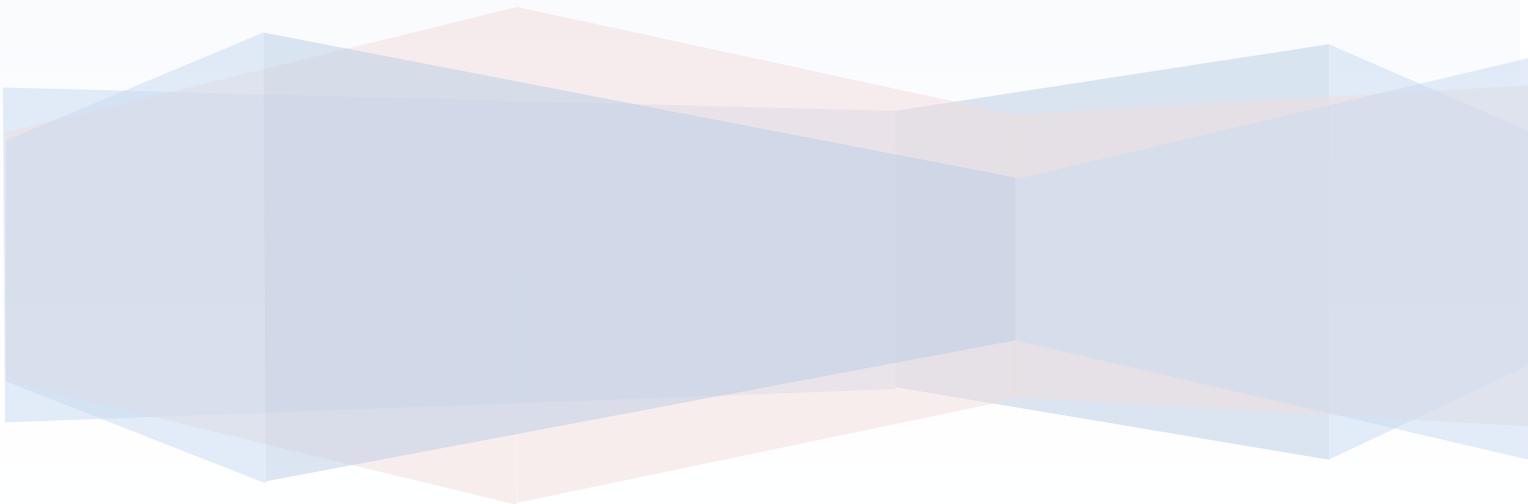


Universities for the future: A report for the Worldwide Universities Network

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Contents

1. Introduction.....	4
1.1. Basis for the report	5
1.2. Structure of the report.....	5
2. Contributing to society’s conversations about the future: academics and universities in the Worldwide Universities Network	6
2.1. Future-facing activities in the WUN	7
2.2. Personal and Disciplinary Orientations toward the Future	8
2.3. Tensions	10
3. Imagining Universities <i>for</i> the Future	13
3.1. Research for the future	13
3.2. Teaching for the future	13
3.3. Citizenship for the future	14
4. Universities for the future – a specific role for the WUN?	15
References	16
Appendix 1: Methods	17
Appendix 2: Critical Friends	17

1. Introduction

In February 2013, the Worldwide Universities Networkⁱ issued a call for proposals for a report on ‘the Future University of 2030’. This is the sort of request that often brings the consultants running with offers of workshops for scenario development and reams of trend data (Sayers, 2010). Indeed there is no shortage of scenarios describing the future university of 2030 (e.g. Thorne, 2001; Enders, 2005; Havas, 2008; Kubler & Sayers, 2010; Rossel, 2010). Such scenarios tend to explore the familiar terrains of the role of the university in the ‘knowledge economy’, disruptive technologies, the changing balance and ethics of public/private funding, the balance between civic responsibility and economic viability, and institutional competition in a global education market (Rossel, 2010); as such, they present a range of challenges and choices that should be familiar to any University Vice Chancellor who has been paying attention recently.

The authors of this report proposed a different approach to the WUN. Instead of asking what the university might look like *in the future*, we suggested that it might be more useful to understand the potential role of the university *for the future*. Drawing on Michael Young’s (2013) argument that a core function of the university was to support society’s conversations about the future, we suggested that it might be interesting to explore what role universities might play in helping societies to understand, navigate, shape and make choices about possible futures.

