(Re)-imagining ecologically harmonious food systems beyond technofixes

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Abstract
This essay draws on the interrelated concepts of imaginary, imagination, and narrative to problematise current approaches to the challenge of creating sustainable food systems. It also leverages these concepts to reassert the importance of radical imagining in finding sustainable pathways. We specifically unpack the dominant imaginary for the future of food systems, which is centred on the narrative of "technology as salvation" and highlight its detrimental implications. In attempt to reinstate the radical imagination in the field of sustainable food systems we argue for models and narratives based on recontextualisation, repoliticisation and relationality in order to challenge the dominant imaginary.

Keywords: Imaginary, Narrative, Ecocentrism, Food Systems, Technology, Critical, Sustainability

Comment ré-imaginer une relation harmonieuse entre les systèmes agro-alimentaires et l'écosystème : Dépasser les approches techno-centriques

Résumé
Cet essai mobilise les concepts d'imaginaire, d'imagination et de narratif afin de problématiser la façon dont la question de la durabilité de nos systèmes agro-alimentaires a été traitée et approchée jusqu'ici. Ces concepts nous servent aussi à réaffirmer l'importance de l'imagination radicale dans l'entreprise du développement durable. Notre analyse se focalise sur le discours dominant autour des systèmes agro-alimentaires durables qui s'ancre principalement sur un narratif de la technologie comme salut. Nous explorons notamment les conséquences désastreuses de cet imaginaire. Enfin, dans une tentative de restauration de l'imagination radicale dans le domaine des systèmes agro-alimentaires durables, nous proposons une approche autour de modèles et discours fondés sur la re-contextualisation, la re-politisation et la relationalité, permettant ainsi d'offrir des alternatives à l'imaginaire dominant.

Mots clés: Imaginaire, Narratif, Ecocentrisme, Systèmes agro-alimentaires, Technologies, Critique, Développement durable

Introduction

With the climate crisis unfolding before our eyes and as we continue living through a pandemic that has emerged as a result of our infringement on nature and other species' natural habitats; we cannot help but ponder upon what will come next. The nature of the ecological challenge is immense and complex, and the urgency of articulating socio-ecological transitions has been highlighted by many (see for e.g., Brown, et al., 2012; Escobar, 2015). From biodiversity loss to climate change, from depletion of resources to the decline of wildlife habitats, from public health hazards to the sixth mass extinction, ecological thinking highlights the interconnectedness of peoples, animals, plants and geophysical worlds as well as the entanglement of ecosystems, technologies, institutions, and cultures (Chakrabarty, 2009; Kingsland, 2005).

In simple terms, given this context, we need to ask ourselves how will we rethink our relationship with the natural environment? How then will we organise our production and consumption systems to ensure that we live within ecological limits? What models of organising will emerge, which will be promoted, which will become redundant? Who will win and who will lose in the process? The options are already being laid out in front of us and at times the trajectory feels inescapable. The proposed dominant pathways reproduce rather than challenge business as usual and we seem to struggle to detach ourselves from existing systems and structures in order to articulate true alternatives that can ensure we achieve the socio-ecological transitions that are required. Within the realm of organisational studies, this is well articulated in the work of Nyberg, Wright, and colleagues (see for e.g., Bowden et al., 2021; De Cock et al., 2021; Nyberg & Wright, 2019). In this essay we open the discussion as to how our story as a society can unfold and our role in shaping it. We anchor our perspective in the idea that (re)-imagining, as in the process of imagination, is fundamental to the development of sustainable futures at the organisational and societal levels. The environmental crisis, and its interconnected social implications is challenging our ways of living as a species and requires us to fundamentally rethink how we envision and organise ourselves in relation to the natural environment, which we have already destroyed and shaped so much. We align with the view that this (re)-imagining process, in its ability to generate alternatives to the normally accepted, or dominant, understandings and practices on a given issue, is one that is deeply political (De Cock, et al. 2013; Komporozos-Athanasiou & Fotaki, 2015).

