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A Vocabulary for Visions in Designing for Transitions

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Visions of sustainable futures have been proposed as a key component of transition design, offering a way for today's situations and design proposals to be compared and critiqued in the light of desired future states. Such ambitions are necessarily wide-ranging, and call for drawing together strands on design and speculation from diverse sources. Here we seek to add to the momentum by exploring a set of concepts relating particularly to this role of vision in designing for transitions. Building on perspectives and projects from other fields, we present elements of a visionary vocabulary, situating these terms in relation to challenges and opportunities for transition thinking and practice in design research.

futures, imaginaries, visioning, transition design

1 Introduction

Among the proposed elements of transition design, "visions of sustainable futures" feature centrally, in order that "contemporary lifestyles and design interventions can be assessed and critiqued against a desired future state" (Irwin, Kossoff, Tonkinwise, & Scupelli, 2015a, p.8). The big-picture ambitions of such an agenda point to a need for exploring and synthesising approaches from practitioners and researchers in other fields whose work deals with questions of vision, futures, and how they relate to the present. One starting point here, to follow from this need, is to take steps to equip transition designers with a vocabulary—a repertoire of concepts—which can both make these approaches more salient, and help make them easier to engage with.

In this piece we seek to explore a set of concepts relating particularly to this role of vision in designing for transitions, which start to build up elements of a vocabulary. In preliminary fashion we build on perspectives and projects from other fields, and aim to situate them in relation to challenges and opportunities for transition thinking and practice. Some have been noted in transition design literature before, while others have not, but all are established concepts rather than new coinages. Our purpose is to identify and borrow from existing practice some potentially useful heuristics, moves, philosophical prods, or *lenses* that seem to offer promise to those keen to engage in design with transitional agendas in view. Assembled here, then, are seven ways of seeing, for tackling the 'visionary' aspect of designing for transitions. The seven are: *Lenses* themselves;

Imaginaries; *Backcasting*; *Dark matter*; *Circularity*; *Experiential futures*; and *New metaphors*. What follows describes each lens and explains its relevance to the emerging practice as we currently see it.

A note on this paper's structure: we have experimented somewhat with a more modular structure, including a short Discussion section, *Why have we included this?*, after each concept. Our intention is that this potentially makes it easier for ourselves and others to add to the vocabulary, by keeping discussion close to the concepts themselves.

2 Methodology: Lenses

Our methodology in choosing the elements for this vocabulary is centred around the idea of lenses—we are claiming nothing more than collecting together a set of different tools for seeing, which in a poetic way we feel are complementary, as a proposition and starting point for others to build on. There are many other concepts we could have chosen, but this is the set that we did choose.

This first set of lenses overall draws inspiration from a number of works that have sought to expand the vocabulary of concepts or repertoire of gambits readily available in one domain or another. The architect Alexander and colleagues' classic *A Pattern Language* (1977) is one such; designer Hill's more recent *Dark Matter and Trojan Horses* (2012) is another. Musician Eno and artist Schmidt's *Oblique Strategies* cards (1975) hover generatively in the background; likewise the *Group Works* card deck created by the Group Pattern Language Project (2011), a deck collecting concepts and moves for facilitation; and theatre director Boal's *Games for Actors and Non-actors* (2002). Games maker Schell's *The Art of Game Design: A Book of Lenses* (2008), another member of this extended family, is a helpful reference even if we are not necessarily using his focal term in quite the same way. Lockton, Harrison, and Stanton (2013; 2010) discuss a variety of pattern-like formats for design tools, arriving at 'lenses' as a metaphor for different worldviews of human behaviour. Our own use of 'lens' here is probably a bit closer to the spirit of philosopher Dennett's inventory of "handy prosthetic imagination-extenders and focus-holders", in *Intuition Pumps and Other Tools for Thinking* (2013, p. 2). And one final model to mention, psychologist De Bono's *Wordpower* (1977, p.4) collects a range of terms with the popular expansion of systems literacy in mind:

> *[A]n understanding of dynamic and interactive systems means a whole new way of looking at processes rather than just at things. For this purpose we are only now beginning to build an adequate vocabulary. When we have built this vocabulary and assimilated the related concepts our understanding of the world around will be much improved. This I see as the next quantum step in our cultural development.*

We do not pretend that these fragments contain anything as impressive as their sources of inspiration, or that the small starter set gathered here is necessarily part of an impending 'quantum step in cultural development'. However, we are interested in contributing to the reservoir of available approaches to the worthy, ambitious forms of emerging practice outlined in transition design literature to date (Kossoff, Irwin, & Willis, 2015). The promise of usefulness for guiding an aspiring transition designer's attention and action in the area of vision has served as the main basis for selecting these lenses.

And the first lens to highlight is that of lenses themselves. The various works cited above all seem to manifest a similar impulse—a kind of modular, tactical, pragmatic, creative, open-minded collector's approach to gathering and indexing elements of intellectual, operational and artistic usefulness. Many fields of course have their own master term for such collections: the 'playbook' in certain sports; cookbook; songbook; encyclopedia. The term 'score' as an organising category is perhaps best known in connection with music, but in the hands of landscape architect Halprin (1970) extends to many other activities. Unsurprisingly perhaps, the area of language offers many organising frames (and there's another metaphor) at different levels, including 'language' itself, library, vocabulary, dictionary, grammar, and alphabet. One of the most fruitfully catalytic organising concepts for modular collections of knowledge parlays the component 'pattern' (fashion) into a designerly

aggregate, ‘pattern language’, first elaborated in architecture (Alexander et al., 1977), and since widely taken up in software development (Gamma et al., 1994) and interaction design (Tidwell, 2005; Fincher, 2012).

All of the above are alternative metaphors carrying different entailments (see **New metaphors**) and, admittedly, considerable potential for self-referential confusion. We have chosen ‘lenses’ as a deliberate extension of the ‘vision’ metaphor and a central challenge contained in designing for transition: imagining and catalysing a (presumably) radically different systemic state. New ways of doing and seeing go hand in hand; the latter are perhaps marginally easier to write about, but we try to blur that boundary wherever possible.

2.1 Discussion: Why have we included this?

Designing for transitions is ambitious. It is inherently multiscalar and inter- if not fully transdisciplinary. Its would-be practitioners need ways of sharing what they are doing, what seems to work, and at this stage the appropriate thinking and learning tools are bound to be modular and piecemeal rather than all-encompassing. We suggest that this notion of patterns or lenses — the modular collection and deployment of approaches to examining, thinking about, and acting in various situations — itself harbours potential as part of the development of transition design practice.