After all, the search for future scenarios that we see in the university field is not restricted to higher education. Rather, in corporate boardrooms and policy arenas around the world, managers and ministers lacking confidence in the past as a guide to the future are spending significant time and resource seeking out ‘futures expertise’ to support decision-making in the contexts of contemporary change. New professions are emerging to offer this expertise, with organisations such as the APFⁱⁱ, WFSFⁱⁱⁱ and others bringing together academics, practitioners and consultants working in this field. New institutions are being established, from think tanks such as the Long Now Foundation and the Institute for the Future, to design agencies such as IDEO. At the same time, contemporary popular culture is going through a familiar phase of apocalyptic anxieties – exploring through film and online, books and magazines, a range of catastrophic or utopian visions of environmental catastrophe or technological rescue. The problem of ‘the future’ is a live concern, therefore, that is manifested at every level of society – from the political arena to the day to day choices of citizens.

While it is far from certain that the contemporary period is unique in its obsession with ‘the future’, it is clear nonetheless, from these proliferating institutions, professions and popular cultural references, that there is a real demand across all areas of society to find better ways to think about and ‘use’ the future^{iv} for decision-making.

Universities as a whole have been relatively slow to respond to this demand. There are some long established and well respected institutes of what has become known as Futures or Foresight studies in a limited number of universities around the world (e.g. Manchester, Tamkang, Hawaii). Moreover, a number of older universities, such as Oxford, are beginning to make a significant investment in this area as a way of building cross-disciplinary collaboration around areas of contemporary concern (see the Martin Institutes for ‘the future of aging’ or ‘the future of humanity’). Despite this, however, the broader role of Universities, and the contribution that *existing* disciplines and teaching rather than those that explicitly name themselves ‘futures studies’, might play in this area, is poorly understood.

The aim of this report, therefore, is to begin to explore this issue and to address, in particular, the question: **What is and what might be the role of universities in contributing to society's conversations about the future?** In particular, it is concerned with exploring the role that the Universities in the Worldwide University Network might play in this area.

1.1. Basis for the report

Adams & Groves (2007) have provided a historical analysis of different (predominantly western) traditions of the search for knowledge of and action in the future, in which universities are mentioned alongside other social institutions and practices. Others such as Wright (2010) and Levitas (2013) have advanced the case for a new relationship between academic research and practices of hope and utopianism. Others (e.g. Barnett, 2011) are making a strong argument for a new ethical relationship between universities and the development of future ethical environmental and social change. There are also a number of surveys of the current state of 'futures' or 'foresight' studies in universities (e.g. Dator, 1998/2002). There remains, however, no systematic map of the ways in which familiar university disciplines – from history to chemistry – explicitly seek to contribute to contemporary debates about and insights into 'the future'. Some efforts have begun in this area (see, for example, Poli, 2010) but the field is changing rapidly, not least because the importance of anticipatory assumptions and practices is beginning to be recognised in fields ranging from psychology (e.g. Seligman, 2013) to cultural geography (e.g. Anderson, 2010). It remains, therefore, a significant intellectual endeavour to map out the ways in which existing university disciplines and practices are oriented and orienting themselves towards the future.

Such a large-scale endeavour is beyond the scope and resources of this study, although we aim to take a first step in that direction. Our more modest aim, instead, is to explore the broad orientations toward the future of the universities and academics in this network. To that end, we conducted discipline-focused interviews with 10 academics from across the sciences, social sciences and humanities to unpick and clarify where disciplinary differences might emerge (See Appendix 1). As well as mapping the existing literature in this area, we also examined how the 19 universities represent their contributions to 'the future' through their public facing websites. Finally, we ran reflexive discussions with over 70 participants – staff and students - in three WUN universities (Bristol, Zhejiang, Wisconsin Madison). In these workshops we explored participants' conceptions of the responsibility and role of academics and universities in relation to 'the future' through research and teaching. The study also benefited from early discussions as part of a European 'Futures Meeting' in Lausanne and from the informal critical friendship of a number of leading foresight practitioners and researchers (see Appendix 2).

1.2. Structure of the report

The report is organised into two sections:

The next section (Section 2) focuses on the way in which the WUN universities and their academics are currently representing and understanding their relationship to 'society's conversations about the future'. Drawing in particular on the website survey and interviews, it explores the distinctive strengths that academic disciplines and universities might play in this arena and some of the barriers to realising this potential.

The subsequent section (Section 3) takes a normative and future-facing perspective, and draws in particular on the three workshops to describe how WUN universities might improve their capacity to contribute to 'society's conversations about the future' through research, teaching and citizenship activities.

The final section (Section 4) argues that the WUN has the potential to take a lead in increasing the capacity of universities and academics in its network to make a significant contribution to society's conversations about the future

2. Contributing to society's conversations about the future: academics and universities in the Worldwide Universities Network

Most WUN Universities are engaged in a concerted effort to present the future as both a problem and a possibility with which they are actively engaged. It is a rare Vice Chancellor's message, for example, that does not invoke the future as a site of university intervention. Consider Nanjing's aspiration:

'we aim to be a cradle for preparing innovative talents for the future, a frontier for activities giving insight to the unknown world, seeking truth, providing scientific grounds for solving important problems... Nanjing University is fully aware of and ready to be entrusted with new missions and responsibilities in the 21st century...'