Our focus is on one fundamental societal need: food. Food and agriculture represent critical domains within debates on socio-ecological transitions, notably in terms of issues related to the food poverty and security agendas; to their contribution to emissions and climate change; to their connection to land systems and usage as well as biodiversity, but also to their socio-economic organising rooted in post-colonial and power imbalanced approaches. Food systems are complex and extended networks set up to bring goods to our table. They consist of interconnections between food producers, manufacturers, retailers and consumers. Globalisation and industrialisation have irrevocably shifted the way our food production and consumption systems are organised (Lanciano et al., 2018). Food supply chains have expanded to satisfy the insatiable consumers in the Global North. Our current 'conventional' food

systems – as opposed to 'alternative' food systems – are built on failing assumptions of endless growth and mass production of cheap food to the detriment of the natural environment and rural communities.

Our work leverages the concepts of imaginary and the imagination from the philosophy of Cornelius Castoriadis, and takes a critical narrative approach to challenge the dominant growth and corporate-centric food production narrative embedded in the ideology of technoscientific futurity. We advocate for re-engaging with our collective sense of place and community, imagining what spaces can reasonably, efficiently, and amazingly produce and provide food in harmony with the ecosystem. We offer an engaged narrative approach rooted in the imaginary to finding meaningful alternative food futures.

1. The imaginary, the role of imagination and narratives for sustainable futures

In this section we set out to unpack the philosophical grounding of this essay and in particular the core concepts that underpin our argument, namely the imaginary and the imagination and how they are connected to stories and a narrative approach. We draw specifically on the concept of the imaginary as proposed by Cornelius Castoriadis and work within management and organisational studies that has used and expanded upon this concept.

The work of Castoriadis foregrounds a radical and political understanding of the questions of the imagination and creativity, and as such enables considering the ability of society to create new situations and ways of doing. We find this particularly helpful in our exploration of the development of true alternatives and how a rupture from technological determinism can be envisaged. In Castoriadis' words (1987: 184), 'what is given in and through history is not the determined sequence of the determined but the emergence of radical otherness, immanent creation, non-trivial novelty.' It is the focus on the human capacity for creation in Castoriadis' work that offers promising avenues for organisational scholarship grappling with the challenge of how to do things differently considering the urgency of the socio-ecological transition. Our argument aligns with Castoriadis' criticism of 'rational mastery' as the imaginary of progress characterised by the unlimited expansion of technology and economy at the expense of society and nature (Papadimitropoulos, 2018).

Throughout his work, Castoriadis articulates an ontology centred on the imagination (Komporozos-Athanasiou and Fotaki 2015) and a way of thinking about 'the fact that something other than what exists is bringing itself into being, and bringing itself into being as new or as other' (Castoriadis, 1987: 185). According to Castoriadis, creation brings into being new forms that did not previously exist, including language and institutions. In his philosophy, the imaginary is our 'agreed' societal context that comes into existence through processes of radical 'novation, creation, and formation' (Kearney 1998; De Cock & Land 2006; Castoriadis 2005). Castoriadis' imaginary is a social concept which seeks to explain how society as a collective engages in the creation of meanings which then permeate and create the institution within which we live. The collective imagination plays a central role in the institution of a

social order; imagination, language and reality are closely intertwined in that the way in which organisations and institutions are imagined and represented through language has an effect on the actions that are deemed possible to pursue (Komporozos-Athanasiou and Fotaki 2015, Taylor, 2002). The social imaginary and the collective process of imagination are political. In his work, Castoriadis defines the imaginary as society's reality at a given point in time; it is not fixed or determined but a reflection of the dominant representations and meanings. According to him, it is the process of imagination as affective and radical, that enables the development of new pathways and realities as the dominant modes get challenged. In his work, Castoriadis highlights the importance of 'creative instances' as a central aspect of institutions. This is fundamental to sustaining the political dimension of imagination, one that can challenge the dominant and allow for new realities to come into being. Through the possibility of imagination, we can transform 'absence into presence, actuality into possibility, what-is into something other-than-it-is' (Dasein in Kearney 1998: 4 in De Cock et al. 2013) and leverage the creative potential of the human collective in instituting 'a new social imaginary' (Castoriadis 2005: 125). Language is central to the concept of social imaginary in the sense that institutions have both linguistic and material dimensions but also because it is through language that the 'new' can come into being.

There are power dynamics at play in the institution of new social realities but also in the maintenance and deployment of narratives that serve the dominant imaginary. This is well-discussed by De Cock et al.'s (2013) in reference to the ways in which creativity has become instrumentalised in our capitalist liberal democracies to serve what already is. Creativity becomes entangled with the market economy and capitalist ideology in that it is leveraged for its value creation potential. As a result, creativity loses its revolutionary and radical potential as 'it is often posited as the power that develops the already existing' and marginalises the imagination as proposed by Castoriadis.

