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Clash of Visions

Analysing Practices of Politicizing the Future

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Abstract

Clashes between visions of the future politicize the future of urgent societal transformations. In the political economy, visions and their promises become resources and their implementation turns into capacities that serve to increase value. Our paper argues that visions as political-economic means influence the transformation processes responding to grand challenges, guide them in certain directions, promote or even hinder them. To shed light on this correlation, we adopt the vision assessment approach of technology assessment (TA), and substantiate and suggest modifications of its analytical perspective to make it suitable for analysing interactions between multiple visions as formative elements in societal transformations on the one hand and as political-economic resources and capacities on the other. Our hypothesis is that the relationship between visions, political economies and transformation can only be examined by looking at power constellations that change through clashes and interactions of multiple and competing visionary practices.

Keywords: Vision Assessment, Societal Transformation, Cultural Political Economy, Sociology, Science & Technology Studies, Technology Assessment, Power Constellations

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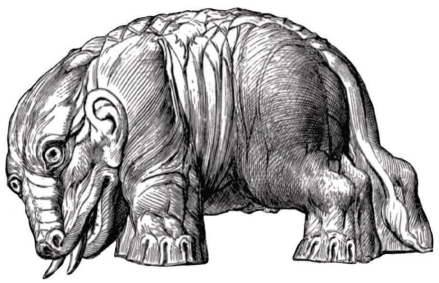

Visions as responses to transformational imperatives

Today's major societal transformation processes and their related political programs, such as digitalization, transformations of the energy system and the mobility sector, are guided by imaginaries of "sociotechnical futures" (e.g. Lösch et al. 2016). These imaginaries are not only anticipations of certain societal actors of what the future *could* look like. Stakeholders introduce and enforce their imaginaries by means of normative visions on what the future *should* look like. This happens in various societal spheres, such as research and innovation policy, research and development, mass media, and civil society. These visions correspond somehow to the political and economic expectations and wishes of these actors. The visions portray a variety of potential sociotechnical constellations in the future, and at the same time each vision highlights specific future constellations as the most promising or desirable. In past decades and present times, such normative visions have been used to address the so-called grand challenges facing today's societies. They are used to frame and legitimate actions to address these challenges, which point to increasingly relevant problems such as climate change, scarcity of resources, demographic change, social instability, and inequality, to name just a few. At the same time, by constructing a vision and embedding it in a context of needs and wants, societal challenges become transformational imperatives. In this context, the vision indicates the necessary course of action to appropriately tackle the challenge, immediately and effectively. The visionary actors promise to contribute with their visions to solving pressing problems (e.g. climate protection, resource conservation, social justice) and to guide future political and societal action accordingly (Lösch/Hausstein 2020). As these visions are usually introduced in the context of political negotiations or struggles over the most appropriate development paths, they contribute to a politicization of society's future. And because they play a decisive role in the race for promising future positions in the political and economic spheres, these visions become not only guiding imaginaries for action today but also resources and important assets for stabilizing developmental pathways.

Even though the future is generally unpredictable and therefore the fulfilment of the transformational imperatives is highly uncertain, these visions are essential means of orientation and guidance for future-oriented action. On the one hand, they constitute concrete practices by presenting directions for problem solving, through specific societal or technical innovations. In this first dimension, visions contribute to the production of new knowledge. At the same time, they guide and stimulate new practices that lead to changes in the existing social arrangements. Therefore, visions are constitutive elements in "socio-epistemic practices".**[1]** One the other hand, visions have normative effects. They highlight specific pathways as the best response to transformational imperatives. In this second dimension, the visions of a few actors devaluate alternative responses suggested by other actors. The visions serve as strategic tools in political negotiations and political controversies about the best aims and modes of societal transformation. Therefore, visions have the capacity to cause political clashes by building on epistemic difference, strategically excluding alternatives, and marginalizing other visions as undesirable and unfeasible. Visions are thus an important means of politicizing the future. The abilities and capacities to effectively generate, imple-

