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Perspective

The Social Importance of Researching Action-Oriented Circular Futures

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Abstract
Although the circular economy (CE) aims to address ecological and social challenges of our times, a narrow focus on technical solutions risks perpetuating the structures that underpin today's eco-social crisis. Achieving a fair and sustainable CE therefore requires approaches that go beyond business-as-usual and consider the deeper economic, social and political dimensions of circularity. In this regard, Techniques of Futuring (ToFs) are powerful tools for envisioning and co-creating alternative pathways. To date, much of circular futures research has relied on static, scenario-based planning that successfully identifies possible endpoints, but not how to navigate from the present to a transformative future. By systematically integrating ToFs such as backcasting, Delphi and SWOT analyses, researchers and practitioners can identify the necessary policy measures, technological innovations and cultural shifts to realise an equitable and ecologically sound CE. This action-oriented perspective is essential to overcome current limitations, guide societal change and ensure that the CE becomes a genuinely inclusive and sustainable paradigm.

Keywords: Circular Economy · Futures Studies · Philosophy of Science · Techniques of Futuring · Political Economy

1. INTRODUCTION
The circular economy (CE) aims to address ecological and social challenges by keeping resources in circulation for as long as possible. However, a CE built solely on current economic, social, and political mechanisms risks reinforcing the very structures that underpin today's eco-social crisis, thereby perpetuating unsustainable practices and social inequalities (Genovese & Pansera, 2021). To promote a fair and sustainable circular economy, research and practice must go beyond business-as-usual by transcending purely technical perspectives and engaging with the deeper economic, social, and political dimensions that shape circularity (Murray et al., 2017).

Such a holistic vision is at the centre of circular futures research, which highlights forms of the CE that are compatible with both environmental sustainability and social justice (Calisto Friant et al., 2020). Referring to previous studies, this short communication argues that a fertile area of research lies at the intersection of CE and futures studies, where the CE can be built on sustainable and equitable principles. Furthermore, it emphasises that the use of Techniques of Futuring can enable not only the imagination but also the design of alternative pathways to a socially just and ecologically sound CE.

The structure of the paper is as follows. First, it outlines the benefits of Techniques of Futuring and examines their current use in the field of CE. It then suggests how Techniques of Futuring can be employed for more action-oriented research to help stakeholders foster transformative CE transitions.

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2. FUTURES STUDIES AND TECHNIQUES OF FUTURING

Futures studies is an interdisciplinary field concerned with possible, plausible, feasible, and desirable futures. Drawing on Hajer and Pelzer (2018), I use the term Techniques of Futuring (ToFs) to refer to the systematic methods and tools of this field —such as scenario-based planning, backcasting, SWOT analysis, horizon scanning, and the Delphi method— that help researchers and practitioners systematically envision how the future might unfold.

In the current era of overlapping crises and planetary boundary transgressions, societies urgently need a deeper understanding of how to address ongoing challenges. Positivist science, which relies on statistical patterns derived from existing data, struggles to capture non-existent pathways —including socio-economic systems and political frameworks that deviate significantly from the status quo—. ToFs are therefore invaluable because they expand what is considered possible. Their use can complement empirical analyses in at least two crucial ways.

Firstly, ToFs enable the assessment of alternative futures that are not automatically constrained by prevailing trends. Admittedly, these methods can be subject to cognitive biases (Bradfield, 2008). Nevertheless, participatory and creative approaches reduce such cognitive biases and mitigate blind spots that purely quantitative methods might overlook. For example, Delphi analyses involving diverse stakeholders and citizen engagement activities based on serious games can uncover tacit assumptions and foster transdisciplinary dialogue, ensuring that justice- and sustainability-oriented concerns remain central.

Secondly, ToFs can do more than simply outline scenarios; they shape the future by identifying pathways towards desired goals. By exploring different futures, we become aware of the inadequacies of current economic, social, and political structures in promoting just and sustainable societies. Identifying these shortcomings clarifies what must change to achieve greater sustainability and equity. Given the performative nature of ToFs (Oomen et al., 2022) —i.e. their ability to influence and shape the future through practice— their application is crucial to pinpoint and co-create pathways towards a genuinely desirable future. This emphasis on action is particularly important in light of the limited guidance on how to anticipate and overcome potential pitfalls associated with transitions beyond business-as-usual (Kirchherr, 2022).

3. CIRCULAR FUTURES RESEARCH

Research on circular futures has predominantly relied on scenario-based planning, whereby scholars create static snapshots of potential outcomes —for instance, contrasting high-tech, top-down governance with low-tech, bottom-up governance (Bauwens et al., 2020)—. Such scenario work can be very useful for clarifying the trade-offs and synergies among different forms of CE. In a similar vein, Friant et al. (2020) identify a variety of circular discourses, from pro-growth ecomodernist positions to more radical post-growth visions; Lowe and Genovese (2022) demonstrate how theories of value inform distinct pathways; and Pinyol Alberich et al. (2023) examine how political narratives in the European Union define institutional space for circular transition.

This body of work has raised awareness of how dominant assumptions —particularly the need for continuous economic growth— can both enable and constrain certain forms of circularity (Genovese & Pansera, 2021). Yet, these predominantly scenario-based perspectives often remain static, highlighting possible endpoints without explaining how to navigate from the present to a transformative future. This gap underscores the need for action-oriented approaches that harness the full potential of ToFs.

4. ACTION-ORIENTED CIRCULAR FUTURES RESEARCH

Techniques such as backcasting, SWOT analyses, and Delphi panels can help bridge the "imagination–implementation" gap by illustrating how different actors might realise their visions of the future. Backcasting, for instance, anchors a desirable endpoint —such as a low-carbon, justice-orientated CE— and then works backwards to identify the key policy interventions, technological changes, and cultural shifts necessary to achieve it.

Similarly, SWOT analyses can highlight the strengths and weaknesses of proposed circular transitions, as well as the opportunities and threats that arise when deviating from business-as-usual. A systematic examination of resource availability, governance structures, and social acceptance can make scenario results more actionable.

Moreover, the participatory and performative elements of ToFs foster a shared vision among all societal actors. Workshops that combine Delphi or scenario co-creation with public dialogue can, for example, identify common circular pathways and mobilise grassroots organisations, private-sector actors, and public administrations. By

challenging technocratic solutions and nurturing inclusive transitions, these participatory efforts help to envision post-business-as-usual pathways and critique dominant assumptions about growth and governance.

In doing so, they broaden the spectrum of what is deemed feasible and integrate multiple levels —from local community projects to global policy interventions— to uncover synergies and tensions. Hence, ToFs can drive proactive decision-making by setting milestones that align economic models with social and environmental wellbeing, ensuring that scenario outcomes do not remain purely hypothetical.

5. CONCLUSIONS

Although a growing number of scenario-based studies has opened up a critical space for circular futures research, these works frequently neglect the action-oriented steps required to move beyond business-as-usual. A more systematic integration of ToFs can facilitate transformative change. By demonstrating how social, economic, and political mechanisms can be formed in line with the principles of sustainability and justice, ToFs enable alternative futures to be not just imagined but also realised. This action-oriented approach to the CE is vital if we are to fully realise the transformative potential of the CE in addressing the ecological and social challenges of our times. As planetary and social crises intensify, the performative power of ToFs can help ensure that the CE becomes a fair, inclusive, and ecologically meaningful paradigm, rather than another iteration of the status quo.

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AUTHOR CONTRIBUTIONS

Brais Suárez Eiroa: The main author conceptualised, drafted and wrote the article.

DECLARATIONS

Competing interests The authors declare no competing interests.

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