

*Charlie
Wilson*

*Will
McDowall*

***DISRUPTIVE INNOVATION
AND LOW-CARBON TRANSITIONS***
(IST 2018 dialogue session)

*Rachel Freeman
(MC)*

*Mark
Winskel*

*David
Tyfield*

today's dialogue session

16:00 – 16:05 introduction

16:05 – 16:15 icebreakers

16:15 – 16:30 four initial perspectives

16:30 – 16:50 audience perspectives

16:50 – 17:00 wrap-up

today's dialogue session

- Explore contrasting perspectives on disruptive innovation and low-carbon transitions
- Stimulate debate by presenting four extreme (caricatured) propositions on the subject
- Allow you to hear and see your views on these propositions
- Give you a chance to try something a bit different: silly but serious!

today's dialogue session

16:00 – 16:05 introduction

16:05 – 16:15 icebreakers

express your view! 1st move

16:15 – 16:30 four initial perspectives

express your view! 2nd move

16:30 – 16:50 audience perspectives

express your view! 3rd move

16:50 – 17:00 wrap-up

To record if and how your views change, we would like to take **pictures** for inclusion in a short write-up of the session (inc. blog, web post).

If you prefer not to be photographed, please let us know.

trial run: express your view by moving

- ***Which direction is North Korea?***
 - move (with your chair) towards the corner of the room you think is closest to North Korea
 - no checking on phones!
- **then discuss with your neighbour:**
 - what do you understand by 'disruptive innovation'?
 - 1 minute each!

If you prefer not to move for whatever reason ...
don't worry, just stay put!

*Disruptive innovation is
meaningful
for low-carbon transitions as
consumer demand for
novelty can transform
markets*

*Disruptive innovation is
irrelevant
for low-carbon transitions as
transitions are
systemic*

Four perspectives on disruptive innovation and low-carbon transitions

*Disruptive innovation is a
distraction
for low-carbon transitions as
it fetishes entrepreneurship
rather than solving
society's problems*

*Disruptive innovation is
essential
to low-carbon transitions as
"transition" is not just
sociotechnical but also and
primarily political*

express your view! 1st move

If you prefer not to move for whatever reason ...
don't worry, just stay put!

*Charlie
Wilson*

*Will
McDowall*

*Four perspectives on disruptive
innovation and low-carbon transitions*

*Mark
Winskel*

*David
Tyfield*

express your view! 2nd move

If you prefer not to move for whatever reason ...
don't worry, just stay put!

Charlie
Wilson

Will
McDowall

Your views on disruptive
innovation and low-carbon transitions

Mark
Winskel

David
Tyfield

express your view! 3rd move

If you prefer not to move for whatever reason ...
don't worry, just stay put!

Charlie
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Will
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additional slides

Is disruptive innovation relevant for low-carbon transitions?

And what is disruptive innovation anyway?

Ten contrasting perspectives in
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Perspectives

Critical perspectives on disruptive innovation and energy transformation

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ABSTRACT

What are 'disruption' and 'disruptive innovation'? And what relevance do they have for energy transformation? Ten critical perspectives offer ten contrasting responses to these questions. The relevance of Christensen's canonical definition of disruptive innovation is highly contested in its applicability to energy and climate challenges, as is the usefulness of analysing discrete business models or technologies rather than socio-technical systems. Further research on disruptive innovation and energy transformation needs to tackle: (i) the social, systemic and emissions impact of widespread adoption; (ii) how to mitigate the adverse distributional consequences of disruption; (iii) the consumer appeal of 'good enough' products for users marginalised or excluded from mainstream markets; (iv) the role of incumbents in system transformation; and (v) the reasons for geographic variation in disruption processes currently underway.

1. Introduction

Needs and expectations for energy system transformation keep mounting. The bar has been raised still higher by the Paris Agreement's aspirational aim for 1.5 °C mitigation and the Sustainable Development Goals' energy access for all. Rapid, deep, and pervasive changes to the way energy is resourced, converted and used require marked discontinuity from current trends [1,2]. But does a sustainable energy future imply 'disruption'?

Innovation is conceived of most simply as novelty, or more formally, as "putting ideas into practice through an iterative process of design, testing, application, and improvement" [3]. Innovation is a central element in sustainable energy narratives and activities. Alongside the Paris Agreement, the G20 signed up to 'Mission Innovation' and a doubling of public R & D investments to 'accelerate the clean energy revolution' [4]. Many emerging innovations – from decentralized electricity generation and electric vehicles to peer-to-peer business models and digitalisation – are frequently labelled as 'disruptive' [5]. But 'disruptive innovation' is a slippery term used differently by entrepreneurs, incumbents, regulators and academics, and applied variously to technologies, business models and sociotechnical systems. Shorn of its association with innovation, 'disruption' also takes on a very different and largely negative connotation.