Like De Cock et al. (2013) we deplore the 'exhaustion' of the political imaginary and political imagination and contend that a critical approach is therefore necessary to reinstate the notions of creativity and imagination in their more radical forms. Our work on food production and consumption networks and sustainability (Glover and Touboulic, 2020; McCarthy, et al., 2018; McCarthy, et al. *forthcoming*; Nieuwenhuis et al., 2021), has revealed a feeling of inescapability of a certain vision of the future of food systems, which is rooted in the current dominant imaginary. It also shows the 'depoliticisation' of food systems (Prem, 2021) in that a technoscientific future is being constructed and perpetuated through narratives and practices as the only possible route for the future of our food systems. We discuss this in more detail later in this essay. One particular aspect of interest here is that we are witnessing a human type that Castoriadis called the 'reflexanthrope' (Castoriadis, 1997), which very much reflects the current notion of the 'consumer' within this dominant narrative on food systems: 'a type of being that is kept on a leash and maintained in the illusion of its individuality and of its liberty by mechanisms which have become independent of all social control and which are managed by anonymous apparatuses already well on the way to achieving dominance' (Castoriadis, 1997: 115). There is an illusion of freedom that permeates the dominant imaginary, and a sense that the future of society is solid, determined linearly and rooted in an existing system. As such

there is an urgent need to open alternatives in that space to restore a sense of agency for people as imagining beyond 'what is' constitutes the ultimate act of freedom. We join De Cock et al. (2021: 470) supporting their argument that 'confronting the climate crisis requires an imaginative engagement with ideas of human and social organization in order to disrupt present thinking' and we see the potential of language and narratives, notably literature and other forms of writing, to challenge dominant views of the world and bring the usually 'hidden' into light. We see here connections with the work of Castoriadis in the way that narratives and fiction are results of and can support leveraging the imagination in order to prompt action (Komporozos-Athanasiou and Fotaki 2015; Alavrez and Merchan, 1992). A critical narrative approach allows for exposing underlying power-structures, ideological and societal forces at play in the sustaining of a dominant imaginary, and for celebrating and making space for the alternatives and hidden stories, the radically different. In other words, the imagination is needed to create other spaces and subvert the now.

A critical narrative approach can expose and challenge dominant (and failing) discourses, and conversely narratives in the form of positive stories rooted in practice are powerful means to enable education on sustainability and foster pro-environmental behaviour change for more sustainable practices (Veland et al., 2018). We connect with De Cock et al. (2021) in seeing potential for narrative fiction to help us broaden our perspective in exploring current issues in management research. It allows us a way to see a world that is plausible yet 'goes beyond what we see in our everyday world' (Whiteman and Phillips, 2008). Narratives can challenge us to think 'without a bannister' (Arendt 1973 in Gendron et al., 2017), questioning dominant paradigms and thinking more deeply 'about organisations and management' (March, 2006). This can allow us to conceptualise problems in different ways, facilitating the shift from the lead firm perspective that dominates much management research (Jodelet, 1989 in Gendron et al., 2017). It encourages different ways of theorising and learning, and has been considered as a way to produce good knowledge for sustainable development insofar as fiction can act as 'thought experiments and inspiration for both problematizing and theory building in the social sciences' (Gendron et al., 2017).

Additionally, as a form of art narrative fiction is another mode of experiential learning, incorporating emotional and subjective accounts, building on our emotional experiential ways of knowing (Gendron et al., 2017; Czarniawska-Joerges and Guillet de Monthoux, 1994). There is a potential for fiction to incorporate potential future imaginings (Castoriadis, 1987) or counter-pictures (Alvesson and Wilmott, 1992) of technological advancements. We exploit the potential insights offered by narrative fiction, particularly drawing on Margaret Atwoods speculative fiction work, to illuminate and interrogate this story of unfettered technological advancement to create a cautionary tale (Acquier and Rehn, 2019). To move beyond a sustainability agenda driven by the vested interests of a few, we contend that it is fundamental to reaffirm the socio-cultural nature (Maida, 2007) of the transition towards sustainable food systems and promote currently marginal alternative narratives of food production premised on flourishing and nourishing for us and the environment.

