Energy Research & Social Science 44 (2018) 222–231

Contents lists available at ScienceDirect

Energy Research & Social Science

journal homepage: www.elsevier.com/locate/erss

Original research article

2050—An Energetic Odyssey: Understanding 'Techniques of Futuring' in the transition towards renewable energy

Maarten A. Hajer*, Peter Pelzer

Utrecht University, Faculty of Geosciences, Urban Futures Studio, The Netherlands

ARTICLE INFO

Keywords:
Energy transition
Off shore wind
Politics as performance
Technique of Futuring

ABSTRACT

After the Paris agreement on climate change (2015) climate change politics is no longer about raising awareness but about shaping the sustainability transition itself. It requires us to rethink the role of scientific knowledge, shifting from a tradition of "expected futures" to an approach focusing on "desirable futures" and ways to get there. We argue the sustainability transitions scholarship tends to see constructions of the future (visions, scenarios, predictions etc.) as *explanans* (that what explains) while constructions of the future are rarely seen as *explanandum* (that what should be explained). The article introduces the concept of 'Techniques of Futuring' defined as *practices bringing together actors around one or more imagined futures and through which actors come to share particular orientations for action,* to get a grip on the actual acts of 'futuring'. The empirical focus is on '2050—An Energetic Odyssey', a process centred around an elaborate multimedia installation, introducing large scale exploitation of the North Sea for harvesting off shore wind energy taking place in 2015 and 2016. We examine the Odyssey as example of a Technique of Futuring. We conclude with a reflection what the Odyssey teaches us about effective Techniques of Futuring to further the sustainability transition.

1. A new phase for climate politics

The 21st UN Climate Change Conference of the Parties (COP21), held in Paris in December 2015, resulted in a broad political commitment to act to contain global warming to 2, preferably 1,5 °C. It heralds a new phase in climate politics. Politics is no longer about raising awareness but about shaping the sustainability transition itself. It requires us to also rethink the role of scientific knowledge. It will have to shift from a tradition of 'expected futures' to an approach focusing on 'desirable futures' and ways to get there. Here the climate/energy nexus, i.e. the transition from fossil fuels to renewable energy is particularly important. Geels et al. [1] (see [2]) argue that the fields of sustainability transitions and practice-based action research could complement the traditional modeling approach in the IPCC tradition (specifically Integrated Assessment Modelling–IAM). It would connect the qualitative, interpretative and action-oriented nature of the transitions approach to the quantitative modeling tradition of IAM. Recognizing the differences in philosophical and theoretical underpinnings, they avoid the reflex of developing an even more complex model to include ideas from other fields. The new academic perspective should also speak to a broader networks of 'agents of change' able to bring about the transformation to a post-fossil future world, including NGOs and leaders from business and industry (cf. [3]).

Such a novel perspective relies on two main premises. First, the next phase of climate politics requires a much more explicit role for 'strategic narratives' [4] of future worlds, in this case *desirable post-carbon futures* (cf. [5,6]). Conversely, if we want to connect to a broader, more varied group of actors, we will also need to rethink the language in use. Desirable worlds cannot persuasively be represented in the scientific and thus strongly cognitivist terms of 'CO2 levels', 'ppm', 'CCS' as happens in the typical IAM backcast. Second, we need to rethink how knowledge gets mobilized for politics in an effective manner. We suggest to analyse climate politics in terms of the actual *enactment of knowledge in politics*. The perspective on politics as performance, elaborated in Hajer [7] suggests an empirical focus on the particular practices in which knowledge is taken up and strategic narrative is brought to particular publics. We argue that these practices can and should be analysed in detail, looking at the climate/energy nexus in terms of *a set of staged performances*. Successful climate politics is then understood as a function of the quality of the sequence of these performances, both in breaking out of lock ins in 'fossil futures' and in creating new shared perspectives on a future based on renewables. The article reports on a case study in which the attempt was made to create a coalition around renewable energy as a desired future. We try to understand the process of bringing together this coalition, including the 'incumbent' fossil related business and industry, around a new imaginary.

* Corresponding author at: Heidelberglaan 8, Room 043, P.O. Box 80125, 3508TC Utrecht, The Netherlands. https://www.uu.nl/en/research/urban-futures-studio.
E-mail address: m.a.hajer@uu.nl (M.A. Hajer).

https://doi.org/10.1016/j.erss.2018.01.013
Received 20 July 2017; Received in revised form 21 January 2018; Accepted 22 January 2018

The paper first conceptualizes a desirable futures perspective (Section 2), discussing the literature on sustainability transitions (Section 2.1), on imaginaries and fictional expectations (2.2) and finally the work on politics as performance (2.3). This then culminates in the introduction of our concept of 'Techniques of Futuring' (from here: ToF) (2.4). In Section 3 we then report on '2050—An Energetic Odyssey' a concrete example of a ToF, centering around an elaborate multimedia installation. It visualized how North West Europe could reach the 2 degree target by 2050. It was commissioned by a broad coalition of actors, including the Dutch Ministry for Economic Affairs, the environmental NGOs *European Climate Foundation* and *Natuur & Milieu,* the Port Authorities of Rotterdam and Amsterdam, off shore industry and Shell Netherlands. In Section 4 we reflect on the Odyssey as a particular example of a Technique of Futuring.