*Related: heuristic, **new metaphors**, pattern language, playbook, score*

3 Imaginaries

Mindset has been named a core component of transition design (Irwin et al., 2015b), primarily expressed through the idea that “openness, mindfulness, and self-reflection” are crucial when designing with transition in view. In addition to these attitudinal aspects, another level at which mindset considerations and ways of thinking can be explored, particularly in the context of visioning, is found in the notion of *imaginaries*. Here we argue that, as a lens, tuning into and investigating the ‘imaginary’, with regard both to current situations and to possible futures, promises invaluable insights for visioning.

What are imaginaries? The very broad sense in which we use the term here includes: societal-level conceptions (Appadurai, 1990) or (at least partly-) shared visions of issues such as climate change, health, immigration, identity, law, or even countries themselves (Anderson, 1983); myths and beliefs which can motivate collaboration (Harari, 2014); or sociotechnical narratives about how certain types of technological development could affect the way we live (Jasanoff & Kim, 2015); along with more individual or small-group scale notions perhaps more familiar to interaction designers, such as mental models (e.g. Revell & Stanton, 2017; Jones et al., 2011), mental imagery, associations, metaphors (see **New metaphors**), and so on. There is an argument that imaginaries of futures can affect people’s actions in the present (Lanzeni, 2016; Jasanoff & Kim, 2015), and the related concept of a culture’s ‘images of the future’, developed by sociologist Polak in the 1950s, proposes precisely this (1973 [1955], p. 19):

> *Any student of the rise and fall of cultures cannot fail to be impressed by the role played in this historical succession of the future. The rise and fall of images of the future precedes or accompanies the rise and fall of cultures. As long as a society’s image is positive and flourishing, the flower of culture is in full bloom. Once the image begins to decay and lose its vitality, however, the culture does not long survive.*

This may be said to represent a kind of self-fulfillingness (see **Circularity**), but imaginaries do not emerge independently: those that we have are constructed, over the courses of our lives, through both our social and experiential contexts. They are not permanent, but they are often persistent.

Design—and arts more broadly—can be seen as a form of language encompassing the fictional or imaginary, making it real enough to be addressable, to be considered and critiqued and reflected on.

Dilnot (2015) suggests that design simultaneously *states* "This!" and *asks* "This?" It has the power to render visible and tangible imagined situations, whether better or worse than the ones we are in; to design artefacts as 'tokens of better ages'; to apply ideas of utopia as a method (Levitas, 2013); and to inspire and open up vistas—if not always actual maps—towards different futures, through speculation and design fiction. What do designers do, if not, in some sense, give us experiential pockets of imaginaries—our own, reflected back at us, as well as visions of alternatives, fictional for the time being, but towards which we might be in transition? (see **Experiential futures**)

As a process, investigating imaginaries starts by engaging with, and seeking to understand, people's existing collective or individual conceptions of their situation; how the systems around them work, from their perspective; and what mindsets accompany those conceptions (Figure 1; Figure 2). Then, through externalising those imaginaries, or making them tangible or engageable-with (e.g. Bowden, Lockton, Gheerawo & Brass, 2015; Aguirre Ulloa & Paulsen, 2017), a community has the opportunity to reflect on and learn about its own thinking. Turning from this general process to consider futures imaginaries more specifically; surfacing a community's expectations, aspirations and beliefs about its own prospects can inform the development of deeper and more robust visions — while being firmly planted in and cognisant of the contexts and cultures where those imaginaries are found. A simple way to do this is found in "The Polak Game", a brief and lively classroom activity based on the work noted above regarding the sociology and history of images of the future (Hayward & Candy, 2017). There are various typologies available for describing and mapping future imaginaries found among a population, including Ethnographic Futures Research (EFR) (Textor, 1995), Generic Images of the Future (Dator, 2009; Candy et al, 2006), and the Systems Mythology Toolkit (Hendricks, 2014). A framework for customising particular deployments following the whole process suggested above (map, multiply, mediate, mount, and map again) can be found in Ethnographic Experiential Futures (EXF), "a design-driven, hybrid approach to foresight aimed at increasing the accessibility, variety and depth of available images of the future" (Candy & Kornet, 2017).

3.1 Discussion: Why have we included this?

Using the lens of imaginaries helps to sensitise both ourselves and others to the functioning and dynamics of what and how we imagine the systems we are in, as they are and as the might be. In this area, transition designers can serve a valuable role as translators or mediators between minds and ideas, and the world, between current situations and possible new ways of living.

*Related: ethnography, **experiential futures**, images of the future, phenomenography, mapping, mental models.*

4 Backcasting

Suppose you're trying to figure out how change could unfold—for yourself as a designer, or for a community.

One way to try to do this is to examine the evidence, past and present, and seek to discern in the tea leaves some pattern or portent of what is likely to occur next. There is a family of approaches for "forecasting", and quantities of effort and ink are expended in pursuit of this form of inquiry (Tetlock & Gardner, 2016; Silver, 2015). Efforts to extrapolate from what is known today into times to come, to cantilever conclusions from the seemingly sure footing of the present into the future's murky zone, often fail (Funk, 2017; Taleb, 2007), and many professional and academic futurists warn of the folly of a predictive stance when it comes to human affairs (Dator, 1996).

But one might also approach the question in precisely the opposite direction. This other tack, another way of seeing, is about the creation of scenarios *backwards* from a posited point in the future. What if we stipulate, for the sake of argument, that the future we are interested in looks and operates *like so*, some number of years or decades from now. *What would it take in order for that to happen*? What would need to occur?

Figure 1. Teenagers at the Derby Silk Mill, Derby, UK, pinning up their drawings of "What does energy look like?", an investigation of energy imaginaries by Flora Bowden and Dan Lockton as part of the Helen Hamlyn Centre for Design and SustainRCA's SusLabNWE project. Photo by Dan Lockton.