[1] "Socio-epistemic practices" are practices that simultaneously lead to changes in knowledge and social order. If we speak about "visions as socio-epistemic practices," we want to highlight that the presence of the visions is an important enabling condition for these changes (e.g. Ferrari/Lösch 2017). This perspective on visions is the guiding analytical focus of the vision assessment group at the Institute of Technology Assessment and Systems Analysis (ITAS), see, e.g.: https://www.itas.kit.edu/english/projects_loes14_luv.php.

ment, and distribute such visions are important assets in the current shaping of future "power constellations".**[2]**

Combining these two dimensions, we conceptualize visions as future-oriented responses to the transformational imperatives and as formative elements in power constellations of late modern societies confronted with the grand challenges. Looking at societies in the horizon of their political economies, we further ask how the ability of certain stakeholders to effectively use and enforce visions is also a condition for the evolution and stabilization of a specific "political economy"**[3]** today. In particular we focus on the effects of visions on the distribution of capital, resources, and constellations of power. Consequently, in this paper, we aim to conceptualize visions according to their roles in the political economy as resources and capacities in shaping pathways of societal transformation. In the political economy, the abilities to envision and effectively promote visions serve as assets (Birch 2017, 468ff.), the mastery of narratives and semantic control as resources, and the possession of visionary resources as capital.

In order to combine these socio-epistemic, political, and political-economic aspects of "future making" (Adam/Groves 2007), we apply and modify the established analytical framework of "vision assessment" in technology assessment (TA) (Grunwald 2004; Grunwald 2012; Lösch et al. 2016). We discuss this approach, confronting it with theories about the political-economic impact and role of future expectations, an emerging field of sociology and science & technology studies (STS) (e.g. Beckert 2016; Tyfield 2012). However, as we will show in the following, the widespread practice of putting the analytical focus on already dominant visions or processes of hegemonization of certain visions by excluding alternative visions can obstruct our view of the productivity of constellations of multiple and competing visions. Their constant interaction and interrelatedness in politicized struggles is a precondition for the transformation of power constellations in a specific political economy. Our aim is to sketch a first outline of a modified vision assessment framework that would be suitable for investigating and criticizing how certain future visions function as resources and capacities in political economies and how power constellations change during social transformations. This analytical framework should also enable analysis of the productivity of clashes between competing visions of the future in political struggles.

Our paper is structured as follows: First, we introduce the praxeological approach of technology assessment's vision assessment (TA vision assessment), which analytically focusses on visions as constitutive elements in socio-epistemic practices of sociotechnical change. Here, we highlight praxeological functions of visions, which we classify as general preconditions for visions to serve as resources and capacities in political economies. Secondly, we will expand this role of visions. To illustrate the interrelatedness of visions and power in political economies, we discuss sociological insights into the role of fictional expectations in the capitalist economy, the analysis of processes of assetization, and the futures in cultural political economies. Thirdly, with respect to visions as responses to transformational imperatives, we highlight that it is not individual, dominant, or hegemonic visions that determine transformations, but constellations and interactions of multiple and competing visions, which all respond differently to the overall transformational imperatives. Based on these results, we discuss methodolo-

[2] When we speak about power constellations in this paper, we are referring to a relational understanding of power that is based on the concept of Foucault (1980). According to Foucault, power is not an institution, not a structure, nothing to be acquired, seized, or possessed. Power is something that develops inter-relationally in the interplay of non-egalitarian relations (Foucault 1978, 93f.). Because of this 'nature' of power, the constellations of power are not stable, they are dynamic and in permanent change.

[3] Our understanding of political economy follows the concept of "cultural political economy" as introduced and used by Jessop and Tyfield (e.g. Jessop 2010; Sum/Jessop 2013; Tyfield 2012).

gical challenges that arise from this perspective on the emergence of multiple and competing visions in socio-epistemic practices and the resulting shifting constellations of power. We conclude with preliminary suggestions for a modified vision assessment suitable for the analysis of competing visionary practices regarding their role as resource and capacity in a political economy. Such an approach can contribute to a better understanding of the role of futures in processes of social transformation and to a critique of stabilizing power constellations in a given political economy that drive transformation pathways by excluding other options of transformation.

