and our environmental responsibility'. The paper also considers the emphasis on export led growth in the agricultural sector at the expense of domestic food security in current policy directions and begs the question of what all of this means for sustainable rural development in Ireland.

Byrne's paper on the role of diversity in sustainability concludes this section with a salutary warning of the limits to ascendent integration. The theme of his paper, drawing on the insights of complexity theory, is that a more contingent approach to sustainability across the ecological, social and ecological domains will have necessarily to depart from the paradigms and assumptions underlying modernist conceptions of progress that has led to our current unsustainable societal construct. Drawing on quantitative research on ecosystem dynamics he argues that sustainability ultimately requires a dynamic balance between opposing tendencies of ascendancy and efficiency on the one hand, and diversity and redundancy on the other. Moreover, any narrative that seeks to extinguish uncertainty is in itself, unsustainable.

## **Session 2: Citizenship, Community and Culture**

The papers in the second session develop an emergent theme from the previous session as they consider the participative and practical dimensions of stakeholder involvement in sustainability.

In the first paper, O Tuama and Davis consider whether a 'transition from an ecologically unsustainable global society is compatible with democratic politics' and which 'form or model of democratic politics would be most appropriate to such a transition'. They argue that a type of green democracy might be the best possibility for navigating the path ahead.

Keohane switches the focus from the global to the local with particular attention to experimental or 'intentional communities' aimed at securing a transition to 'a better life ' for their participants. Drawing on case studies, past and present, in contexts as diverse as Canada, Ireland, Scotland and Denmark he applies insights from sociology and anthropology to understand the dynamics of decline and renewal at their core. The paper attempts to gain insight into the social sustainability of these experiments and draw out potential lessons into the sustainability of future communities.

The final paper transcends the global and local levels taking sustainability in the film industry as its core theme. Rascaroli defies expectation here, insofar as one might expect a reflection broadly grounded in cultural studies and particularly within the idiom 'eco-criticism', she locates her inquiry in the evolving material practice of the film industry where emergent processes and protocols are sensitized to sustainability criteria in the cultural production of film. In a practical case study situated in West Cork, she draws our attention to evolving cultural practices where existing community resources are mobilized in the Corona Fastnet Short Film festival as 'the response of a rural community to cultural centralization'. She points out that this is not simply a principled engagement with sustainability, rather it represents a practical response to the 'disappearance of material resources and the emergence of digital media and of the digitization of film'.

## **Keynote Paper 1**

The first keynote address is provided Professor *Andrew Stirling* of the University of Sussex. The paper and subsequent discussion will focus on bringing conceptual clarity to the notion of transitions to sustainability at the core of our conversation.

## **Session 3: Regulating Technologies**

The papers in this section are clustered around the theme of regulation and technology and are considered in the context of both the more prosaic and practical considerations of the terms and their wider conceptual location as regulative technologies or 'technologies of governance'.

The first paper begins from the perspective of a clear and present danger of 'non-hazardous industrial wastes' generated from current production processes. Using a data-set from Pennsylvania, *Lyons* takes an evidence based approach to investigate the industrial ecology of waste flows over time. He specifically interrogates his data-set with a view to testing elements of the theories of industrial ecology and ecological modernisation that suggest that 'technical changes rather than structural changes' to the organisation of industrial production are a sufficient condition to reduce negative ecological impacts.

From the more grounded questions of technique versus transition in the field of sustainable production the second paper takes a more transcendent view, quite literally with its 'head in the clouds' – considering the potential contribution of emergent 'mobile cloud services' in the digital domain. *Grigoras* reflects on the possibility of active citizen engagement in urban sustainability enabled by the emergence of complex, extended mobile digital networks. He charts a range of possibilities from the more instrumental involvement in extended environmental quality monitoring networks, through the provision of real time environmental information and service provision, up to and including the potential for mobile cloud service as a medium and mechanism for the participative democratic decision-making at local level. In doing so, he explores the prospective digi-scape transcending and potentially integrating more conventional understandings of democratic communities with the variants of cyber-communities and extended epistemic communities that could contribute to transitions urban sustainability.

The third paper in this section brings us back down to the question of regulation and governance. *Safari*, while specifically mentioning offshore hydrocarbons and renewable energy, is less concerned with technology *per se* than with the specific technologies of governance required to regulate the interface between societal demand for energy development and 'effective protection of the marine environment and sustainable use of resources'. The paper is located at the nexus of: public and private interests, nationally and internationally; and the rights, responsibilities and liabilities of these interests at international, regional and local level. The paper seeks to inform the debate on the need identified for an integrated regulatory framework for marine or coastal management in Ireland.

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The final paper in this section continues with the theme of emergent regulative challenges this time in the field of nanotechnology, specifically the proliferation of nano-materials across a broad spectrum of products and applications. Although currently restricted to low volume, high value applications Sheehan suggests that projected market valuations of \$2.4 trillion by 2014, implies that their diffusion in everyday life through household consumption is likely to be significantly accelerated by the imperatives of economic growth. The question he poses is whether societal regulation should precede these developments or simply react *ex post facto*. He suggests that nano-materials represent a boundary crossing technology *par excellence* since they are able to 'cross skin, intestine, lung, cell and other crucial bio-barriers and can enter cells and even organelles where they are capable of causing toxicity'. Asking a series of provocative questions transcending both scientific and socio-economic rationalities, reminiscent of Beck's original formulation of 'organised irresponsibility in the risk society', he suggests that we may be looking at an emergent of category of pollutants that may pose unique problems across societal groups ranging from environmental toxicologists, to governments and regulators, and ultimately impacting citizens.