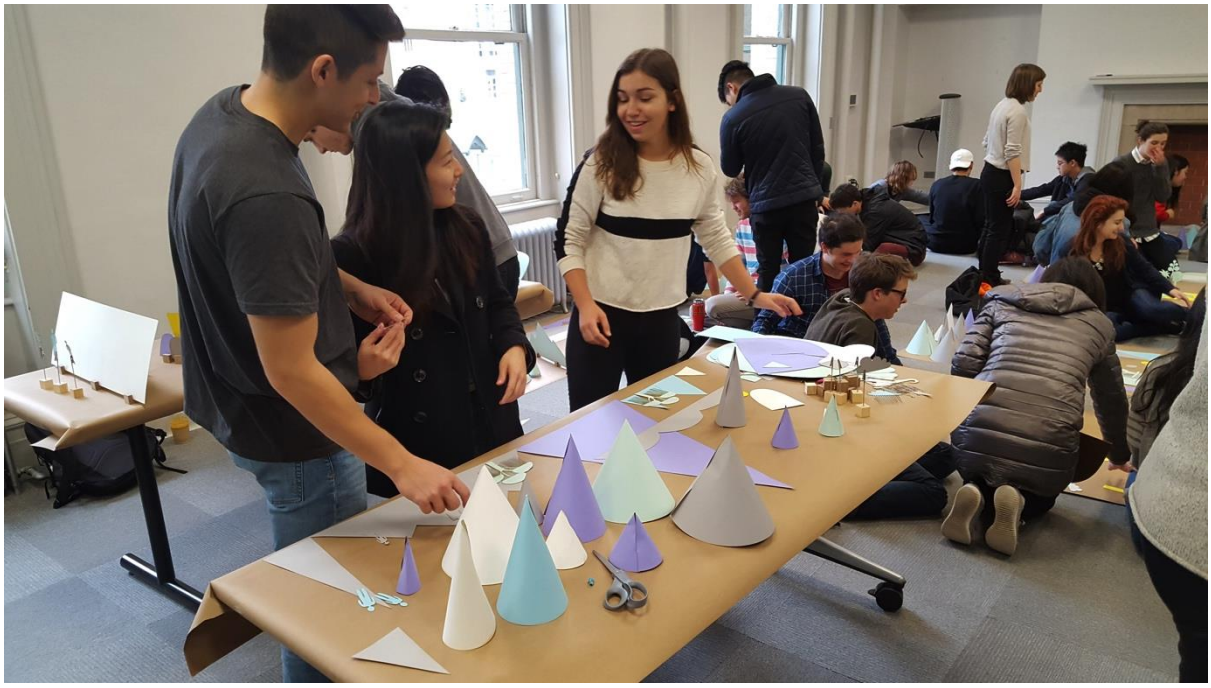

Figure 2. Students at Carnegie Mellon School of Design construct 'mental landscapes' representing group imaginaries of projects, part of an investigation by Delanie Ricketts and Dan Lockton of the Imaginaries Lab. Photo by Dan Lockton.

A prediction-minded onlooker may wonder what in the world could possibly be the basis for such speculation, and if accurate extrapolation is the name of the game, what we are suggesting here

may seem a very odd thing to do: backwards, indeed. But understanding “the future” calls for inquiry ranging beyond whatever happens to seem most likely at any given moment. While an important frame, the probable shows us only part of the bigger picture. As the second author points out in introductory futures classes, “Any single image of the future, no matter how compelling, is incomplete.” For one thing, the probable is a constantly changing vista: Look at the moment-to-moment meanderings of any share price for a demonstration. Think how the punditry morphs on the day after a surprising election outcome. In the futures field there is a classic trio of possible, probable and preferable futures (Toffler, 1970; Amara, 1981), which helps serve as a reminder that the question of what appears most likely to transpire, if taken too narrowly, leaves underexamined equally vital questions of what else might occur instead (the possible) and what we might want or not want (the preferable).

The word ‘backcasting’ was coined and the approach originally proposed for a normative use of scenarios in the energy industry: “backcasts are not intended to indicate what the future will likely be, but to indicate the relative implications of different policy goals.” (Robinson, 1982, p. 337). Its use has broadened in the years since, including development of participatory approaches incorporating perspectives from diverse stakeholders, although still typically with a normative bent: “The essence of the backcasting approach to future studies is the articulation of desired futures, and the analysis of how they might be achieved” (Robinson, Burch, Talwar, O’Shea, & Walsh, 2011, p. 756).

Here we are using the term slightly more broadly still, not to refer exclusively to the development of normative scenarios, but as a lens or angle of approach, a structure of thought, which could be used to try to reason backward in exploratory fashion from any posited future outcome. This is the heart of a scenario generation process originated by Dator (2009, p. 16), elaborating ‘generic images of the future’, where the narrative pathways examined are not just preferred futures, but the most divergent set of trajectories possible; growth, collapse, discipline, and transformation (Dator, 1979; Dator, 2009; German, 2017).

The backcasting lens invites us to ask: in order for this to occur, what would need to happen? One can use it to inquire into the boundaries of the possible, and to deduce the approximate shape of what would be necessary to realise a particular pathway, positive or not. It may reveal new possibilities — or impossibilities.

Take for example entrepreneur and inventor Saul Griffith’s examination of global renewable energy. Calculating humanity’s annual energy spend for the early 2030s at a modest total of 15 terawatts, he describes the challenge of renewably meeting this target: “It’s not the Manhattan Project, it’s not the Apollo Project — they were science projects. The project we have to do is much more like World War II, except this time [all countries] play on the same side. That’s [the scale of] what you need industrially” (Griffith, 2008).

A particular method that may help operationalise this lens (again, for any scenario) has been developed over the past decade; a heuristic for looking at transitions through “Three Horizons” (Hodgson and Sharpe 2007; Curry and Hodgson 2008; Wahl 2016). In essence this method divides the transitional process, whatever it may be, into three phases: now (horizon one), then (horizon three), and the interim phase between (horizon two). It provides a way of attending to and creating a narrative out of whatever is really at stake in transitioning from one state of affairs to another (Figure 3).

Effective use of the backcasting lens would help not only with avoiding the vicissitudes of extrapolative thinking, but also the temptation of dominating discussion with a single preferred future. Just as it is insufficient to examine change with an eye only to the probable, in designing for transition with normative ideals in view, the risk perhaps lies in excessive focus on defining a single positive future; navigating, as it were, with only one point of reference. Here too: Any single image of the future, no matter how compelling, is incomplete. The attempt to try to deduce one’s way

backward from there to actions today, a simplistic 'deficit model' for planning, embeds a dangerously brittle and linear conception of what bringing desired change into being entails. What is called for instead is a thinking environment or mental ecology (see **Experiential futures**), one rich enough with reference points that you know what you're looking to avoid, as well as what to pursue, and so that you are poised to meet whatever comes along. To venture an analogy to the importance of biodiversity in an ecosystem, or disciplinary range and neurodiversity in a team investigating a complex topic; resilience comes from requisite variety (Conant & Ashby, 1970; Dubberly & Pangaro, 2007).

4.1 Discussion: Why have we included this?

Backcasting may not be the only way to stretch and test our mental models of what tomorrow may bring, but it might be one of the most useful. This lens, applied not solely to 'planning' but to ensuring a diverse range of images of the future, we surmise, may well be a critical part of a healthy and transition-capable society (see **Imaginaries**). It seems a good candidate for key resources one might identify as necessary for navigating the wildly multivariate, hyperdimensional process of moving through history. Not a single, official, doctrinaire commitment, monomaniacally pursued (numerous instances of which, particularly from 20th century history, we leave the reader to imagine for herself). A constellation of alternatives to think with; not the ideal or preferred alone, but imaginal diversity.