Visions as socio-epistemic practices – a praxeological approach

A variety of STS research has provided multiple insights into how sociotechnical futures (i.e. visions, expectations, imaginaries) co-shape innovation and transformation processes in the present (e.g. Jasanoff/Kim 2015; Borup et al. 2006; Lösch et al. 2019). Retrospective studies provided evidence that imaginaries of the future influence technology development and sociotechnical change and discussed their performativity, guiding forces, and expectation dynamics (e.g. Konrad 2006). These studies were also indicative of the development of the vision assessment approaches in TA. They orientate TA's conceptual development toward continuously analysing, evaluating, and even co-shaping visions (e.g. Ferrari et al. 2012; Ferrari/Lösch 2017; Lösch et al. 2017).

Confronted with the futuristic visons of new and emerging technologies (NEST) in the case of policy and societal discourses on nanotechnology, Armin Grunwald invented the concept of vision assessment (Grin/Grunwald 2000; Grunwald 2004). In the following years, he stressed the importance of ideas of future states of technology and society – what he calls "technology futures" (Grunwald 2012) – serving as media for societal change and innovation processes (Hausstein/Grunwald 2015). He suggested that contemporary debates and discourses on possible futures should be subjected to a hermeneutic analysis in order to gain insights into past and present imaginations of the future. This would also shed light on the specific cultural, economic, and social contexts in which new developments turn goods into innovations and on the conditions for the communicative and discursive production of futures (Grunwald 2012, 84).

In order to make the shaping effects of such futures accessible for empirical research and to develop a corresponding methodology, the vision assessment group at Institute of Technology Assessment and Systems Analysis (ITAS) has extended the original focus of vision assessment on phenomena (visionary narratives) and their enabling conditions by a praxeological perspective on visions as constitutive elements in socio-epistemic practices (see footnote 1), namely by looking at visions both as products and as actual practices of shaping the future. This approach conceptualizes visions not only as tacit or manifest symbolic material culture but also as parts of practices that create new knowledge orders and bring about new social arrangements. This praxeological understanding of visions directs attention not only to the narrative dimensions of visions but also to the functions that visionary practices

have in processes of social change. Previous case studies guided by this praxeological approach of vision assessment already provided evidence that visions are constitutive factors in processes of innovation and transformation because they fulfil several functions in practices (e.g. Ferrari/Lösch 2017; Lösch et al. 2017; Schneider/Lösch 2019):

- First, they provide orientation and semantically design the interfaces between present and future (also highlighted by Adam/Groves 2007; Anderson 2010).
- Secondly, they enable communication and action as media and knowledge objects (previously elaborated for means of communication by Lösch 2006, similarly for knowledge objects by Knorr-Cetina 1997; Star 2010).
- Thirdly, they help coordinate heterogeneous practices and enable forward guidance (see research on guiding visions, e.g. Dierkes et al. 1996).
- And, finally, they activate audiences by creating normative imperatives and opening up spaces of possibility (for this normative dimension see e.g. Grunwald 2014; Jasanoff/Kim 2015; for activation see McCray 2012).

The case studies have shown that the fulfilment of these functions indicate the effective use of the visions in practice: Visions as socio-epistemic practices contribute to knowledge production (e.g. new problem framings and proposed solutions) and change the social arrangements involved (interactions of new groups of actors, new alliances between stakeholders, new collaborations and networks) – even if the promises of the visionary narratives are not shared by all stakeholders involved (for a similar observation in the case of the dynamics of collective expectations, see Konrad 2006).

Certain visions are able to gain attention, attract audiences, help build networks, enable future-oriented, purposeful action, and much more. Such effects are prerequisites for transformation. That is why vision assessment focusses on visionary practices that correlate with such dynamics. But the open question is: What enables the ability to establish powerful future imaginaries that fulfil the functions of visions as socio-epistemic practices outlined above? Accordingly, visions that function as socio-epistemic practices *potentially* qualify as resources and capacities in political economies. Potentially, because the fulfilment of the functions is a prerequisite for their 'effectiveness'**[4]** as visions. However, it remains unclear why some socio-epistemic practices are able to acquire status and power in the political economy while others are not. How and why do visions successfully become part of the political-economic assetization? The vision assessment approach to date can observe the stabilization and hegemonization of certain visions by excluding other alternative visions and is also able to articulate this in deliberative discourses. However, the vision assessment approach has so far been 'blind' to the complex entanglement of this process in changing power constellations of the overall political economy.