Similar future-facing sentiments are implicit in university taglines: *'embrace our culture, empower our future'* (CUHK), or *'Make the world ever better: the meliora challenge'* (Rochester); and in mission statements that claim a role for the university as a resource to *'address global challenges facing society, today and in the future'* (Sheffield) in response to a world that *'present[s] us with an unfolding sequence of challenges, opportunities and threats'* (Alberta).

Underpinning all these statements is the assumption that a university will not only contribute positively to society's *conversations* about the future, but that it has a role to play in the active creation of better futures for society through its scholarship, research, teaching and civic activity. Such aspirations are not simply the work of university marketing departments. In many ways, they echo the ethical-political commitments of many academics working in WUN universities today. As one academic we interviewed argued: *'you do it because you want to make the world a better place'*; while another made the case that this longer-term perspective was one of the distinctive contributions of a university to society: *'universities have time to think about the future, who else has got the time to do that, if not universities, where else?'*

This isn't to say, however, that the rhetorical invocation of 'future challenges' is without its more instrumental uses; as one of the scientists we interviewed pointed out, for example, it is very convenient when your personal research interest 'happens' to elide with an area of significant future concern and consequently, with research funding priorities. Similarly, no university ever went bankrupt promising to prepare its students 'for the future'; and it is noticeable that the highest frequency of references to the future on all university websites was to the future life chances and trajectories of students. Universities' claims to contribute to shaping the future, therefore, can be understood as both rhetorical *and* real; as both ritualistic and reflective of deeply held political-ethical positions.

What we will do in the remainder of this section, therefore, is to try to get beyond these rhetorical invocations of 'the future' as a rationale for university activity, to try to better

understand how ideas of and assumptions about the future inform contemporary academic practices and, in particular, the relationship between these practices and wider societal conversations.

2.1. Future-facing activities in the WUN

To begin, then, what sorts of work are these 19 universities claiming to do in relation to the future? A number of topics are highly visible on university websites: **resilience** in terms of food, water, farming, natural resources, future cities and urban planning; **greening technology** especially identifying alternatives to fossil fuels and alternative food systems; the **ethics** of responsibility to future generations; **social innovation**; **medical** and healthcare futures; **demographic** changes and how to adapt to them; **peace** especially relations between countries; libraries, **archiving** and **conservation**; problems of and responses to **complexity**; **labour markets** and changing demands for skills (and universities). Perhaps the most common topic, as we have already observed, however, was the question of **students' futures**, their careers and the contribution the university would make to students future trajectories through teaching.

Looking across these universities, however, there are some differences between the WUN universities themselves that may be reflective of broader cultural, historical and geographical conditions. References to peaceful international relations and global futures, for example, are more visible in Asian Universities' public statements; in contrast, the UK/US universities, in particular, are positioning themselves strongly in relation to a set of future technical 'global challenges'. Such differences may be reflective of different cultural traditions and orientations toward the future – the difference between Confucianism and western post-enlightenment thinking, for example. At the same time, the sorts of future challenges that universities explicitly identify are often connected to the specific conditions of universities' local concerns and communities; such as Maastricht's work on the future of Europe; Sheffield's engineering futures work; Capetown's work on 'transformation' to more equal societies; Bergen's work on the future of oil, marine fisheries and energy. Equally, the primary sites of societal conversations about the future are understood differently in different universities; Nanjing, for example, identifies these as located at the heart of the Chinese nation state; Maastricht identifies particularly with a future European project; US universities specifically flag the concerns and issues of their local communities and the role of their students and staff in addressing these; in contrast, the UK universities make no mention of national interests and often focus on regional or international debates.

These broad topics reflect the litany (Inayatullah, 2005) of contemporary anxieties about the future. The actual research activity described on the websites, however, is much more diverse than this litany might imply and suggests that explicitly future-oriented activity is going on across all disciplines and faculties. This activity includes, for example: the development of 'the future burger' (Maastricht) scenarios for the future of EU integration (Maastricht), 'future of wind energy (Maastricht), environmental and ecological modelling (Nanjing), 'Silk Road to the future' (Nanjing), pandemics (CUHK), future of the built environment (CUHK), mapping future of global protest (Penn State), food security (Penn State), biodiversity – raptor preservation and elm trees (Penn State), responses to Rio 2012 (Unicamp), Dependable computing (Unicamp), Future of English language (UniCamp), future of libraries (Unicamp), future of heads-up displays (Unicamp) Centre for Low Carbon Futures (Sheffield) future of fairgrounds (Sheffield), new dynamics of ageing (Sheffield), robotics (Sheffield), flexicurity (Sheffield), climate modelling (Alberta), water supply (Alberta), Asian futures (Alberta), future of forests and resources (Alberta), Aboriginal empowerment (Alberta), ethics for future generations (Auckland), technologies for sustainable