### **Breakout Session**

The afternoon will be punctuated by breakout sessions informed by this orientation paper, with structured reflections on the proceedings of Day 1 and anticipating discussions of the themes of Day 2. The objective of these sessions is to provide space for the exploration of strategic synergies, potential collaborations and the specific targeting of potential trans-disciplinary research and teaching opportunities. The outcomes of these discussions will provide input into the reflections and future directions session at the end of Day 2.

### **Keynote Paper 2**

Day 1 concludes with a keynote paper by Dr *John Barry* of Queen's University Belfast, who will reflect on the role played by techno-optimism and how it relates to transitions from unsustainability.

### **Day 2: Keynote Paper 3**

The third keynote paper is delivered by Professor Michael Narodoslowski of TU Graz. The core theme of his address is regional sustainable development. Professor Narodoslowski has a long track record of working in trans-disciplinary research programmes on local and regional sustainable development and is editor of an open source journal on sustainable energy. As part of his presentation he will share his experience of designing and delivering regional summer schools on societal energy.

### **Session 4: Transition Narratives**

The papers in this session consider the role of transition narratives at the intersection of philosophy, law, political science and sociology from the global to the local levels. In the first paper, *Skillington* argues that the scale and complexity of climate change and the associated humanitarian cost requires a new 'social, political and legal understanding of the global geography of resource justice'. She argues that climate justice is currently constrained by the communitarian logic tied to nation state responses to climate change, where the emphasis is on



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compassion rather than an obligation to respond to those threatened with ecological destruction – leading to a condition of 'non-responsibility' for climate change. She examines how 'competing visions of climate justice today define equity, responsibility and juxtapose what we share in common, our experiences of commonality and with different constructions of the commons'.

The theme of responsibility is picked up on by *Sage-Fuller* in the second paper. She revisits the 'precautionary principle', a key normative foundation of the sustainable development discourse since the 1980s, which she argues 'was at least a very influential principle of environmental governance, if not law'. In a bid to strengthen the jurisprudential foundations of the precautionary principle she embarks on a philosophical archaeology of the principles of precaution and prudence in the works of Jonas and De Corte on human action in a technological age. Ultimately she seeks to understand what role precaution and prudence could play shaping human action, 'guiding us towards sustainable development and to avoid environmental degradation'.

The third paper shifts attention from the realms of global justice and principles to the role of narratives in shaping the climate change debate. Beginning with a brief overview of recent literatures across a range of disciplines and trans-disciplinary contexts *Mullally, Damery, Linehan, Milner and O' Connor* of the Energy, Climate and Community Response Group (ECCRG) examine the emergent academic grand narrative on the 'Anthropocene' identifying three main structuring metaphors of somnium, soma, somnambulism. These are not intended as determinant categories, rather in spirit of sociological inquiry are ideal types or probes used seek out specifically Irish narratives of climate change at national and local level, and at policy and local community level. Public opinion surveys and national and regional print media are examined to determine the story of climate change as inputs into opinion and will formation in public sphere in Ireland.

The final paper in this session reflects on the vexed question of why as a society (locally and globally) we seem incapable of changing to a sustainable future, despite all we know. This is a collaborative effort from four academics with different backgrounds – *Fitzpatrick, Byrne, Barry and Mullally* bring with them scientific, technical, sociological, economics and political backgrounds and while the paper proposes some potential reasons for our reluctance to change, it is written more with the aim of stimulating reflection and discussion, rather than make any claims towards proposing some sort of definitive answer(s).

## **Session 5 Planning Futures**

In the final panel of papers, we consider planning in its various connotations (e.g. scenario building, modelling, physical planning, as well as inter and intra-institutional planning for the future) as a preface to our concluding discussion. The papers in this session provide an axis for reflection on the specificity, in marketing speak the USP, of UCC.

*Ó Gallachóir, Deane and Chiodi*, refocus attention on the science/ policy interface, specifically focusing on 'changes in the energy system due to climate mitigation pathways' in Ireland. While focusing specifically on technology, economics and land-use, the quantitative evidential inputs outlining the cost implications of energy transformation and transitions potentially

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contribute to wider deliberations on the social choices facing Ireland beyond the specifically identified/targeted policy communities.

Moving from the national to the regional/ local level *Hall, Brady and O'Sullivan* make a case for appropriate governance at the metropolitan level in pursuit of competitiveness, sustainability and resilience. Recognising that the regional level in Ireland has more often been a politico-administrative convenience rather than a functional/ functioning entity with a distinctive cultural identity the authors critically reflect on the experience of CASP (often lauded as an exemplar of regional planning) to propose the idea of the Cork Metropolitan Area as 'a new territorial and governance proposition for the city region'.

Whereas the previous papers reflect upon UCC from the inside-out (UCC to national, regional/ local), the third paper provides a mirror from the outside-in. *Maier, Narodowski, Mullally and Byrne* input reflections from a Leonardo Da Vinci Internship in the Department of Sociology in Autumn 2012. During the internship Maier was both exposed to disciplinary and transdisciplinary work within UCC, including the initial planning of this conference. In addition to reflections, he will present to opportunity for future collaboration and open source tools for regional sustainable development planning.

The final paper, appropriately, aims to 'bring it all back home'. *Poland and Koch* remind us that before we embark on quixotic 'tilting at windmills' - quests to change the world, we should begin by changing ourselves – getting our own house in order. The Sustainable Campus strategy provides a unique bridge across teaching, research, the student body and University management. While it has been very successful in attracting international plaudits and awards, if it is to be sustainable it will only flourish and be meaningful over time if we turn our collective knowledge, energies and commitments back on our own programmes, projects and practices.

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5<sup>th</sup> September 2013.