Visions as a resource and capacity in the political economy

STS research has provided valuable insights into the relation between knowledge production and the transformation of social networks as well as the role of future imaginations in such processes, but it has not paid much

[4] Effectiveness does not relate to cause-impact relationships; the concept rather refers to the power and functionality of visions in different practices of change.

attention to the role of the political economy, as pointed out by Birch and Tyfield (Birch 2017; Tyfield et al. 2017, 3). According to their analytical perspective, we cannot explain knowledge processes, the dynamics of social arrangements, and also the role of future imaginations, if we do not consider the co-construction of knowledge, behaviour, economic growth/capital accumulation, and changing power constellations as an interrelated complex of change. For Birch, for example, visions of sociotechnical futures are an asset for the capital accumulation that is gaining increasing importance in the "political economy of technoscience" (Birch 2013), i.e. research and industries based on future promises, even though economic goods or scientific results are not produced but only envisioned (see Birch 2017 for the case of bioeconomy). This hypothesis of assetization also corresponds to analyses of the growing role of future visions in the "age of technoscience" (Nordmann 2011).

Our previous research on visions as socio-epistemic practices for the case of the smart-grid vision in the context of the German energy transition has already provided insights into how visionary practices are a shaping force in the transformation of knowledge orders and power constellations in the electricity sector (e.g. Lösch/Schneider 2016). However, this research did not reflect the changes in the power-knowledge complexes also as part of the production and reproduction of a cultural political economy. The term "cultural political economy" relates to the concept developed by Jessop (2010), which suggests that not only political and economic structures are constitutive elements of the economy but also cultural discourses and their practices, such as imaginaries of the future and the related visions. Taking Tyfield's description of the cultural political economy of neoliberalism seriously, we conclude that the neoliberal marketization of everything also comprises the production, communication, and use of visions (see Tyfield et al. 2017, 4f. on the neoliberal knowledge economy). This also includes visions that respond to transformational imperatives.

In the light of this concept of cultural political economy, we argue that practices of appropriating resources that serve to accumulate and expand economic, social, and cultural capital are no longer limited to spatial aspects of material or virtual territory. What is striking is that actors employ practices in which not only the past (invention of tradition as essential part of nationalist politics), or the present (determination of the current discursive frameworks of knowledge and action) is an important sphere of determining meaning, but in which the future is increasingly used as a resource and capacity. By providing compelling narratives of a future world, visions of desired or feared futures may set the framework for future policies and stimulate innovation pathways. Visions are a decisive tool to get a head start on innovation, future markets, political power, and economic advantage in the global economy. The struggle for something as uncertain as the future is strongly intertwined with the struggle for resources and power.

Therefore, if we look at the conditions under which actors successfully use visions to create futures according to their needs and expectations, it is social and cultural capital, the timely acquisition of resources (i.e. attention, finances, networks), and techniques to increase the symbolic value of actions and narratives that gives some visions more credibility than others. But how can we analyse this empirically? We have empirical evidence that visions

function as assets and are an important resource in the competition over other resources. Likewise, the capacity for visionary action is crucial for advancing in the struggle to improve positions in the cultural political economy (Birch 2013). But we still lack knowledge on *how* a vision becomes a resource and capacity of the cultural political economy in general and especially in the context of competing visions that struggle for the most convincing response to existing transformational imperatives. This is a field of research yet to explore.

The relationship between the future and the capitalist political economy of late modern societies has been elaborated by Jens Beckert in his work on the constitutive role of fictional expectations for the capitalist economy. Beckert (2016) pointed out that the implementation of two institutional mechanisms – competition (as the increased focus on future opportunities) and credit (as enabling the capacity to use future capital in the present) – has enforced future orientation and the rise of fictional expectations in late modern capitalist systems. These expectations brought about future narratives becoming an essential tool for dealing with uncertainty and risks for political and economic agenda setting and decision-making. According to Beckert, narratives are used to persuade actors of certain agendas and to create legitimacy, what he calls "promissory legitimacy" (2019). Creating the future before it materializes (or creating the future in the now so that it materializes according to our aims) is becoming a symptomatic approach of actors in neoliberal capitalist societies, which are characterized by acceleration, increasing epistemic uncertainty, and densification of innovation dynamics based on the fundamental(ist) values of growth, efficiency, and progress (Beckert 2016).