development (Auckland), labour market predictions (Auckland), future fuels (Bergen), tobacco and pandemics (Bergen), oil excavation and drones (Bergen), ethics for future generations (Bergen), changing university cultures (Cape town), green campus (Cape town), demographics of youth (Cape town), overcoming legacy of apartheid (Cape town), education futures (Bristol), Carbon reduction (Bristol), future cities (Bristol), global insecurity (Bristol), nuclear futures (Leeds), water and engineering (Leeds), journalism in the future (Leeds), resilient infrastructure (Leeds), digital humanities (Mellon), libraries and archives (Mellon), childhood obesity (Mellon), tidal power (Southampton), gold from oceans (Southampton), intelligent transport (Southampton), work futures (Southampton), Carbon futures (UWA), indigenous knowledge (UWA) future farm (UWA), education futures (UWA), future film (UWM), perennial crops (UWM), human-powered vehicles (UWM), Business and science (York), food security (York), Libraries (Zhejiang).

This diversity of activity reflects the very different views of the role of the university expressed by academics in our interviews and workshops. In these, the university was seen variously as a site of contemplation and reflection: *As academics we reflect the world and frame it and we, in turn, are changed by that, this stretches infinitely into the future;* of active participation: *the future is uncertain, but we can organise for it*; and of provocation: *'disrupting current narratives of the future. Seeding various conversations and imaginations'*.

Similarly, the extent to which universities should, in fact, be engaging in conversations with communities and societies beyond their walls at all, let alone in relation to the future, was contested. For some, the university should be a resource *'providing information and guidance telling you where to go and where not to go'* that requires active communication of findings into public debate: *'we try as a discipline to communicate what we do because we think it is an important issue which faces the human race'*. For others, the university is a place to step back, to *'study detailed histories or geographies of phenomena – to better prepare us for the future, to better understand contingency and continuity'*. For others, a core research purpose of the university is served by conversations about the future between academics and different publics, and it is these that drive the creation of new research questions:

There is no doubt that some of the challenges we try to address come from industry. Some of those are obvious like how we provided sustainable energy in the future, how to reduce reliance on fossil fuels, how to make existing chemical processes more efficient so they use less energy, they are society and industry drivers. How we achieve that is where the crossover to intellectual inquiry comes.

2.2. Personal and disciplinary orientations toward the Future

It is possible to categorise these diverse activities and perspectives into seven broad orientations toward the future. These reflect different assumptions about how the future is made, how and whether it should be influenced, and the sorts of knowledge it is possible to create about possible futures. These orientations should not be understood as mutually exclusive, indeed, some of the participants in the project adopted different orientations depending on the topic under consideration and their understanding of the issue at hand (proximity to a particular issue, for example, meant that the academics were more likely to see a particular trend as amenable to some form of influence and future shaping). Similarly, while there are common worldviews that emerge within disciplines, these are not cut and dried; indeed, these seven orientations also reflect different personal, political and ethical stances of individual researchers. The purpose of outlining them here is to encourage a

greater reflexivity about and awareness of the diversity of positions available, in 'using' the future in university activity. These orientations are outlined below:

- **Rhetorical & tokenistic futures.** In this orientation, 'the future' is invoked ritualistically simply as a rationale for activity. The future here is unexamined, often refers to the litany of contemporary expectations about social change, and is simply used as a means of justifying pre-existing plans. It is particularly prevalent in describing new investments ('building for the future'), in making the case for research funding and in describing desired student trajectories ('preparing for the future').
- **Stewardship.** In this orientation, the future is seen as a site towards which universities have a responsibility and a duty of care, in particular, by understanding, protecting and conserving assets, values, ways of living and forms of knowledge from the past and ensuring their continued existence. This duty of care is often understood as 'keeping open' the future by preserving the diversity, insights and resources of the past. It is particularly prevalent in discussions that are led by university libraries, and in the views of scholars working with historical material or with groups of people whose knowledge and ways of life are seen as vulnerable to globalising forces.
- **Foundational knowledge & modelling.** At the heart of the sciences and (some) social sciences in research-intensive universities, this orientation toward the future is one that sees the future fundamentally as a product of the past and the present. It is concerned with building foundational knowledge about how things work now - for example, about political systems, the behaviour of molecules, the causes of earthquakes, patterns of animal behaviour, human learning processes - that in a post-Newtonian worldview can only be based on evidence from the past. This foundational knowledge is then used to drive modelling and projections of possible futures that might emerge from such prior behaviours and interactions. The future here tends to be understood as a (more or less complex) system that can be influenced from action and decisions in the present; or that creates conditions and challenges for which preparatory decisions need to be taken today.
- **Critique & imagination.** This orientation sees the future as a site that can dynamically impact the present. More visible in critical social sciences and the arts, this orientation sees the ideas that we create about the future – whether through images, narratives, predictions, manifestos, prototypes – as having an effect on contemporary life and decisions. Such ideas and representations are consequently seen as a site of social struggle and ethical contestation. Critiquing future projections and imagining new ideas about the future, then, are understood as important means of effecting change in the present and resisting the 'colonisation' of the future by specific groups.
- **'Knowing the future' as a site of study.** This emerging orientation^{vi}, which is visible at the margins of many disciplines, treats the future as in dynamic relation with the present and the past, and as produced through interactions between human and material forces, historical trends and imagination. It sees the production of 'knowledge' about the future – through everyday anticipation, through forecasting, through representations, through experimentation – as a social process that requires reflexive critique in order to ensure that it is conducted ethically and responsibly. It is increasingly emerging in psychology, biology, management, education, environmental sciences, engineering, and sociology. It is particularly concerned with the development of tools and practices to better enable reflection upon the constraints engendered by habitual patterns of thought about the future,

