Energy Research & Social Science 13 (2016) 1–14

Contents lists available at ScienceDirect

Energy Research & Social Science

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

Original research article

One, no one, one hundred thousand energy transitions in Europe: The quest for a cultural approach

Mauro Sarrica [a,*], Sonia Brondi [a], Paolo Cottone [b], Bruno M. Mazzara [a]

[a] Department of Communication and Social Research—Sapienza, University of Rome, Italy
[b] Department of Philosophy, Sociology, Education and Applied Psychology, University of Padua, Italy

ARTICLE INFO

Article history:
Received 10 July 2015
Received in revised form 6 November 2015
Accepted 10 December 2015
Available online 6 January 2016

Keywords:
Europe
Situated perspective
Planes of transition

ABSTRACT

Far from being a univocal process, energy transitions involve several pathways and require research that connects multiple theoretical, disciplinary and methodological perspectives. The European scenario is a clear example of how the boundaries and the direction of such process are difficultly identifiable and merged with culturally situated meanings and practices. In this opening paper, drawing on a psychosocial background, we propose a cultural approach as an attempt to overcome the dichotomies between technical and human, social and individual accounts of energy transitions. In this framework, we illustrate the two main axes that guided this collection of research: a situated perspective, and a focus on different planes of transition (individual, community, societal). Then, we present the European scenario and introduce the contributions, which propose a large variety of epistemological perspectives, and theoretical, methodological and disciplinary integrations. We conclude with a commentary of the main challenges to be addressed in order to develop a shared scientific paradigm: the need for further integration towards shared interpretative frameworks, the quest for a constructive and future-oriented research attitude, the importance of connecting different planes of analysis to foresee alternative scenarios, and the need for proposals and solutions to be addressed to decision makers.

The idea of transition assumes a movement from one state to another, from a place of departure to one of arrival. In fact, the different approaches adopted in the emerging field of energy transition research [1,2] tend to identify a flow from a past situation to a foreseen or desirable future and to interpret the present situation in relation to its position in history [3].

For example, the metaphor of a single movement is implicit in the policies that traced an ideal shift from 'hard' to 'soft' systems of energy supply. These paths [4] describe two counterposed ideal types: a centralised strategy that is rigid and based on non-renewable resources and a decentralised strategy based on renewable resources that is able to meet the needs of end-users in a flexible manner. The European scenario is a vivid example of how difficult it is to identify the boundaries, the direction and the many facets of such movement. Whereas several starting points and past transitions have been identified based on technological, normative and economic innovations [5,6], it is difficult to determine the historical length of the path [7], which is dependent on the time scale chosen by the observers [1]. Even more difficult is identifying the nature of the current transition [8,9], that is, forecasting a common point of arrival [10].

In this sense, the idea that we Europeans are moving toward sustainability in a unified and coherent way could be misleading. Sustainability, in fact, is such a polysemic concept as to have become a haze. The three original pillars of sustainability (environment, economy and society) have been interpreted in many ways in the last decades, leading to 'strong' and 'weak' versions of the concept and paving the way for deep reconsideration of its dimensions [11]. Moreover, sustainability transition models derive from different ontologies and identify alternative causal agents, mechanisms and dynamics that can be integrated to a limited extent [12]. Finally, whereas official EU statistics show a general trend toward increasing use of renewables and the reduction of greenhouse gas (GHG) emissions, great variability can be observed among countries (see paragraph "The European scenario: the regulatory situation and technological transition"). Even greater variability can be seen within each country among different regions, communities and individual households.

This special issue by no means provides exhaustive coverage of all these trends and paths. Rather, our aim is to exemplify the multifaceted nature of energy transitions that involve the co-presence

* Corresponding author at: Department of Communication and Social Research, Sapienza—University of Rome, Via Salaria 113, 00198 Roma, Italy.
E-mail address: mauro.sarrica@uniroma1.it (M. Sarrica).

http://dx.doi.org/10.1016/j.erss.2015.12.019
2214-6296/

of multiple levels [13], time scales [1], drivers [8] and rationalities [14]. With this aim in mind, the issue includes a selection of studies that adopt diverse theoretical, disciplinary and methodological approaches.

The leitmotif is a human perspective on the relationship among normative, technological, psychological and social aspects of the transition, with the awareness that since the domestication of fire, energy revolutions and cultural shifts have stood in a relationship of mutual interdependency [7].

A number of relevant questions arise when looking at transitions from this perspective: What do we mean by social development? Who defines the goals of the transitions? How do communities and individuals negotiate these goals? What meanings and practices actually become part of our everyday life and why? On the one hand, answering these questions requires us to take a critical stance and to link the energy transition to issues of democracy and citizenship [15], of resistance and empowerment [7,16,17] and of equity, the future and values [18,19]. On the other hand, it requires us to examine whether and how—in interactions with technological and normative novelties [20]—societies, communities and individuals [21] are developing a new environmental consciousness and are profoundly transforming the cognitive, instrumental and symbolic features of energy [22].