So what are 'disruption' and 'disruptive innovation'? And what relevance do they have for energy transformation?

This Special Section on 'Disruptive Innovation and Energy Transformation' offers ten Perspectives on what disruption and disruptive innovation mean, and whether they are useful lenses for examining the sustainable energy challenges of our time. The Perspectives were invited from authors with a range of backgrounds who were given free rein to articulate their views subject to two constraints: they had to explain how they interpreted the terms 'disruptive innovation' and/or 'disruption'; and they had to explore whether and how they thought either term was relevant for energy transformation. As Perspectives they are intended to be "opinion-like pieces on a 'hot' topic, introducing new concepts, ideas and findings to the field of energy studies" (ERSS Editorial Guidelines).

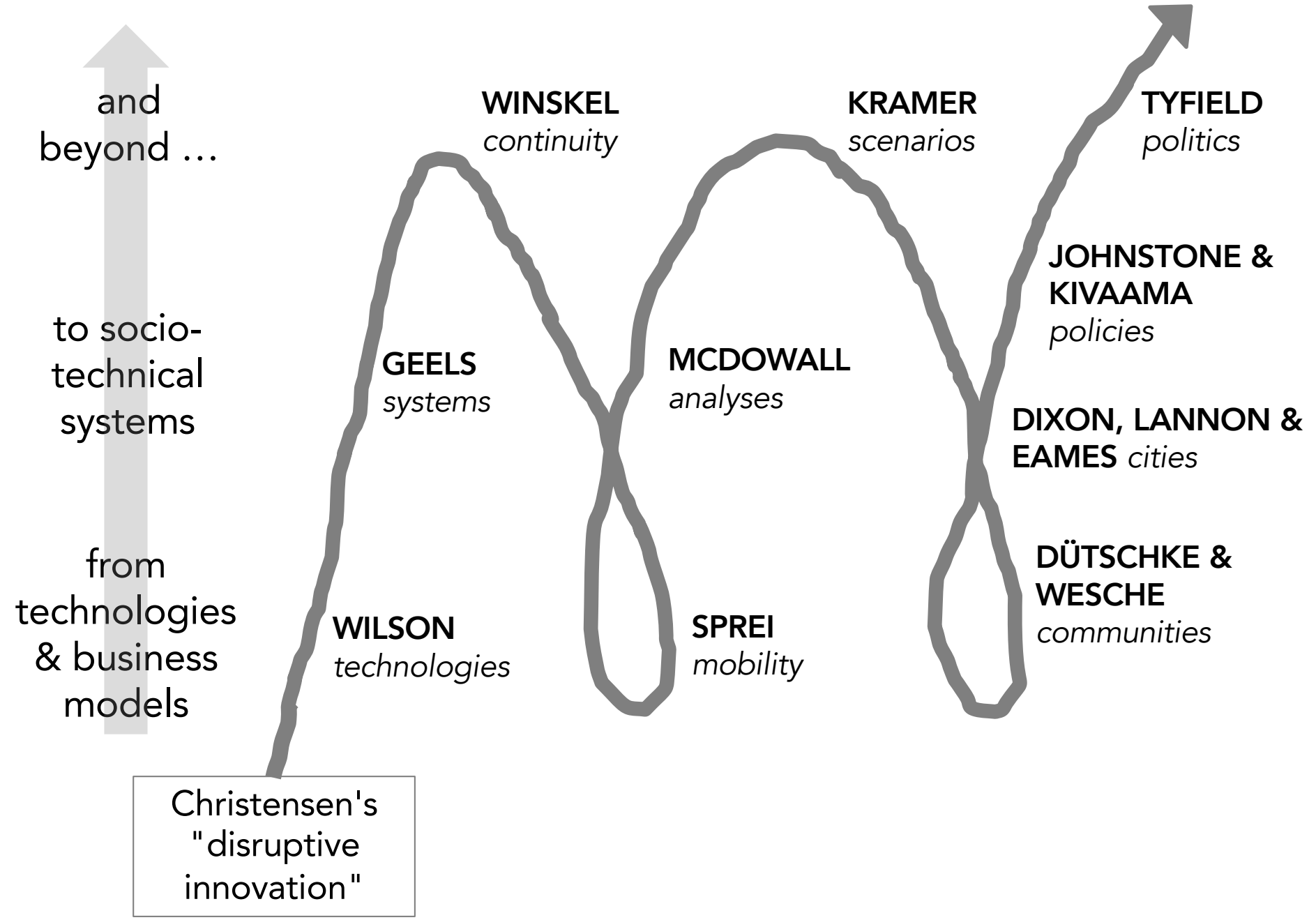
The collective result is an illuminating set of arguments and counterarguments, touching on Christensen's canonical definition of disruptive innovation, but then departing in critical and often intriguing directions. Clayton Christensen, a leading business and management scholar, popularised the term 'disruptive innovation' to describe low-cost, low-end goods and services which appeal to consumers marginalised or excluded from mainstream markets [6]. Historical examples of disruptive innovations – from microcomputers to discount retailers – illustrate their transformative potential. Could analogous disruptive *low-carbon* innovations help transform energy systems? The Perspectives in this Special Section explore this question in depth, and reach conclusions ranging from a circumspect yes to a categorical no. But it is the arguments why which are important.