Related: alternative futures, deductive forecasting, ***experiential futures***, ***imaginaries****, scenario generation, visioning*

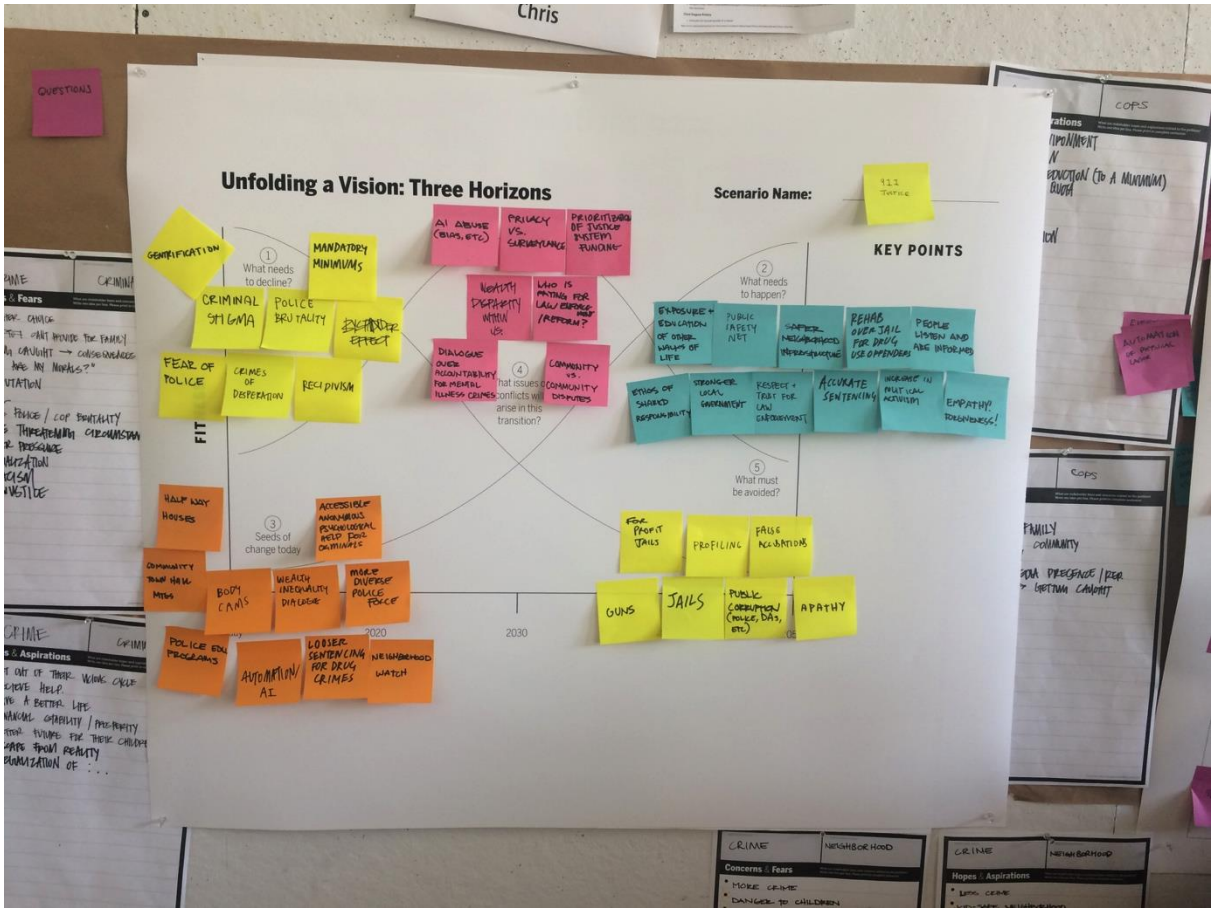

Figure 3. A transitional scenario in progress, constructed by Carnegie Mellon School of Design undergraduates working backward from their own ideal visions for 2050, as part of a class taught by Stuart Candy, Terry Irwin and Stacie Rohrbach. Photo by Stuart Candy.

5 Dark Matter

The systems approach embraced by transition design (e.g. Kossoff, 2015; White, 2015) recognises explicitly that there is more involved in change at scale and over time than simply the decision to redesign a product or service in isolation. Designed artefacts, services, and even software, are embedded in contexts, bound up in the practices and cultures of everyday life, and the organisational priorities, traditions, and structural legacies which end up determining what actually gets designed, by whom, and who has agency to change it. Laws, standards, conventions, histories, prejudices, algorithmic biases, path dependency, the actions of actors elsewhere, and a whole range of other factors (see **Imaginaries**) are all part of the systems within which designers seek to act.

A transition designer should thus be able to be more effective through paying attention to these (evolving) contexts as much as to the 'thing' itself, to design with insight into the ways in which the (often largely invisible) aspects of systems will work to support or constrain change. As transition design education develops, we might find it necessary to incorporate modules for learning about these systems, through classes about as well as practical engagement with public policy, management, community organising, and a range of other topics not usually included in a 'design' education. This could be framed as a call for more attentiveness to *infrastructures* within design. Infrastructure "never stands apart from the people who design, maintain and use it. Its designers try to make it as invisible as possible, while leaving pointers to make it visible when it needs to be repaired or remapped. It is tricky to study for this reason" (Star & Bowker, 2002, p, 230). Urbanist Keller Easterling, describing her concept of 'infrastructure space', notes that "[s]ome of the most radical changes to the globalizing world are being written, not in the language of law and diplomacy, but in these spatial, infrastructural technologies" (Easterling, 2014, p.15).

Star (a sociologist) and Bowker (an informatician) note that infrastructures often only become visible on breakdown, only apparent when they fail or stop working, or perhaps impede planned changes to a system. This relates to what Hill (2012, pp. 83–85) has called "the dark matter of strategic designers… organisational culture, policy environments, market mechanisms, legislation, finance models and other incentives, governance structures, tradition and habits, local culture and national identity, the habitats, situations and events that decisions are produced within". Hill uses the term specifically to refer to "what makes it difficult for installations to scale", the (metaphorical) "material that absorbs or rejects wider change" beyond a one-off prototype or demonstration. He argues that "[a] genuine and concerted engagement with dark matter is what would enable an intervention to become systemic, permanent, influential… the strategic designer has to understand the characteristics of dark matter just as designers might understand wood, steel, glass, pixels and grids." There is an extension to this argument which suggests that the ways in which different actors or stakeholders may perceive the dark matter (Figure 3), or not, is also worth paying attention to: what is invisible to one person may be very visible to others. For example, Mata-Marin and Lockton (2017) examine how migrants in the US experience 'borders' in everyday life, through designed artefacts such as credit cards and drivers' licences—regulating access and exerting control by embodying politics of difference—but which may be completely seamless to other people in the system. Perhaps part of a designer's role is to make this dark matter not just visible, but *legible* to those who are affected by it, but for whom it may be unreadable. Jain, Jankauskas and Ardern (2016), Lockton (2016a), Galik (2016), Bosch (2016), Gómez-Mont (2016) and others have examined how approaching policymaking in Mexico City and London with the aim of legibility could lead to new approaches for engaging the public in understanding and being involved with future directions for their cities, including aspects of the use of sensor technologies and other 'smart city' approaches.