Beckert's view is promising as he places the increasing importance of futures at the centre of his analysis of the reproduction and production of capitalist political economies. Nevertheless, his approach does not fully meet our analytical demands. Beckert only marginally considers the complex processes of co-production of knowledge, power, culture, and economy, unlike the authors of the cultural political economy as discussed above (Tyfield 2012; Jessop 2010). His focus on the relationship between decision-making in the financial sector discusses the role of "fictional expectations" and "imaginaries" primarily in the market and the financial sector, not covering their role in broader society. Furthermore, Beckert focuses on "dominant imaginaries" or "dominant expectations in the market" (2016, 279; 147). His already complex analysis does not sufficiently explain how visions gain dominance in complex processes of societal change and transformation, nor does it examine the interrelated co-constitution of power, knowledge, and accumulation of symbolic and cultural capital. In addition to his theory, we need analytical perspectives that enable us to analyse not only the power of dominant visions. We need to grasp the political struggles and interactions of *multiple visions* in dynamic constellations of power and knowledge in specific political economies.

Multiple and competing visions as part of transformational practices

Ideas of desired future states that are expressed in visions and other formats of sociotechnical futures, i.e. in mission statements and scenarios, are important factors in enabling social change and have been analysed and evaluated by TA for some time now using methods of vision assessment (see Lösch et al. 2016). The praxeological focus of vision assessment research at ITAS on the practical effectiveness of visions of sociotechnical futures in innovation and transformation processes (see footnote 1) is of particular relevance here. Like innovations, transformations become tangible as a result of accumulation (capital, resources, interests) in a field of competing visions of heterogeneous actors and under conditions of a stabilized dominant vision, excluding alternatives. In previous studies, the transformation process was analysed as being guided by a hegemonic vision, like a technical innovation process (based on the model of the promise-requirement cycle, see van Lente 1993). Although criticism of the exclusion of alternative visions motivates vision assessment (e.g. Ferrari et al. 2012), the empirical focus is usually on the formative effects of the vision that gains dominance. However, we state that it is precisely not the dominance of *one* vision, but the *diversity* of visions of sociotechnical futures that poses a particular challenge for vision assessment. A multitude of actors debate, negotiate, and argue about very diverse, often conflicting assumptions about the future, about ideas of better or possible futures, about ways to realize them, and about how to address societal challenges. In the process, they produce new constellations of visions that are interrelated and impact the transformation of social arrangements.

Political programs and debates on contemporary transformation processes (e.g. in the areas of digitalization, mobility, food, agriculture, energy, and urban development) often refer to the transformational imperatives of the grand challenges of necessary sustainable and future-oriented social change. They are framed as socially accepted justifications for the need for action. Nonetheless, these forward-looking transformational imperatives mean much more than partial or sectoral improvements; they often call for a comprehensive reorientation of the modern way of life which understands transformation systemically. However, practices have shown that such a perspective on transformations is the hardest to achieve, as it requires uniting all actors and their different agendas under the umbrella of a compromise that usually turns out to be unsatisfactorily minimalist. Often, we assume that compromise or agreement on everyday behaviour following scientific advice (e.g. Planetary Health Diet, EAT Lancet Commission 2019) or guided by swift political decision-making (Nationale Akademie der Wissenschaften Leopoldina 2019) is the rule rather than the exception. Instead, societies encounter a struggle for resources and capital in order to assert particular interests and a struggle over the conditions under which political actors decide what is true and false and appropriate action.

The actors involved in these struggles deal very differently with the general transformational imperatives of the grand challenges, bringing divergent, often contradictory visions into social debates and generating controversy about the ‘best’ or ‘most appropriate’ path to solution. The differences can manifest both at the level of problem constitution or the assessment of

the scope of the problem and at the level of problem solving and the methods used to implement the solutions. This certainly leads to conflicts on the one hand and to increasing uncertainty in decision-making processes on the other. The future thus becomes a controversial sphere and control over its discursive construction a desirable resource, as it promises to secure power and a larger share in the allocation of resources. It is politicized by concurring visions that promise to provide different and often contradictory problem solutions.