To be clear, this is not an abstract or theoretical debate. Energy transformation requires directed, aligned, multi-scale efforts to innovate more sustainable ways of producing, distributing and using energy. Consumers are an elephant in the room: at best, consumers are

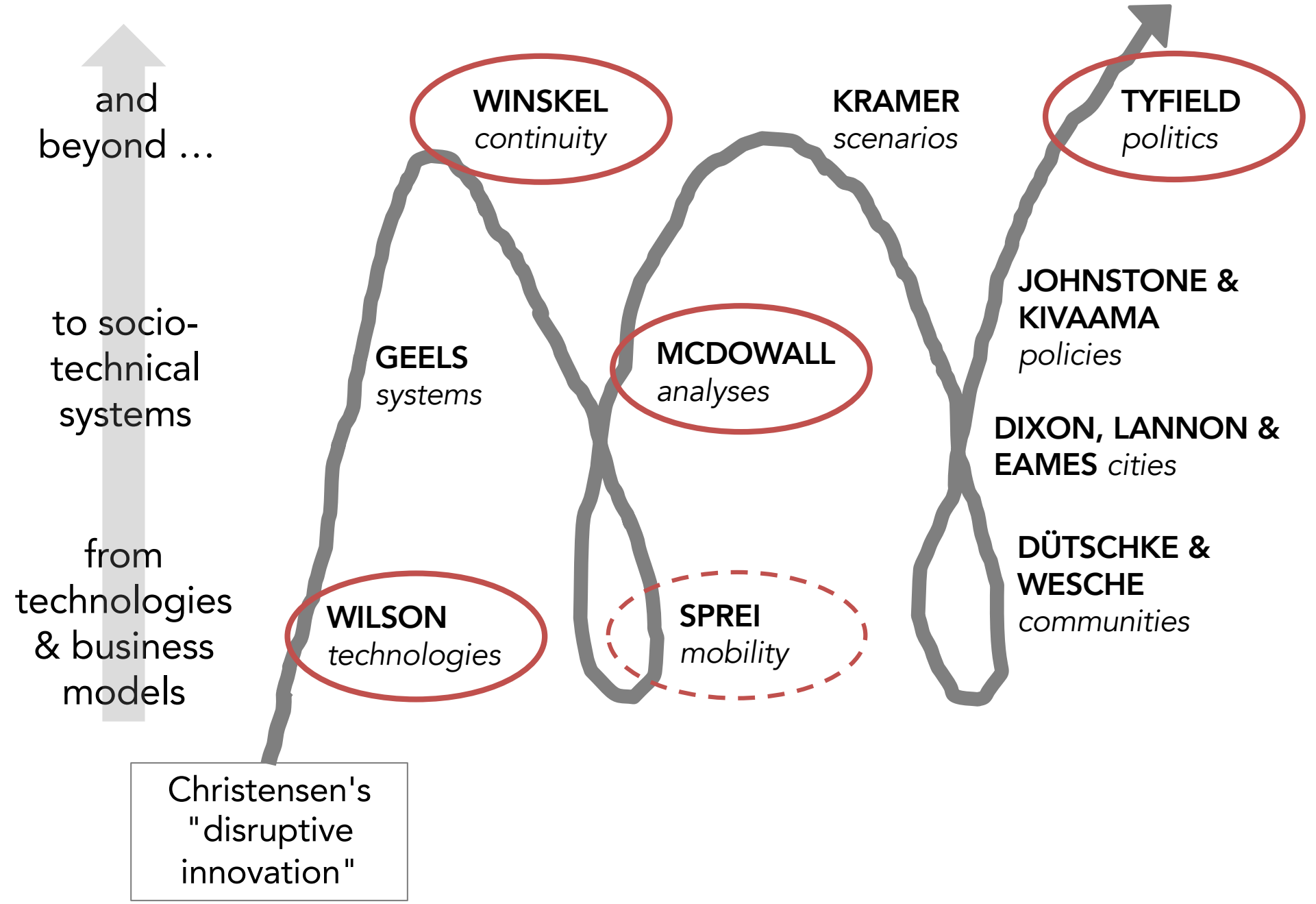
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Dialogue through movement

- We will move around the room (3 times) to show our relative agreement with four positions on disruptive innovation and low-carbon transitions
- Move towards the position you most agree with
- We can move:
 1. Staying standing up and walking to a new position
 2. Moving our chairs to a new position
 3. Moving between chairs fixed in position

Any preferences from these options?