There are also parallels with concepts such as Conway's Law (Conway, 1968; Brooks, 1975)—an organisation designing a system will create a system which replicates the communication structure of the organisation that designed it. Does transition design necessarily involve attention to (re-)designing the organisations involved in a project, to improving or reforming communication

structures within a community, or between the community and other interested stakeholders such as local councils, utilities, transport authorities, and so on? Star and Bowker (2002, p. 233) suggest that "[f]requently a technical innovation must be accompanied by an organisational innovation in order to work: the design of sociotechnical systems engages both the technologist and the organisation theorist."

For Le Dantec and DiSalvo (2013, p. 247), the role of the designer engaged with infrastructure should be "the work of creating socio-technical resources that intentionally enable adoption and appropriation beyond the initial scope of the design, a process that might include participants not present during the initial design". This approach which would see dark matter, perhaps, as something transition designers could actively consider using and manipulating, to turn it into a platform for communities to adapt and adopt themselves.

5.1 Discussion: Why have we included this?

Dark matter can be a useful lens for reminding us to pay attention to the elements of the system which designers might not traditionally have considered relevant, and for developing a more comprehensive account of how change happens.

Related: infrastructuring, sociotechnical systems, complexity

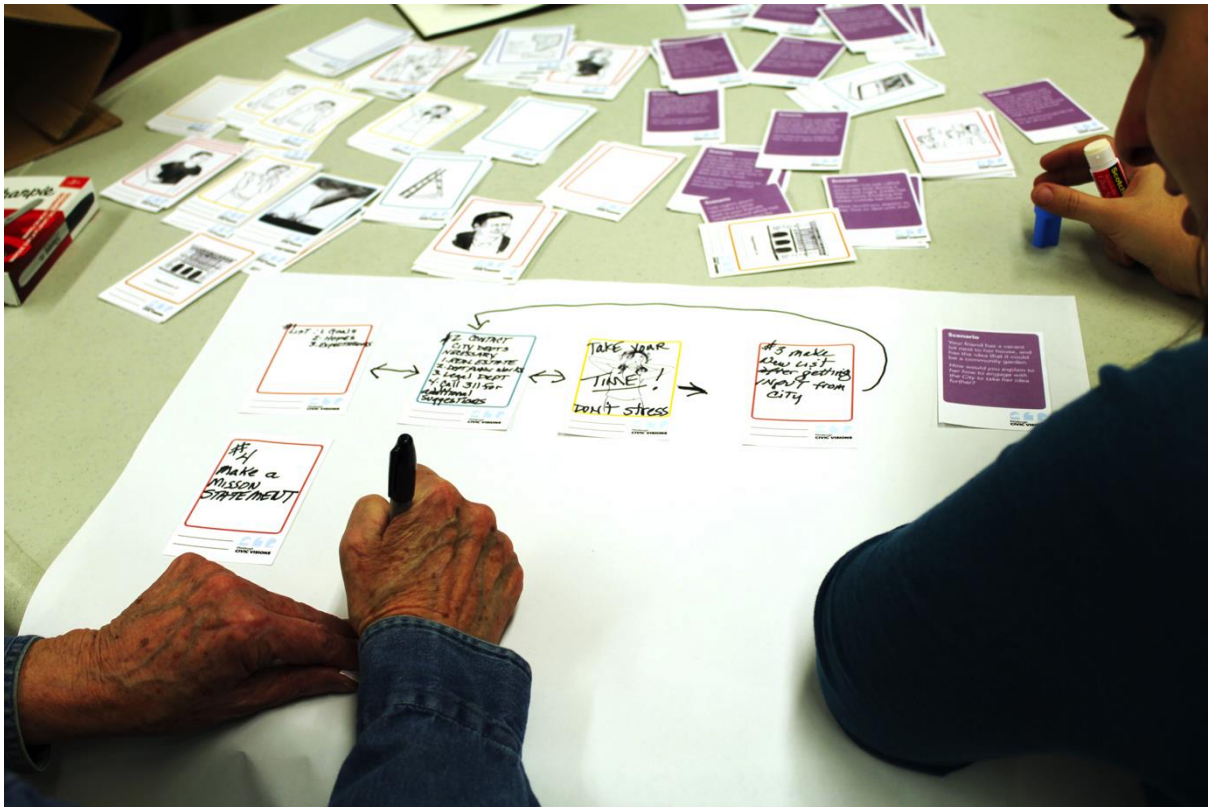

Figure 4. Members of the public in Pittsburgh, PA, create maps of their perceptions of the 'dark matter' of local government, as part of the Imaginaries Lab's Civic Visions project (Ashlesha Dhotey, Theora Kvitka, Nehal Vora, Matt Prindible, Silvia Mata-Marin and Dan Lockton). Photo by Ashlesha Dhotey.

6 Circularity

The idea of the *self-fulfilling prophecy* (Merton, 1948; 1995) is well-known enough to pass without much comment. But it is worth explicitly considering it in relation to visioning and transition design. Most obviously, there is the point that compelling visions of "desirable" futures are partly, presumably, intended to inspire people to work towards making those visions reality—to fulfil the prophecy. More nuanced treatments of futures (see **Experiential futures**) tease out some of the issues wrapped up in this idea.

Equally, though, prophecy can bleed into our imaginaries of the present—the ways in which we define our current situation, and how potential futures link to it, can end up structuring and determining the ways we act now. The sociologists Thomas and Thomas (1928, pp. 571–2) suggested that "If men define situations as real, they are real in their consequences", and thinking along these lines, we see that there can be a self-fulfilling nature to imaginaries. If we believe something to be real, and act as if it is real, and design and build institutions and infrastructures around that 'reality', the effect may be the same as if it had been real in the first place. What were once fictions become fact.