In such a 'battle' between different visions and visionary practices, the interaction of concurring visions may result in clashes of visions, bringing about debate and controversy that lead either to a new level of reflexive knowledge or to a reification of previously vague narratives. The actual process of transformation emerges as a result of these reciprocal relationships and interactions; from the uncoordinated and contingent interaction of local practices and visions or their political orchestration. And it is precisely these consequences for the transformative capacities of societies resulting from the interaction between the opposites and conflicts that are neglected if research focuses only on stabilizing and stabilized dominant visions.

Using the example of the German energy transition, studies have shown that some visions suggest solving the challenges by favouring intelligent energy networks, while others advocate a decentralized, self-sufficient energy supply (e.g. Lösch/Schneider 2016). In a case study on the role of the smart grid vision in the context of field experiments, funded by the Federal Ministry for Economic Affairs and Energy (BMWi) and entitled "E-Energy" (BMWi 2014), we analysed how the orientation toward the common vision is a prerequisite for experimental practices and knowledge production. Our analysis of experimental tests of new sociotechnical arrangements of a decentralized smart grid energy system showed the emergence of a new "power-knowledge apparatus" (after Foucault 1980). We identified rearrangements within the power constellations, in the relationship between the knowledge system, the roles of actors, technical instruments and processes, as well as in governance, regulation, and responsibilities (Lösch/Schneider 2016; further Lösch et al. 2017). The study showed evidence that the ability to set the smart grid vision as a central point of reference in the energy arrangements, as a future-oriented asset, is already a resource and capacity in the cultural political economy, even if it is not yet realized. Using this vision as an asset and resource could improve positions and attract funding research and development. However, this case study focused on an analysis of the dynamics within the experiments in the wake of the practical application of the smart grid vision; it did not intend to investigate potentially competing or contradictory visionary practices in the environment outside these experiments. The research focus was limited to the analysis of the power-knowledge impacts of the dominant smart grid vision that was also central to the German parliament's decision on the energy transition (BMU/BMWi 2011).

However, retrospective analysis showed that other concurring visions and local practices emerged in response to the challenges of the energy transition. We can reconstruct that the dominant smart grid vision in the experiments is already a product which integrates and combines promises and demands of multiple visions (Hausstein/Lösch 2018) – such as visions of

energy systems based on stability and control, of sustainable systems based exclusively on reduced consumption and renewable energies, of participatory systems realized by actively engaged prosumers, of heterogeneous regional systems based on self-sufficiency and self-regulation, or of fully ICT regulated systems based on regulation by artificial intelligence (e.g. Covrig et al. 2014; Ramchurn et al. 2012; Späth/Rohracher 2010; Throndson/Ryhaug 2015; Weber 2003). This means that from the established, critical perspective of vision assessment, a vision gains dominance and excludes alternative visions. However, one insight from this re-evaluation of material was that the process of gaining hegemonic dominance is not just a process of excluding other visions, but also of including parts of other visions that constitute an improvement and stabilization of positions. As an additional effect and in response to this 'appeasement', it also brings about changes in external or other visions. This insight calls for an extension of current vision assessment to the ongoing struggles of multiple visions (see Hausstein/Lösch 2018), as further elaborated in this paper.

The responses to the transformational imperatives (grand challenges) found in the practices surrounding the energy transition vary in their visionary content and their orientation. Examples are visions of the mobility transition, ranging from visions of autonomous driving, electromobility, multimodal transport concepts in combination with sharing concepts to the car-free city. These examples show that numerous promising solutions to the challenges of the transformational imperatives are brought into play. These competing visions are not only articulated in general governmental policy programs aimed at securing a leading position in the global economy, but are also embedded in local transformation practices, such as real-world laboratories, field experiments, model projects, citizens' initiatives etc. Especially with these local practices in mind, the question arises how visions are interrelated, correlate, and interact. The open question is whether and how the degree of their effectiveness results from the acquisition of symbolic and social capital through the assetization of the not-yet-existing. Perhaps the prerequisite for using visions as a resource and capacity is the ability to successfully organize the interaction and manage the interrelatedness of different visions. This question has not yet been explored.