upon the practices of decision-making in conditions of complexity, and upon the ethics of decision-making for future generations.

- **Innovation & experimentation.** This orientation treats the future as a product of human action and invention. Best captured in Lincoln's phrase 'the best way to predict the future is to build it', this orientation often identifies 'the future' as a set of challenges and opportunities that can be addressed through the production of new ways of working, new products and new ideas; or as a space of opportunity into which to launch new ideas and activities. The function of this orientation toward the future is to create, and the future consequences of such creations – whether drones, new antibiotics, new methods of teaching, new policies - are not always closely considered or even knowable.
- **Advocacy for particular futures.** This orientation treats the future as the product of decisions and actions today, about which academics and universities should take a normative position by making the case for particular futures. This orientation often sees the university and academics as allied with particular social groups, issues and concerns and as seeking to bring about certain futures through research, teaching and civic action.

2.3. Tensions

Implicit in these different orientations toward the future and in the highly diverse range of futures-oriented activities in the WUN universities, however, are a set of important tensions. First, there are clearly tensions in relation to the types of future that universities are actively contributing towards through their innovation, advocacy and research activities. For example, there are a number of universities that publicly project a commitment to green futures and ethical responsibility to future generations while simultaneously being involved in research activities that would be seen by some to be in direct contradiction of this goal, such as developing techniques to more effectively and rapidly extract fossil fuels for burning.

A second, and perhaps more fundamental tension exists between the various positions that promote stewardship, critique and foundational knowledge as a means of preserving the 'openness' of the future as compared with those more activist or applied positions of advocacy, innovation and experimentation that are seeking to promote and create particular futures. This tension becomes particularly visible in debates about whether the university should seek to have an 'impact' on society, or whether its role is more broadly to steward and produce knowledge that keeps open future possibilities.

Third, there is an important tension that concerns the politics of the future. In many ways, this originates from doubts about the validity of even talking about 'the future' at all in some research traditions. For example, for some of the academics interviewed in the project, talking about 'the future' was in some ways *infra dig.* and secondary to the 'real business' of being an academic. The political debates to which such 'real' research might contribute or which they might trigger, were seen as beyond the concern of the lab scientist. Instead, the question of the implications of such research were seen as the responsibility and problem of the social scientists:

I am a scientist not a politician. I am in a good position to inform but that is not the key issue. [...] it has nothing to do with science and it is all to do with politics and they are very different things'

There was real doubt, however, about whether social scientists alone would be best placed to contribute to and inform these political debates. As the following exchanges make clear,

such interventions in societal debates about the future are likely to require a combination of different forms of knowledge:

It strikes me that there are really three kinds of knowledge about the future that we've identified collectively. One is probable knowledge based on projections of data collected as objectively as possible, the second is to do with, if you like, where we stress uncertainty because we're saying it's all about human agency, which values prevail, it's a contest, we don't know what will happen, and the third, [...] very importantly raised this whole question of imagining where you might want to go and the difference we feel that we can make. We have agency, if you like, with the second and third categories, that we can teach people to act responsibly in this context, even though we don't know what will happen, we can imagine things in the future, we can encourage people to think about the future imaginatively. But we don't. We just say, for the first category, well, there's the data, that's what's going to happen. But I think some scientists would say, actually, I can generate knowledge that, if implemented, could change that forward trend. Now, none of us [social scientists and philosophers on the table] would claim I think to do that, but on that table over there [pointing to computer scientists and epidemiologists] maybe they would, and that would change the picture entirely [...] potentially they can come up with an invention. Now they may turn to us and say – I've no idea how to get this implemented, that's a political issue, bring in the philosophers ...