2. The dominant imaginary for the future of food systems: Deployment of the narrative of "Technology as salvation"

2.1 Technology as salvation: an overview

Food is critical to the continuation of humanity, forecasts suggest that growth will continue and that by 2050, the world will need to feed more than nine billion people, requiring nearly 70% more food than is consumed today (Denis, Fiocco and Oppenheim, 2015). Sustainability in the agri-food sector is constructed as central to future international agricultural policy to respond to this need to increase food production in both socially responsible and environmentally friendly ways (Dillon et al., 2016; UNSDGs goals 1, 2, 12, 13, 15 and 17). Despite the proliferation of "sustainability" standards in food networks, we are yet to see any meaningful transformation towards genuine sustainable food systems, which are both ecologically resilient and socially equitable. "Sustainability" standards indeed remain narrowly focused and defined and provide little benefit to smallholders in terms of resilience in their socio-ecological systems. For example carbon footprint is often being used as a key measure of sustainability, yet it is widely recognised that progressing towards socio-ecologically resilient food supply chains requires a comprehensive and multi-dimensional approach that encompasses not only climate related measures but also socio-cultural dimensions.

Food consumption and production networks are built on privately controlled systems that serve the vested interests of a few powerful parties. Based on an instrumental logic they purport to serve the consumer but are antithetical to ecological needs (Henson, 2008; Montabon et al., 2015). The globalisation of food is rooted in historical and often colonial trading patterns and reflect our current economic model rooted in capitalism. The co-ordination and control of the means of production by efficiency seeking corporations (Young and Hobbs, 2002) has served to deepen the environmental and social inequalities experienced in the Global North and South. These networks connect consumers and lead firms in the Global North to suppliers and smallholders mostly located in developing countries. The upstream processes of fresh food produce, such as agriculture and dairy production, remain characterised by a dispersed base of smallholder farms, i.e. family-run businesses where control stays within the family through generations (Ehrgott, Reimann, Kaufmann and Carter, 2011).

This legacy necessitates challenging, as do our underpinning assumptions that consumers should have access to anything, anytime and cheaply and preferably a sanitised version through the supermarket. Issues regarding seasonality, availability, food print, the cost of labour remain largely hidden to consumers. This is despite the emergence of movements such as Fair Trade, which have attempted, with limited success, to redress the balance across food supply chains. We must address not only the ecologically transitions necessary for harmonious organising but also those for social equitability as food labour has degraded within the dominant capitalist system (Thompson and Smith, 2010) that has favoured large corporations and disconnects consumers from the provenance of their food (McCarthy et al., 2021 *forthcoming*). Dominant narratives exist regarding food production, across the media, research and policy which reproduce and exacerbate imbalanced power dynamics in food systems whereby large corporations drive the agenda at the expense of local communities and nature (see for e.g.

Blanchet, 2010; McCarthy et al., 2021 *forthcoming)*. Current narratives perpetuate the dominant imaginary of ever-growing 'food production, which at best under-values and at worst ignores natural, human and animal labour processes' (McCarthy et al., 2021 *forthcoming*).

Proposed solutions to the undeniable environmental and social costs of our globalised food production and consumption networks emphasise technocentric and efficiency-driven pathways to sustainability built upon a false dichotomy between humanity and nature to enable ever more commodification. They give agency to the dominant parties in food supply chains reinforcing their control over the sustainability agenda and labour processes.
These solutions are akin to what Latour would label 'modernist approaches' (Latour, 2012): they are constructed as part of a rationalist and scientific paradigm whereby natural systems are viewed as separate from socio-cultural systems and controllable. The proposed solutions are also constructed as innovative, new, and creative, but as discussed, they are instrumental versions of creativity that serve the current capitalist model supressing the impetus or possibilities of imagining something radically new and better. This highlights the depoliticised trajectory of our food systems, as it is presented as inescapable and unquestionable. The inevitability of the technoscientific futurity is embedded in our institutions, our economic systems, our policies, our funding priorities and our practices. In addition, these solutions are rooted in masculine notions and culture (Pullen and Rhodes, 2015), which value rationalist hard-science based solutions premised on control, objectivity, replication and rigour.