For example, the journalist Metcalf (2017) discusses the self-fulfillingness of imagining society as a market, drawing on Hayekian ideas: "The more closely the world can be made to resemble an ideal market governed only by perfect competition, the more law-like and 'scientific' human behaviour, in the aggregate, becomes." In a design context, the idea of a kind of circular causality in which designers' models of users (Lockton, Harrison & Stanton, 2012) or the assumptions or models imposed by clients, funders or other commissioners of work end up being designed into systems which then effectively make those imaginaries real, is not uncommon. Conversely, as pioneering scenario thinker Herman Kahn observed, "prophecies can be self-defeating as well as self-fulfilling" (Kahn, 1962, p. 18).

Design affects what people do, and what people perceive they *can* do. Everything around us that has been, or is being, designed, from the layout of our cities to the infrastructure of our governments to the way our doctor's surgery receptionist answers the phone, in some way influences how we engage with and make use of it, how we make decisions, what is easy and what isn't. It also, over time, affects how we think, and how we understand the world that we're part of, both individually and together as a society. And it affects our belief in our own agency, our own ability to change things (Lockton & Ranner, 2017). Designed artefacts, services, software or other elements of systems which embed particular notions of human nature (Lockton, 2016b) can, over time, lead to people acting in ways which come to *match* the models that the designers have of us or want us to become. As both Lanier (1995) and Dunne (2006) have expressed in different ways, if things that people use are designed with a caricatured model of a human, they may end up making that caricature real: we may end up behaving in the way the models assumed anyway, because we are configured by the systems and structures in which we live our lives—a curious form of self-fulfilling prophecy. Or put another way, perhaps, irony.

So in designing for transitions, within systemic contexts, it is worth reflecting on the *circularity* of the endeavours we are engaged in: to what extent are the variables that we believe they are shaping actually in turn shaping us, and the actions we take? Architect and cybernetician Glanville (1995) used the example of a thermostat 'controlling' the room temperature, but itself being controlled by the room temperature. Even this simple causal shift—considering a system from the perspective of the entity we normally assume to be in control—can provide new insights into the agency we have as designers. For example, how are transitions shaping designers, just as designers shape transitions? How does our work contribute to or co-create the issues we are seeking to address? Does concern or panic about futures lead to concern and panic being normalised or designed into the system? How can we use this approach in a more positive way? By analogy to the idea that the legal system and lawyers co-create the need for each other, how do we avoid this happening with transition design?

6.1 Discussion: Why have we included this?

Much design which aims to have an effect on social or environmental issues becomes itself constrained by or locked into assumptions about those issues, becoming part of the system it seeks to affect; or the changes it makes end up reproducing the structures of the problems that led to the need for intervention in the first place. There is value in transition designers being attuned to irony, aware of this self-fulfilling risk, and examining closely the assumed causal links embedded within projects and approaches.

Related: ***circularity***, ***imaginaries***, *irony, reflexivity, second-order cybernetics*

7 Experiential futures

To design is to grapple with the future. To design for civilisation-scale transition, even more so. The trouble with 'the future' is that it doesn't exist. It's a construct, a stew of more or less examined assumptions and interpretations carried over from the past, blended with extrapolations of trends and emerging issues in the present, inflected through hope and fear to produce fantasies and imaginaries projected into various quarters of the possible, probable, preferable, and their opposites.

It turns out that the troubling nonexistence of the yet-to-be is also an opportunity. Pages unwritten await their authors. The futures in our minds may sometimes pretend to us that they simply reflect on and respond to the outside world, but they are a technology of discourse and agency, a special subset of imaginative storytelling. While seeming merely to be inspired by observed change, they are in fact covertly shaping it.

Experiential futures refers to a set of approaches to make alternative futures present. The juxtaposition of 'experience' and 'future' is a deliberate contradiction: the here and now, the impressions of senses and mind, 1:1 scale reality as we experience it moment to moment; all this set against an inherently abstract notion of the to-come, by definition absent, forever at a temporal remove. Experiential futures (XF) seeks to make productive use of that contradiction, and harness the energy of its friction, by collapsing the distance, rendering absent and abstract futures cognitively and culturally tractable.

An experiential scenario is a future brought to life. It's a tangible 'what if', more textural than textual, and a way of thinking out loud, materially or performatively, or both. Seeking to collapse temporal distance and offset our habitual discounting of future events (Ainslie, 2001), XF angles for 'what ifs' real enough to trick the body into taking them seriously. Its contours are generous, taking in "the gamut of approaches involving the design of situations and stuff from the future to catalyse insight and change" (Candy, 2015, p. 18). XF "involves designing and staging interventions that exploit the continuum of human experience, the full array of sensory and semiotic vectors, in order to enable a different and deeper engagement in thought and discussion about one or more futures, than has traditionally been possible through textual and statistical means of representing scenarios". (Candy, 2010, p. 3)

As a lens, it is an invitation: how might you take your idea — any idea — of a future and bring it concretely to life, now? This move may be motivated by a wide diversity of agendas from the exploratory to the evangelical, the entertaining to the educational (Candy, 2010, p. 114). Any reason to think or feel into any future is a reason to mediate it, make it experiential. The matter of interest is not the design of artefacts per se, but the design of circumstances for thought (which may manifest as or incorporate artefacts). Less contents than context; less stuff than situations; less the things themselves than the conversations, insights and actions they enable. In each case, the latter implies and includes the former as appropriate (Figure 6).

> *We must make our freedom by cutting holes in the fabric of this reality, by forging new realities which will, in turn, fashion us. Putting yourself in new situations constantly is the only way to ensure that you make your decisions unencumbered by the inertia of habit, custom, law, or prejudice--and it is up to you to create these situations. (Graeber, 2015, p. 96)*

Some experiential futures examples from among many (for more see Candy, 2010; Candy & Dunagan, 2017):

- A product that immerses its user in a simulation of natural environments, apparently promoting the health of stressed-out urban office workers in the early 2020s, launched and demonstrated in the midst of a large (real, present-day) interior architecture trade show (Alter, 2016; Figure 5).

- A technology for babysitting infants in a virtual pod, presented in a present-day art museum, but surrounded by the accoutrements of a commercial sale context (product specifications, price banners, brochures), as one might find them in an electronics store in the next decade (Furness, 2017).
- A special future edition of the New York Times, reporting from the following year and embodying a fulfillment of progressive/liberal fantasies, handed out to commuters in the streets of Manhattan (Lambert, 2009).

The view through this lens is the capacity to regard the effective engagement with futures as about the generation or construction of scaffolding to think and feel with. The entire sensory and semiotic context of the body is the relevant canvas – and not just for the individual, but also for groups. 'The Time Machine', a room where you can inhabit a pocket of (say) the year 2040 for (say) 20 minutes, is one example of a pattern for immersive scenario creation that becomes possible through this lens (Candy, 2013; 2014).