... yes, we've a lot of clout...[says the philosopher in the group]

....I've noticed your skills over the years ... [laughter]

... But they can generate a different kind of knowledge that could play out in the bigger pattern if implemented, which is of course, the exciting thing about a university, in that it does embrace people generating all these different kinds of knowledge. That's why universities are exciting places.

That's why the interdisciplinary thing is the key to the universities, but it has to be operationalized.

Most of the climate scientists I know look to the social sciences to do that [address the political issues], they say 'this is not my area', you know, and 'what are you doing about it' and I say frankly, I don't know and it's awful.[...] they're expecting this division of labour to work and it doesn't work because they're generating the data that's showing how dreadful everything is and ...

... the social scientists are sitting there going !@!*

... writing a book about cultural studies or something

Finally, common to all of our workshops and interviews, was the tension between disciplinary and technological cultures that were pushing towards ever-smaller areas of research inquiry and personal interest and against the broad understanding and worldview needed to be able to contribute to the wider public conversations about individual or social futures. As one scientist observed, his job was to *take a very big broad problem and narrow it down into smaller problems*. Such a perspective, however, militates against a consideration of the broader consequences and contexts for the research. As the UWM workshop reported:

Our challenge is to create a university that helps students and society think about the future not in small bits and pieces but in more holistic ways, to look not only for short-term technical fixes to social problems but to grasp the importance of larger narrative arcs and to see themselves as actors/agents in historical time. [...] While a common curriculum may be a thing of the past, some forms of synthesis are necessary if we are to prepare our students to have (or to lead) meaningful conversations about the future.

2.4. Tools

Across the disciplines, however, it was clear that academics are actively developing tools to assist society's conversations about the future. The tools that are being developed to address this challenge are wide ranging – they include everything from increasingly complex modelling techniques, to new approaches to understanding risk and hazard, to the theorisation of complex systems, to ethical frameworks for community futures activities, to patients' toolkits to support reframing of prognoses and future possibilities.

In many cases, the academics were working at the limits of disciplinary constraints, and seeking to develop learning and reflective processes that draw on insights from across the disciplinary divides:

there is increasing recognition that infrastructure problems that we have got now and into the future all hinge on us understanding sociotechnical systems better than we do now. It is also eco-sociotechnical systems, because sociotechnical systems are set within and interact with all the ecological systems and environmental systems.

Such arguments are increasingly made in the knowledge that decisions in complex situations are not simply technical decisions, but require a balance of technical, ethical and political priorities.

What the scientist can do is help define the probabilities, the nature of the event, where the faults are but as scientists we can force people to make decisions, that's why in the hazard community there has been a lot more work in the last 20 years to work with social scientists and how we work together to optimise decisions in terms of vulnerability. [...].

In Ethiopia the immediate needs are food, water and housing so the idea of trying to insert this long-term hazard is difficult and it comes to be a question of when do you consider it when you have more immediate needs and that also happens with land pressure

Disciplinary collaboration did not extend merely to political-ethical conversations between engineers and social scientists, however. Indeed, it was clear that the arts and humanities also had an important role to play. As one hard nosed social scientist more used to working in the defence industry than in the arts observed:

[For] transformative visions of the future [...] the arts are exceptionally good at this and think a lot about it but tend to get dismissed as being airy-fairy or irrelevant and the arts are not like that at all'.

And indeed, one of the most creative and powerful tools for supporting individuals, in this case patients, for thinking about the future, involved collaboration between philosophers and medics in order to:

... give people the tools with which to make choices about how they want to live the future rather than being moulded or pigeon holed into a sense that their future is already written, they know their prognosis, it is all downhill.'

There are highly diverse orientations toward the future in universities today, then, and real tensions based on disciplinary and ethical differences, in the relationship that universities should have with conversations beyond their walls. Despite this, however, it is clear that across the network of Worldwide Universities, there is a growing interest in bringing together diverse disciplinary perspectives to create tools and insights that help individuals, policy makers and society at large to have good conversations about the future.

3. Imagining Universities *for the Future*

What, then, might a university *for the future* look like? How could a university understand its role in contributing to society's conversations about the future? How might it improve its capacity to address the growing public and policy demands for support to make difficult decisions in conditions of complexity and uncertainty?