Whilst governments and organisations herald technology as the panacea and future of building sustainable food production, little consideration has been given to the 'dark side' of these advances. Literature outside of the academic sphere has explored the dystopian possibilities of a world mediated by technologies (e.g. George Orwell's '1984', Aldous Huxley's 'Brave New World', Hugh Howeys' 'Wool', 'Dust' and 'Shift' etc.), here we draw on Margaret Atwoods' speculative fiction novel 'Oryx and Crake'(2003) which provides an exploration of human nature, our relationship with animals and human selfishness. It does not deal with things 'we can't yet do or begin to do', and we consider Gabor's law which states that 'all that is technically feasible will be done eventually' (Ellul in Acquier and Rehn, 2019). In this novel, corporations and government interests are indistinguishable leading to a society under a 'corpocracy' (Appleton, 2011). Our superiority complex and desire to control nature for our own short-term benefits leads to disastrous apocalyptic type consequences. The text offers an exploration of scientific progress and its costs, it considers potential outcomes of genetic experiments and engineering. In a society where there are too many people and too few resources, we become obsessed with technological solutions rather than focusing on the man-made problems that create the issues such as pollution, eco-system interference, modifications of crops, animals and land leading ultimately to climate chaos. We see good intentions hijacked by competitiveness and greed and the short step from modifying animals for the greater good, to modifying humans. We see the potentials of technology explored with the creation of Pigoons, a pig-like animal designed 'to grow an assortment of fool proof human-tissue organs in a transgenic knockout pig host' (Atwood 2003: 25), and of ChickieNobs 'a large bulblike object that seemed to be covered with stippled whitish-yellow skin' (Atwood 2003: 237) that grew chicken parts. The focus remains steadfastly on the short-term benefits which are valued above

the long-term consequences that intervening with nature will inevitably have: "[Human Society] never learned, it made the same cretinous mistakes over and over, trading short-term gain for long-term pain" (Atwood 2003: 285). This future world mirrors ours, thus we argue later that we cannot safely predict the long-term outcomes of these bio-technological interventions or the dominance of technology and the creation of reliance on technology for food production.

To explore this further we present two illustrative examples among a myriad of pathways constructed as desirable to feed the population without challenging the dominant economic system or the consequences for the ecosystem. Here one can think of other examples beyond those we present in the next sections, including the long-term implications of the genetic modification of crops and animals or alternative meat production.

2.2 The future of farming in the dominant imaginary: the example of the 'smart farm'

Our first illustrative example is our visit to a 'smart farm' in the UK. These types of farms are already scaled-up realities in other countries e.g. Fairoaks Farms in the US (https://fofarms.com/) which has 40,000 herd of cattle or Saudi Arabia which houses 94,000 animals. The facility we visited, or "model farm" was fully dedicated to the automation and robotisation of dairy production. A visit to this "farm" reveals the extent to which the drive for increased efficiency can lead to the development of ever-more dehumanising technology. Robotic milking machines operate 24/7 and hence allow for cows to be milked "on-demand" therefore increasing the volume of production – robots do not rest. These machines also monitor the animals by capturing information about their health, condition, etc. at each visit. The cows live permanently indoors in order for the system to work, they have individual sand-based beds and limited human interaction. Small robots continuously slide through the alleys to remove accumulated slurry. The animals' diets are tested and monitored to increase yields and their food is also distributed through robots. The industrialisation of livestock production was apparent in the processes of robotic milking where the robotic milkers obscured the faces of the cows reducing them to udders. There is in fact very little to do with farming in this facility, rather it is a dairy factory. The relationship between human and animal, which is central to "traditional" farming practices is entirely removed as the farmers themselves are removed. The silence that reigns in the facility is heavy. The only sounds are those of the robots toing and froing in the alleys and of the cows turning on their sand beds. There is no mooing, no discussion. There is an overwhelming sense that this is a 'Big Brother' factory and the neatness of the operations feels mechanistic, sterilised and overall unnatural. As we see the organising of food production thus becomes a construct for technology.