Consider the philosophical concept of the 'extended mind' (Clark & Chalmers, 1998; Dunagan, 2015): thought isn't contained exclusively inside our skulls, but it occurs in and with our environments. This view could be adopted as a frame for examining all sorts of ordinary, existing practices, but it can also be taken further. If a notebook or whiteboard is a convenient prosthesis for memory, an experiential scenario is a prosthesis for imagination. It is a provisional, localised, and made-to-order 'mental ecology' (Bateson, 1972). The manifestation an imagined future context (see **Imaginaries**) variously in forms tangible, material, interactive, playable and performative, provides a wealth of opportunities to think and feel with beyond producing the most eloquent report. Experiential futures uses the idioms of reality to mediate hypothetical as *hyper*thetical, something *more than* just a thesis; an almost-real place.

Media theorist McLuhan's concept of the anti-environment may be useful here. The anti-environment relates to the environment in a sort of dialectical figure/ground relationship whereby the former highlights the unnoticed or taken-for-granted properties of the latter (the fish out of water realises with a jolt, at last, what it has been swimming in). "It is useful to view all the arts and sciences as acting in the role of anti-environments that enable us to perceive the environment." (McLuhan, 1967, p. 42)

So: all possible futures (literally an unimaginably vast space of stories one might tell) multiplied by all possible situations and stuff from within each. This represents a dazzling astronomical superabundance of theoretical design possibility. It is both wildly transdisciplinary and transmedia in character. That does not mean that the result or the ideal is an all-encompassing, extravagant *gesamtkunstwerk*: it is simply a medium-agnostic design opportunity. Simplicity will often be best, but it is perhaps the "simplicity on the other side of complexity" (reputedly prized by Oliver Wendell Holmes). It's more a matter of producing circumstances than a report, a video, or a telling artifact: any one of those things may indeed turn out to be the best thing for the job, but noting and avoiding unjustifiably mediumist assumptions is key.

7.1 Discussion: Why have we included this?

All of the above brings into focus the critical need for thoughtful and critical attention: what futures to choose to manifest in this way, when we consider transitions? Prototyping or performing something random that is purportedly 'from the future' might seem worth it as a lark, the first time or two, but sooner or later the mere conceptual novelty of long-range prototyping for its own sake has to wear off (Candy, 2018, p. 243). What is left is perhaps a closer attention to *which futures*, in *whose interests*, with *what effects*. Deeper questions. More critical questions. Opportunities to do better.

Related: critical design, design fiction, experiential scenarios, guerrilla futures, ***imaginaries****, immersive storytelling, speculative design, transmedia, worldbuilding*

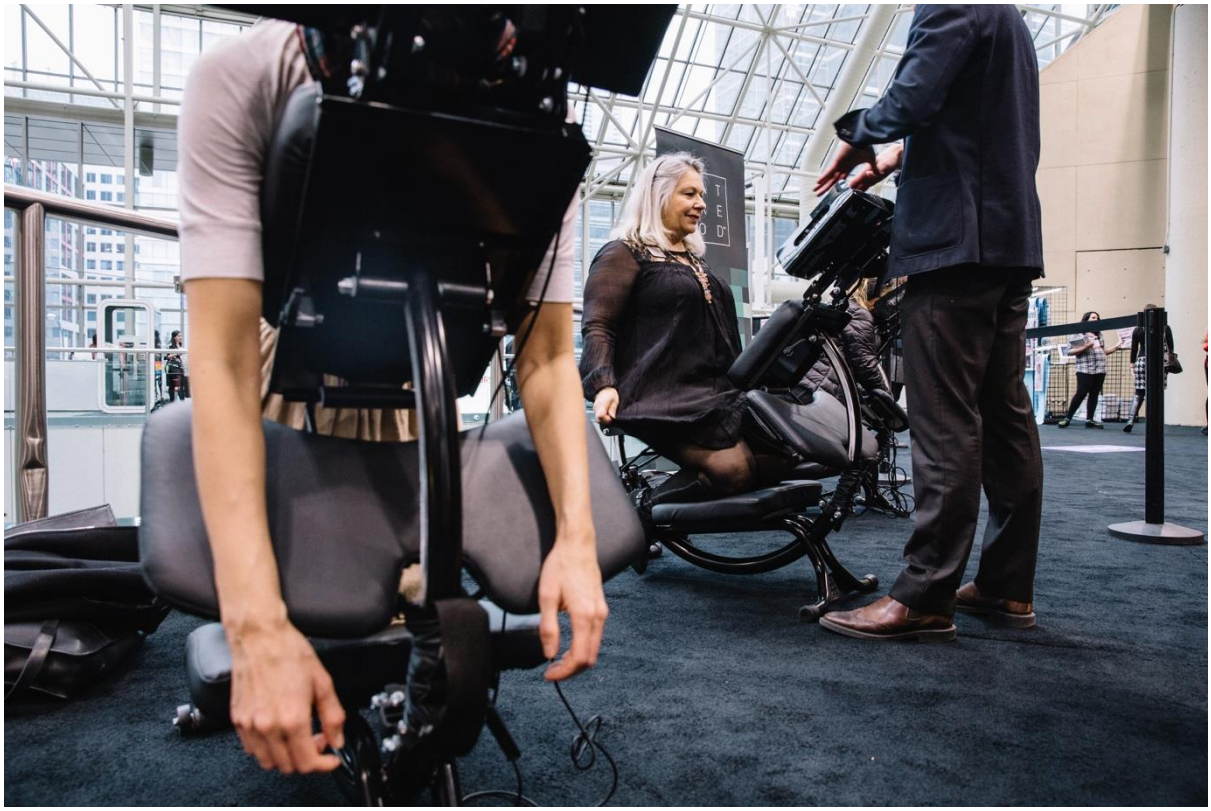

Figure 5. Visitors to a large interior design and architecture show interact with NaturePod, a hypothetical future product demonstrated and launched at the show as if it were commercially available. Installation by Situation Lab, photo by Connie Tsang.

8 New Metaphors

It has been argued that metaphors and analogies are central to much human reasoning, understanding, and creativity (Hofstadter, 2001), as well as the language we use (Lakoff & Johnson, 1980). Here we use the term 'metaphor' in a broad, intentionally imprecise way, to refer to a class containing a variety of ways in which one thing can be understood in terms of another.