Based on our interviews and workshops, the defining contribution of the university might be understood as '**creating the conditions for enabling good conversations about possible futures**'. To fully realise this potential role would entail the following activities in research, teaching and citizenship:

3.1. Research for the future

A university that sought to create the conditions for enabling good conversations about possible futures through its research would:

1. **Explicitly value, articulate and protect the ways in which universities seek to keep ideas of the future open** through critique, through curiosity driven research, through preserving diverse knowledge resources and through experimentation with new possibilities. This one attribute alone distinguishes university-led futures oriented activity from commercial and futures expertise as it is often practised in policy fields.
2. **Build opportunities for experimentation and collaboration across the different areas of expertise needed to address complex future challenges.** In other words, the university *for the future* would harness the potential of the university to act *as a* university by drawing on the diverse forms of knowledge and in different disciplines. In particular, in areas such as climate change where problems require a combination of foundational scientific knowledge, political strategy, critique of contemporary conditions and imaginative capabilities, such collaborative work would be likely to bring significant benefits.
3. **Pool the diverse methodologies under development in multiple disciplines to support robust theorisation of, and ethical and responsible decision-making about, 'the future'**. Psychologists are beginning to research anticipation; engineers are developing complex systems; humanities scholars are exploring the roles of myth and science fiction; management researchers and engaged-community researchers are using scenarios; computer scientists are developing models; engineers are promoting socio-technical holistic thinking. All of these are beginning to make individual contributions to enhancing our understanding of how to make decisions about the future in conditions of complexity. Such activities are, however, highly fragmented. A concerted effort is needed to bring them into dialogue with each other.

3.2. Teaching for the future

A university that sought to create the conditions for enabling good conversations about possible futures through its teaching would:

1. **At undergraduate level - create strong disciplinary foundations as well as opportunities to encounter and develop basic fluency in a range of different disciplinary perspectives.** For example, through the classical Liberal Arts model or through the development of both 'core' and 'elective' units that enable students from different faculties to learn alongside each other on issues of substantive contemporary challenge.

2. **Invite students to articulate and explore their own assumptions about ‘the future’** and their ideas about how change happens; and the relationship of their courses to these assumptions.
3. **Create opportunities for students to inhabit and value different orientations toward the future** – by giving opportunities to engage in active experimentation, critical reflection, foundational knowledge building, advocacy and stewardship.
4. **Explicitly introduce students to the wide variety of tools that are being developed to support decision-making, reflection and action in conditions of complexity**

3.3. Citizenship for the future

A university that sought to create the conditions for enabling good conversations about possible futures through its citizenship and civic responsibilities would:

1. **Recognise and reflect upon its own role in creating and constraining possible futures** – in particular, by examining the sorts of futures that are being created through its research activity, its use of land, buildings and energy, its employment policies.
2. **Review the extent to which the university is aware of the concerns about the future raised by publics beyond its walls** – in particular, by reviewing ‘whose’ concerns the university regularly listens to and through which mechanisms.
3. **Reflecting on its own ‘uses’ of the future** – in particular, by examining which sorts of possible futures (e.g. ‘knowledge economy’ ‘innovation nation’) tend to form the basis for institutional decision-making, and which possible futures are systematically overlooked.
4. **Creating and acting as powerful, ethical public platforms** for society to conduct its conversations about the future. For example, by running events, developing publishing platforms, and creating new fora in which the diverse disciplinary resources for thinking about the future can be put into dialogue with the policy makers and publics who are addressing these issues on a day to day basis.

4. Universities for the future – a specific role for the WUN?

There are a number of ways in which the WUN is distinctively well placed to push forward this agenda.

1. The global nature of the WUN offers an important opportunity to explore how different ‘futures cultures’ and traditions might provide different analyses of and contributions toward addressing, contemporary and future challenges. To date, there have been a large number of research collaborations supported by the network. As yet, however, the explicit identification of different cultural traditions and conceptions of time, of progress, of the future, does not seem to have been mobilised as a resource to address global future challenges.
2. An important barrier to many of the proposals in the preceding section is the drive towards highly specialised disciplinary publishing. A number of WUN universities are beginning to develop innovative trans-disciplinary publishing platforms – both traditional journals and online public facing platforms – that have the potential to facilitate the sorts of cross-disciplinary thinking and encounters described here. Giving such platforms the real support of the WUN and actively encouraging and valuing publishing in such spaces would provide institutional support and encouragement to researchers seeking to build bridges between disciplines.
3. It is clear that there is significant expertise being developed across WUN institutions in supporting ethical, reflective and responsible decision-making in conditions of complexity. This expertise, however, is fragmented across disciplines as diverse as mathematics and earthquake engineering (risk assessment), politics and drama (scenario tools and forum theatre), psychology and ethology (population modelling), sociology and education (critique and capabilities). There is a strong case for the WUN to take a global lead in building the capacity of universities as a whole to contribute to public conversations about the future. Such an ambition would be significantly assisted by supporting researchers and students developing these methods to meet, to share practice, to develop experimental case studies that bring together these different perspectives, and to test their potential for enhancing public practice, research and teaching.