This resonates with Atwoods tale of the ChickieNobs where we only see and finally cultivate that part of the animal which we deem necessary. 'The success of dystopias depends on familiarity' (Srinivas 1999). How far are we from the ChickieNobs adapting for growth rates that serve us, creating headless animals with "No need for added growth hormones…The high growth rate's built in. You get chicken breasts in two weeks, that's a three-week improvement on the most efficient low-light, high-density chicken farming operation so far devised. And the animal welfare freaks won't be able to say a word, because this thing feels no pain." (Atwood

2003: 237-238). Through the implementation of smart farming policies and practices as illustrated above, we are seeing a loss of 'traditional' ways of doing and knowing about farming and agriculture as it becomes corporatised. Smaller farmers and raw food producers are ever more marginalised, being pushed from the consumers' eye and being silenced in governmental and public agendas. For example, The UK Strategy for Agricultural Technologies (July 2013) states that 'The underlying goal is sustainable intensification of our agricultural sector […] agriculture needs to become more productive and efficient in the UK and in the rest of the world'. This reflects a focus on the hard sciences in informing Government policy, the commensurate removal of social aspect the ability to couch these advances within the safety of the sustainability rhetoric (Acquier and Rehn, 2019).

2.3 The future for biodiversity in the dominant imaginary: the example of the 'bumblebee'

Our next example is that of the bumblebee, which we deploy in an effort to caution against this collective optimism of technological progress as a collective answer to environmental breakdown, which allows us to deny our responsibility to nature (Hamilton 2015; Whitmee et al., 2015). Climate change is a direct cause of the demise of the bumble bee population and possible extinction. Studies suggest that populations 'have declined by 30% in the course of a single human generation' (Guardian, 2020) with whole populations disappearing in areas of intense global warming. Given the criticality of bees to our ecosystem this demise will include human demise. Rather than changing human behaviour, decreasing our level of consumption and waste generation, or trying to limit our dependence on energy, the further development of technical innovation is considered the most legitimate answer to environmental challenges, e.g. the use of technology for Bee Hives developed by companies such as APiSProtect and Beewise (Debusmann Jr, 2021) and the ongoing development of robotic bees (Klein 2017; Wyss Institute, 2021). The technology developed will monitor the conditions of the beehives as they face increasingly adverse conditions and robotic bees can be used to pollinate. However, both these mask the root problem, humans and illustrate a number of constraints to technofixes.

Firstly, ownership is determined by wealth. In normal conditions beehives need less monitoring which makes it an accessible activity and not overly labour intensive to most socio-economic demographics, real bees pollinate for free. Secondly, who decides what gets pollinated? Do we really know enough about the ecosystem to be certain these robotic bees cover all of the tasks that a bumblebees performs? Beyond conceptualising the 'worker bee', lets consider the 'bee as food', there is a bee-eater bird, crab-spiders, badgers, skunks, foxes, weasels, bears, mice and shrews which all incorporate bees in their diets. These are all part of our ecosystem, will we provide substitute food for these animals to make certain they continue to survive and thrive or be dominated by only investing? We ask why our solution to the decrease in the bee population is to control and recreate what nature gave us because we killed nature?

There are several reflections emanating from the technofix narrative presented above through our examples. We question the central assumption of technological determinism and 'the inescapable rise of technology' (Acquier and Rehn, 2019) that are central to the dominant imaginary of 'technology as salvation'. It is fundamental to consider the role of value and morals in defining the deterministic nature of technology. According the Habermas (in Bimber, 1990) and Ellul (1988, 1977, 1967, 1954), technology can only be conceived as 'autonomous

and deterministic' when our values become synonymous with efficiencies and productivity, when our practices and discourse become dominated by the drive toward these goals above all else and discussions on politics and ethics and alternatives are stripped away. We challenge the belief that technology is salvation (Asafu, Adjaye et al. 2015) in which Man's domination of nature will be complete (Hamilton 2015). In this reality it is possible to decouple human wellbeing from the emergence of nature, largely through technological substitutes, and human systems can be adapted for climate change (Hamilton, 2015; Asafu, Adjaye et al. 2015). The language of technology, technofixes and technoscience permeate our everyday life and social realities. It has become practically inescapable, and its critiques are accused of being anti-progress and proponents of the dark ages. The power dynamics at play in the sustaining and normalisation of 'technology as salvation' are clear and multiple stakeholders have vested interests in it, including corporations, governments and even research organisations. We are seeing the ways in which institutions and the policies that emanate from them are restricting the 'creative instances' and radical forms of imagination as put forward by Castoriadis, hence constraining the development of true alternative. Here one can take the example of how national research funding in higher education institutions has become increasingly tied with political and corporate agendas, with calls for funding defining specific research priorities, hence limiting the scope for different and paradigm challenging research. In the UK for example, the research funding agenda around sustainable food in the last decade has predominantly supported projects that explore technocentric pathways. Such developments, amongst others, contribute to this sense of inescapability of the technoscientific future and to the 'depoliticisation' of the question of the future of our food systems by making natural-science and tech-driven approaches perceived as the only possible route (Prem, 2021). In our current dominant imaginary where technology will save us, it therefore appears that Castoriadis' 'reflexanthrope' is alive and well in many spheres of society, including those that are seemingly dedicated to the generation of new ideas and new ways of doing. It has never felt more important and urgent to restore more radical forms of imagining and challenge the dominant imaginary, opening spaces for alternatives to emerge and for a sense of agency to be regained.