In this opening paper, drawing on a psychosocial background, we will first propose a cultural approach in an attempt to overcome the dichotomies between technical and human and social and individual accounts of energy transitions. Using this framework, we will then clarify the two main aspects that are touched by the studies gathered in this special issue: a situated perspective and a focus on different planes [23] (societal, community and individual) of transition. Finally, we will sketch out the European scenario and introduce the papers and how they contribute to a broader understanding of energy transitions in Europe.

1. Approaches to energy transition: overcoming social and psychological dichotomies

As has been widely noted, the matter of energy transition is not only a technical problem, dealing with the challenge of producing more and more energy with better efficiency and reduced environmental impact. It is also a problem of how much energy is needed, for what purposes and how it is used. When the focus is shifted from the technical side of the problem to the human side, individual and social factors that affect human behavior and determine the forms and outcomes of innovation come to the fore.

In this reassessment of the human dimensions of the energy issue [24], attention has mainly been focused on two areas: (1) the shared technical and social processes that can facilitate or hinder the success of energy transition, such as changes in energy system infrastructures, governance and policy trends, political struggle, social influence, communication, participation at the community level, citizenship and global justice (cf. [25–27]) and (2) the individual interaction with technology and the psychological dynamics underlying people's judgments and behavior, including perceptions, attitudes, motivations, emotions, beliefs and values, that are intensively explored in fields like environmental psychology and consumer psychology (cf. [28–31]).

Space limitations require us to focus only on technical vs. social and shared vs. individual dichotomies, and our discussion of the main approaches that address these factors is simplified accordingly (Fig. 1, Table 1).

In particular, on the psychological side, the cognitive approach in combination with behavioral economics provides interesting suggestions [32,33]. The general framework of this line of research refers to what has been called the 'bounds of human rationality' [34,35]. Being unable to manage the overwhelming amount of information that would be necessary in order to elaborate the 'pure' rational choices and decision-making, the cognitive system actually operates mainly by means of intuitive reasoning, judgmental heuristics and automatic operations. This is much truer in the environmental field, where the negative side of the cost-benefit balance is so distant in space and time as to be beyond immediate awareness. Indeed, unconscious dynamics and deep motivations and emotions prove crucial in explaining the often ineffective reasoning and inconsistent behaviors in the environmental field (for a review, see Ref. [36]).

Despite the number of useful insights arising from this approach, it nonetheless suffers the shortcomings of being confined to the individual level, in terms of both understanding behavior and the attempts to change it. From this point of view, in fact, the main way of promoting significant pro-environmental behavior is to enhance awareness through effective communication and social influence (e.g. [37]). However, the same perspective may also lead to surrender to the techno-centric temptation to limit individual choice [38] and to direct individual choices by means of affecting non-conscious motivations [39] or to promote automatic behaviors.

Several attempts have been made to elaborate alternative conceptual frameworks within the social sciences and humanities. Transition studies mainly adopt systems change theories [1] to investigate the multifaceted nature of transition processes. Some examples, among many others, are the Innovation System (IS) theory [40,41], the Techno-Economic Paradigms (TEP) [42,43], the Socio-Technical Systems model [44,45] and, more recently, the socio-technical systems Multi-Level Perspective (MLP) [12,46]. Common to all these theories—although their specific focus is on diverse aspects—is the systemic lens through which they look at the different components involved in the transitions and at their interaction: technical innovations and changes in social practices, organisational life, markets, policy, institutions and civil society activities [47]. The innovations, practices and positioning of a single actor can be understood in these frameworks only by looking at the entire system. However, despite crossovers between MLP, interpretivist/constructivist and micro-focused perspectives (e.g. practice theory, social construction of technology and actor network theory) being present, the interaction between individual and shared levels still requires further development [12].

The Energy Culture (EC) framework is more focused on the close intertwining of the individual and the societal levels [48,49]. EC uses an inter-disciplinary approach and aims to understand the systemic interaction between norms, energy practices and material culture. The *norms* are intended as shared beliefs and include social aspirations, environmental values, expectancies (e.g. expected comfort level), rules, habits, respect for tradition and so on. The *material culture* refers to the availability of technologies and assets that play a role in how energy is used, for example, in building styles, housing structures, insulation, heating devices, furniture or, in the transport field, the diffusion of electric vehicles and of charging infrastructures and the quality of public transport. The *energy practices* refer to routinised or infrequent actions that involve the choice, purchase, and use of material objects, for example, temperature settings, hours of heating, number of rooms heated, maintenance of technologies and use of car-sharing facilities. This theoretical model has been widely used, mainly in the study of household energy use and of transport behavior, and with the aim to identify clusters of 'energy cultures' that are very useful in designing effective interventions. For example, in the Waitati Energy Project (WEP) [48], the model has been applied to understand and foster behavioral shifts in a New Zealand transition town, helping to develop 'energy literacy' in the community and to shift the implicit and explicit norms of the community toward more sustainable patterns of energy consumption.