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Appendix 1: Methods

Researching the University Websites

The university website, while clearly not a transparent window onto all activities in a university, nonetheless can be understood as a systematic organisational mechanism intended to initiate and to maintain a dialogue with the public and to present the expertise and insight the university offers to the wider world. It is also, increasingly, a mechanism by which the university presents its collegiate mission and values to itself. The first part of this report therefore presents an analysis of the ways in which the (then) 19 Universities in the WUN network represented their contributions to ‘the future’ through their home pages, research pages and university missions. The research involved a systematic survey of these three elements of each university website (where these existed) and a systematic search using Google for the use of the word ‘future’ and ‘futures’ on the whole university website. It is important to note that the survey was conducted in English and that this means that certain webpages, particularly in the Chinese Universities, were not available for analysis. This analysis was conducted by Richard Sandford.

Workshops

In order to get beyond institutional self-representations, and to begin to drill down into disciplinary differences, the project conducted three workshops in Bristol, University of Wisconsin Madison and Zhejiang. These workshops explored in more detail the different disciplinary and personal contributions that individuals saw their work as researchers, scholars and teachers making to society’s conversations about the future. The first workshop, at University of Wisconsin Madison, brought together 11 academics from different faculties, to explore the topic ‘Learning to Think about the Future: The Role of Liberal Education’ with a specific focus on *pedagogies for the future*. The second workshop, at the University of Bristol, brought together 23 academics including invited participants, to explore the issue ‘how do different disciplines conceptualise and think about the future?’. The third workshop, at the University of Zhejiang, brought together 30 masters students to discuss “The Role of Liberal Education to the Future of Chinese People”. The workshops were recorded and fieldnotes were then written up by the report co-authors Zhao, Nelson and Facer, working with Bryony Enright and Richard Sandford in Bristol.

Interviews

Interviews were conducted by Bryony Enright, with 10 academics from disciplines relatively under-represented in the workshops, including civil and systems engineering, defence studies, biology, medical humanities, chemistry, and physical geography. The interviews lasted approximately 45 minutes, organised around the four draft categories of ‘future orientation’ identified in the Bristol workshop – optimisation, contingency, novelty and building.

Appendix 2: Critical Friends

Our sincere appreciation goes to the following individuals who have helped to shape the ideas and context for this report. Any errors or omissions, however, are our own. Professor Pierre Rossel, EPNL, Lausanne; Professor Roberto Poli, UNESCO Chair of Anticipatory Systems; Dr Riel Miller, Unesco, Head of Foresight Division; Professor Ted Fuller, University of Lincoln and editor *Futures*; Professor Sandra Kemp, V&A Museum and Curator ‘Future Face’; Dr Jon Turney, Futurist; and the Participants in the EU FuMee Network Meeting, Lausanne, September 2013

Endnotes

ⁱ At the outset of this project, the Worldwide Universities Network comprised 19 universities. Today, it has 17 members, these are: University of Alberta, University of Auckland, University of Bergen, University of Bristol, University of Cape Town, Chinese University of Hong Kong, University of Leeds, Maastricht University, Penn State University, University of Rochester, University of Sheffield, University of Southampton, University of Sydney, University of York, University of Western Australia, University of Wisconsin Madison, Zhejiang University

ⁱⁱ Association of Professional Futurists (www.profuturists.org) The APF describes itself as follows: The Association of Professional Futurists is a global community of professional futurists committed to leadership and excellence in the futures field. Our members provide unique perspectives to help people anticipate and influence the future. The APF aims to set the standard of excellence for foresight professionals. Members include futurists from businesses, governments and non-profits, consulting futurists, educators, and students in futures studies.

ⁱⁱⁱ The World Future Studies Federation describes itself as follows: The World Futures Studies Federation (WFSF) is a global NGO that was founded in the 1960s to encourage and promote the development of futures studies as a transdisciplinary academic and professional field in all parts of the world. WFSF operates as a global network of practicing futurists - researchers, teachers, scholars, policy analysts, activists and others from approximately 60 countries.

^{iv} The idea of 'using' the future originates in Miller's critique of predictive orientations toward the future. Citing Bergson, Miller (2011) argues that the urgent contemporary challenge is not to seek ever more and better ways to 'know' the future, but to exploit the creative possibilities for the present of not knowing the future.

^v This analysis, albeit supported by interviews and workshops in Zhejiang, the UK and US, needs treating with some caution as claims of fundamental cultural differences would require a much larger study for robust substantiation.

^{vi} This is an explicit focus for 'futures' and 'foresight' studies. However, Miller, Poli & Rossel (2013) also describe these emerging practices as having the potential to construct a new 'Discipline of Anticipation' which they claim would act as the basis for a wholesale re-imagining of the ontological and epistemological assumptions underpinning university research activity.