2. Mobilizing the future for transformative change

2.1. Sustainability transitions

The idea that knowledge should be mobilized not to merely understand the world, but to actively help transform it, is a cornerstone of the scholarship on sustainability[1] transitions (see for instance [8–11]). The question *how* to understand or further a transition is central to this – varied – literature. This results, for instance, in an emphasis on understanding how to protect promising but still immature 'niches' for green technology [9] or an analysis of the protective behavior of 'incumbents' in the fossil fuel sector [12]. Moreover, with the so called 'spatial turn', geography has become an important explanation for understanding of transitions (e.g. [13,14]).

Next to the role of geography, several scholars have paid attention to the role of constructions of the future (e.g. [15,16]). Van Lente [17], among others, developed the notion of a 'sociology of expectations', which 'has studied how in scientific and technological developments actors continuously and explicitly refer to what is possible in the future' [17, p. 772]. While promising and containing critical ideas about the future, the subfield of sociology of expectations has only in a few cases been applied to the issue of sustainability transitions (e.g. [18]). 'Transition management' is a much more common perspective in the sustainability transitions debate. In this perspective 'visions' are seen as an important factor for success. Visions are defined as 'qualitative societal goals and ambitions that evolve through new insights, knowledge and experiences derived from short-term experiments' [19, p. 91]. In this vain, Smith et al. [20, p. 1506–emphasis added] differentiate five functions for visions in sustainability transitions:

1. Mapping *a 'possibility space'*: Visions identify a realm of plausible alternatives for conceiving of socio-technical functions and for the means of providing for them.
2. A *heuristic*: Visions act as problem-defining tools by pointing to the technical, institutional and behavioural problems that need to be resolved.
3. A stable *frame for target-setting and monitoring progress*: Visions stabilise technical and other innovative activity by serving as a common reference point for actors collaborating on its realisation.
4. A *metaphor for building actor-networks*: Visions specify relevant actors (including and excluding), acting as symbols that bind together communities of interest and of practice.
5. A *narrative for focusing capital and other resources:* Visions become an emblem that is employed in the marshalling of resources from outside an incipient regime's core membership.

[1] The notion of 'sustainability transitions' resembles the notion of 'energy transitions' (e.g. [45]), we here prefer the former over the latter because it refers to a more cohesive body of literature with regards to the transition mechanisms at play.

The above illustrates the multiple ways in which future constructions are mobilized in the transitions literature. Yet the sustainability transitions scholarship tends to see constructions of the future (visions, scenarios, predictions etc.) as *explanans* (that what explains) while constructions of the future are rarely seen as *explanandum* (that what should be explained). Still, understanding how visions actually come about and gain traction is crucial to further the sustainability transition.

2.2. Imaginaries & fictional expectations

The scholarship on 'imaginaries' is devoted to this issue of how visions gain traction.[2] Jasanoff and Kim [21] use the concept of 'sociotechnical imaginaries' (STIs), which they define as "collectively held, institutionally stabilized, and publicly performed visions of desirable futures" [22, p. 4].[3] According to Jasanoff and Kim [21], imaginaries are not solely a normative construction of the future, but a contested and politicized configuration at the same time (cf. [23]). STIs shape case-specific expectations and, when effectively re-enacted, give a degree of permanence to the socio-political network. In Jasanoff's approach sociotechnical imaginaries thus "occupy the theoretically undeveloped space between the idealistic collective imaginations identified by social and political theorists and the hybrid but politically neutered networks or assemblages with which STS scholars often describe reality." [22, p. 19]. Conversely, imaginaries have a double function; they are both an achievable *aim* and a *way* to achieve this aim.

It is closely related to the recent scholarship on 'fictional expectations' by the German sociologist Beckert [24,25]. Beckert works in economic sociology and aims to understand how economic actors deal with uncertainty. How can a capitalist investor decide whether a business proposition is viable when he/she cannot know what the future will hold? He argues that "it is the images of the future that shape present decisions." [24, 220–221]. These images of the future are necessarily 'fictional' because reports on the future logically cannot be factual. We must imagine a future state of affairs, and then decide whether to invest or not. Fictional expectations allow actors to organize and coordinate their action in the face of uncertainty. So "(…) the term 'fictional' should not be taken to mean that these expectations are false or mere fantasies, only that expectations of the unforeseeable future inhabit the mind not as foreknowledge, but as contingent imaginaries" [25, p. 9].

Beckert's understanding of fictional expectations [25,10–11] helps us define the possibility space to actively create shared desirable sustainable futures: (1) fictional expectations are a means to coordinate action and help actors operate in concert; (2) expectations affect the future because the help actors to coordinate their actions; (3) expectations can be the source of innovation, introducing radical departures from the present; (4) fictional expectations are deeply political as they either give permanence to the existing state of affairs or help further new lines of action which may have deep distributional consequences. We should appreciate Beckert argues his case in the sphere of economic theory dominated by a notion of 'rational' expectations [25, p. 217 ff]. With 'fictional' expectations he calls attention to the role of imagination in economic futuring. His analytical effort is to reconstruct which 'instruments of imagination' underpin particular futures.

[2] See Anderson [46] and Taylor [47] for conceptions of imaginaries in which the future is not a defining element.

[3] The concept of imaginaries has long roots in geography and urban studies [48,49]. It is now also important in the future thinking of science fiction and media studies [50,51]. Jessop [52] analyzed imaginaries from an institutional perspective, demonstrating how the institutionalization of dominant economic imaginaries can be understood as the resultant of an evolutionary process of variation, selection and retention. Jessop calls this 'cultural political economy' (CPE), aimed at showing the relevance of the imaginaries concept for analyzing the grand interpretative grids of society such as Fordism.