This analytical view expands the focus on dominant visions in the political economy (Beckert 2016). But it also goes beyond the criticism of vision assessment for the exclusion of alternative visions by dominant visions (as problematized above). It shares the intention of TA to empower alternatives or excluded options (e.g. Grunwald 2012; Ferrari et al. 2012; Dobroc et al. 2018), but it also attempts to assess the productivity of sometimes combative (inter)actions between multiple visions. As a consequence, we propose that the established focus on the assessment of single stabilizing visions that motivate and coordinate the development of a limited field of technological innovation, as already critically discussed in the TA and related STS community (see Lösch et al. 2016, 14ff.) should be complemented with an interrelational view on multiple and concurring visionary practices and visionary constellations and their ongoing dynamics (Lösch/Hausstein 2020).

Conclusion

For TA's vision assessment, it is precisely the view of visions in the context of such local transformation practices that is illuminating, since here the effectiveness of visions becomes observable. Within and between the different transformation practices, controversies arise between the heterogeneous actors about their visionary ideas and the means of achieving desired future states. That is, visions do not stand for themselves but refer to each other in practice in the form of discursive approximation or demarcation, sometimes even in a concealed way by ignoring or not addressing or referring to other visions. Accordingly, in our view, a vision assessment on the roles of visions in social transformations should always examine a constellation of visions that fit into a specific problem context or a transformational imperative. Given this perspective of vision assessment, the object of research is then not a particular vision, but the vision in its context and the interplay between general transformation imperatives, local transformation practices, and visions as socio-epistemic practices that 'translate' between imperatives and local practices.

Against the backdrop of these reflections, we propose broadening the perspective of vision assessment to make it useful for analysing the politicization of the future. Vision assessment needs a conceptual framework that focuses on the role and effects of visions in a specific cultural political economy as a phenomenon that evolves in constellations of multiple competing but interrelated, co-constituted visions. The modified research questions of this vision assessment in the context of social transformations in specific cultural political economies are now:

- To what extent are transformations the result of continuous disputes in constellations of multiple visions and practices of their articulation?
- To what extent does transformation presuppose interaction in simultaneously occurring local transformation practices, but in conflicting visions? Indications for this are controversies, e.g. in the fields of energy, mobility, and urban development, which often refer to productive interactions and recombination, the exchange of visionary elements and adaption, and the integration of criticism – a process of continuous "boundary work" (see Gieryn 1995).

Accordingly, we suggest that research on vision assessment as an assessment of the visionary constellations should focus on the effectiveness of parallel, co-acting, and opposing visions as well as their practices and reflect on the constitutive contributions of this multiplicity of visionary practices to the transformation of power constellations, which in turn produce and reproduce cultural political economies.

The discussion above has shown how struggles, clashes of competing visions, and the combination of different visionary elements contribute to the emergence and empowerment of visions as concrete and locally distributed socio-epistemic practices, the collective production of knowledge, and the formation of social arrangements, and why these are crucial for understanding processes of social transformation. On a conceptual level, we propose to analyse the role of visions in processes of social transformation in settings of complex cultural political economies, and to empirically substantiate the role of constellations of visionary practices in political economies both theoreti-

cally and methodologically. Exploring the role of visions in transformation processes requires analysing the relationship between multiple visions that are generated and used in a multitude of locally distributed transformation practices and that converge only in their conceptual reference to the same transformational imperative.

We conceptualize visions as a capacity and resource in the political economies of late modern societies. This perspective has been supported by previous sociological and STS research. However, there is a lack of analytical approaches to empirically analysing how visions can function and work as a capacity and resource in specific political economies. We therefore propose to adopt the vision assessment approach, which focuses on visions as socio-epistemic practices, and shift its focus from an analysis of dominant visions and processes of their hegemonization to an analysis of constellations of visions that respond to a transformational imperative and their co-productivity. This provides a lens to empirically analyse the effects of the struggles of multiple futures in different power constellations, the resulting clashes of futures in specific political economies, the impact of these clashes on power constellations, and their role in driving or restraining societal transformations.

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