3. Another story: Finding meaningful alternatives through recontextualization, repoliticisation and rehumanisation

In attempt to reinstate the radical imagination in the field of sustainable food systems we argue for models and narratives based on recontextualisation, repoliticisation and relationality in order to challenge the dominant imaginary. We consider an alternative reality in contrast to the dominant natural science-led visions for the future of food systems, where human interference, techno-fixes and intensification currently take centre-stage. In line with Castoriadis' concept of the imagination and radical imagining, we explore the vocabularies and ideas that can help us envision our food systems and their relationship to technology differently. We surface alternative values and imagine the transformations that must take place in the spaces of food journeys from farm to fork or seed to soul.

The first foundational principle of our reimagining is recontextualization, in that we recognise that human health cannot be understood independently of the health of the ecosystems, and that food production and consumption is deeply rooted in space and place. This is notably in line with thinking about health as an ecological concept, involving interdisciplinary conversations between health and ecological sciences as well as the social sciences and humanities in recognition that 'the sustainability of human civilizations in the Anthropocene requires a powerful interdisciplinary imagination' (Mallee, 2017: 31). Furthermore, to move beyond a sustainability agenda driven by the vested interests of a few, we contend that it is fundamental to reaffirm the socio-cultural nature (Maida, 2007) of the transition towards sustainable food systems and promote currently marginal alternative narratives of food production premised on flourishing and nourishing for us and the environment. Our food system requires a transition i.e. civilizational and ecological transformations and require an integrative approach to transition as the capacity of human societies to transform, adapt and respond to an environmentally and climate-changed society. Recontextualising would imply moving beyond the one-size fits all approach that the technofix narrative and dominant imaginary have promised, and reconnecting with values of seasonality, diversity, localism and temporality. Here we advocate for food systems that work with what is natural to the local context. Rather than offering uniform solutions, transitions are powerful responses that are grounded on this intense interconnectivity and deliver specific answers to questions emerging in real world contexts (DeLoughrey et al. 2016, Ottinger et al. 2011). Unlike global top-down environmental solutions (such as intergovernmental climate agreements), transitions involve multiple actors, at different levels, scales and geographical contexts (Dryzek 2013, Escobar 2015). Transitions are always more than local and less than global. Thus, diversity is key as it involves multiple human and multiple nonhuman actors from varied backgrounds and addresses problems in different locales and settings (DeLoughrey et al. 2016, de la Bellacasa 2017). Diversity is not only a value creating dimension of transitions but also an inherent value of ecological relationality (Sarkar 2005). Diverse transitions constitute a powerful pathway for applying the paradigmatic shift of the ecological approach to the multiple socio-environmental challenges that our societies are facing, and in particular those related to food systems. A diversity and recontextualised perspective on transitions implies a renewed understanding of technology, beyond our dominant 'instrumentalistic tendencies of global techonologization' (Adiwijaya and Rizky, 2018) where technology is modernism and equates to the tools developed through the practical utilisation of science (Hodgkin, 1990). In reconnecting to the root terminology of technology as *techne*, we can reassert its meaning as art and craft, the 'making of good things' (Hodgkin, 1990: 208) through an intricate relationship between knowledge and practice. Technology in this view therefore is not solely a means to an end but encompasses diverse ways of doing and knowing. Within the realm of sustainable food studies, one can think of the concept of 'foodshed', which enables a critical interrogation of the provenance of our food and its relationship to space and place (Kloppenburg, et al. 1996; Ackerman-Leist, 2013). In challenging the dominant imaginary, mobilising the 'foodshed' narrative can provide a 'frame for action as well as thought' in recontextualising our relationship to food and its craft: 'a place for us to ground ourselves in the biological and social realities of living on the land and from the land in a place that we can call home, a place to which we are or can become native' (Kloppenburg, et al. 1996).