One simple reason for metaphors' prevalence is that by mapping features of an existing or familiar situation onto a new or unknown one, we are enabled to grasp and (be more confident that we can) understand it more quickly. As such, metaphors are often used strategically in design (Saffer, 2005; Cila, 2013; Hekkert & Cila, 2015). Nevertheless, metaphors are not *the thing itself*—they are always an abstraction, a model of the situation rather than the situation modelled. They can be a map to a territory, but should not be mistaken for the territory. As with models, all metaphors are wrong, but some are useful (Box & Draper, 1987). The constraints, affordances, and assumptions that a metaphor suggests or imposes can themselves condition or structure our interaction with, or approach to, a new situation, as we understand, or come to understand it in terms of the old. Metaphors become "enabling constraints" (Hayles, 2001, p. 144). The hunt for "defensible metaphors", to use cybernetician Gordon Pask's term (Scott, 2017), is not trivial.

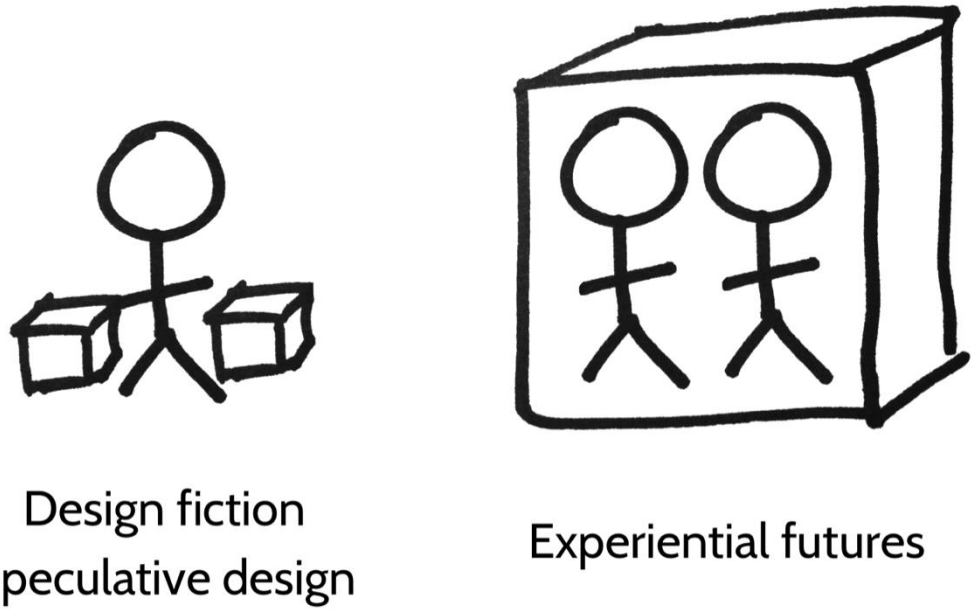

Figure 6. The lens of experiential futures invites attention to whatever it takes to create an effective context scaffolding thought and feeling about possible futures. Diagram by Stuart Candy (thanks to Greg Van Alstyne). Originally published in Candy & Dunagan (2017).

So, how does this apply to transition design? As a corollary lens of '**imaginaries**', we suggest not just attempting to understand the existing metaphors in use in a situation, but actively generating, proposing, and following through the implications of *new* metaphors (Cila, 2013; Schön, 1979; Jung et al., 2017) for concepts pertinent to the frame of transition taking place—and the potential futures embodied in visioning. This is not primarily about devising novel metaphors for the specific design of products or interfaces—although this work is interesting—but, at a system level, something closer to Klaus Krippendorff's (2006, p. 11) notion that designers could "create and start using new metaphors, new vocabularies, and new ways of languaging, like poets and science fiction writers do, thus bringing forth new ways of conceptualizing the world and encouraging new practices." Mary Catherine Bateson (1984), in her own work, and in discussing the work of her parents Margaret Mead and Gregory Bateson, has also frequently employed the idea of reframing societal issues through using new metaphors, for example "the idea of 'home' as a place to give and receive nurture" becoming "a new metaphor for the workplace" (Moyers, 1988). It is worth noting here that White (2015) considers aspects of transition design itself to be based around the application of metaphors from ecosystems to social systems.

One significant area where new metaphors might offer opportunities for transition is the economy. A number of economists (e.g. Landau & Keefer, 2014) have noted the ways in which the metaphor of 'the national economy is a household budget', commonly employed by media and politicians alike, is not just an oversimplification but a structural error in terms of many key features of the systems under discussion, such as fixation on 'balancing the books'. This leads to specific decisions being made (austerity policies for example) that arguably cause harm or restrict the ability of the system to adapt to changes in circumstances. How would public political discourse on the economy be different if a different metaphor were used? (We can imagine ideas such as 'the economy is a garden' or 'the economy is a loaf of bread being baked.') Would it be better used to *explain*, or to *persuade*? Or both?

8.1 Discussion: Why have we included this?

The art of designing new metaphors and framings is well advanced in political contexts (Lakoff, 2014) and increasingly in corporate settings (Erard, 2015), but has been underexplored in design and

futures, and offers potential for transition designers to enable communities to think about, envision, and understand their current situation and possible futures, both locally and at global scale, in new ways. The new metaphors can be generated in a number of ways, from matching 'structural features' of situations, to a semi-random process of bisociation (Koestler, 1964; Lockton et al, 2018—Figure 7). But a participatory process in which communities co-design the new metaphors, involving people in understanding their own and each other's understanding as the metaphors are constructed and explored seems preferable from a transition point of view to one where new metaphors are imposed by an authority seeking to persuade.

*Related: frames, **imaginaries**, lenses, worldbuilding*

Figure 7. Participants at an Imaginaries Lab New Metaphors workshop run by Dan Lockton and Sarah Foley at the Google SPAN conference, 2017, talk through their ideas for new metaphorical representations of concepts. Photo by Dan Lockton.

9 A Conclusion

One of our aims in entering the transition design research discourse is to find ways of working practically which embody and advance the ideas inherent in the transition design paradigm, while making use of the many techniques and methods developed in other fields (among them design research more widely, foresight and futures studies, design for social change, systemic and strategic design, and more) and iterated over the course of many projects and engagements. This modest collection of ideas is put forward partly as a provocation, partly as potential departure point for a more comprehensive endeavour, and partly as an invitation for others working within, or interested in, designing for transitions to contribute lenses they find useful for new ways of seeing. The authors welcome readers' suggestions.

At this time, the vocabulary is of course fragmentary. But this will change. Part of the transition at stake is our internal, collective, developmental shift from preliminary, tentative and miscellaneous beginnings, to an expanding reference universe of cases and terms, and a better-established sense of how to do what needs to be done. Lately, efforts inspired by the framing concept of the 'pattern language' have begun to outline the makings of a body of practice with similar large-scale transitional and transformational intent (Finidori et al., 2015; Baumgartner et al., 2016). The

questions we conclude with for the moment, then, concern how we might ultimately build a collection of transitional lenses into something more systematic. What would a pattern language for transition design look like? What other areas of design research have lenses to contribute?

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