The second foundational principle is repoliticisation. We are not advocating for another imaginary to dominate but instead we want to create space for alternative imaginaries to co-exist, and for the trajectory of food systems to become an issue of contention once again (Prem, 2021). As argued earlier, we have witnessed the emergence of the 'reflexanthrope' and as such a loss of individual and collective agency in the imagining and instituting of our food systems as the powerful elites exert their dominance. Rarely do the food and agriculture agendas become the focal point of meaningful political engagement, and when they have been in recent years (i.e. Brexit and farming) the conversation was hijacked for the pursuit of populist motives (see Jones-Garcia and Touboulic, *forthcoming*). By repoliticisation here we connect with the thoughts of Castoriadis on 'positive freedom' (Papadimitropoulos, 2018) and the reassertion of individual and collective autonomy through the exercise of choice, deliberation and political engagement on the question of food systems. How can we, as a collective and as individuals in society, move away from our current apathetic approach to the future of our food systems and the place of technology? There exist pockets of alternative food system approaches but the mainstream in 'Western' society is too comfortable for these to be given the due attention they deserve. Many alternative ways of producing food in harmony with nature are already applied by farmers, and championed by activist groups as well as researchers, yet their voices on the future of food systems remain marginalised, and consumers are increasingly disconnected from the raw production of food. Repoliticising entails re-embedding the question of the future of our food systems and the place of technology into the public space, exposing the realities and implications of the dominant imaginary to allow for an emotional reconnection with these issues on the one hand, and for the emergence of different framings of the issues on the other (Prem, 2021). Repoliticisation can be conceived as akin to activism, and we would argue that there is a critical place for the arts in this endeavour. In fact, there exist several examples where the arts, and especially theatre, are mobilised for political and ecological activism (see for e.g. Chaudhuri and Enelow, 2013). The 2019 exhibition 'FOOD: Bigger than the Plate' at the London V&A took the public through the different stages of the food chain, from compost to farming, trading and finally eating, raising questions regarding our collective choices for a more sustainable and just future. When it comes to re-framing, one could see value in promoting the feminist notions of justice, affect, care, lived experiences and compassion (Pullen and Rhodes, 2015) in our discourse of technology and food, because it naturally leads to considering human and non-human labour, including the ecosystem, and enables surpassing our view of technology as control to surface questions such as what would equitable and caring food production technologies look like?

This leads to our final foundational principle: relationality. We recognise that sustainable transitions must be embedded in the socio-cultural, especially in communities and local practices, and that 'relationality' must be a central tenet to research and practice promoting sustainability. 'Relationality' acknowledges all interconnections in social reality, including relationships with the more than human world (Bradbury and Divecha, 2020). 'Relationality' challenges the dominant narrative of the technoscientific future for our food systems because it breaks away from the false dichotomy between humanity and nature, and ecomodernist conceptualisations of technology as salvation (Hamilton, 2015). A relational approach would

see the promotion of alternative food stories, where raw food production is done in harmony with the more-than-human, as these constitute a relational form of cultural expressions, testimonies of human experiences and embodiments of reflexive practice, that are crafted and shared by and within communities. In advocating for relationality, we celebrate that the human experience of food is anchored in values of conviviality. Reconnecting with our food (hi)stories is central to facilitating transitions. Once again there is a place for the arts in this endeavour. Like De Cock et al. (2021), we see value in a restitution of the past, not as utopian nostalgia but as a way to disrupt the 'experiences of the present', and perhaps reconnect with values that once were, such as collectivism, slowness and sufficiency. In searching for inspiration in how these values can become embedded in our conceptualisation of technology and food systems, one can turn to scholarly work on degrowth and technological change (see for e.g. Pansera and Owen, 2018; Pansera and Fressoli, 2021). For example, Pansera and Fressoli (2021) propose the notion of 'convivial technologies' as an alternative, breaking away from a view of technology anchored in determinism and productivism, which exhibits five core dimensions: relatedness, accessibility, adaptability, bio-interaction and appropriateness. Other inspirational work specifically related to the promotion of similar alternative values in the space of food production includes writings and activism on small-scale farming and agrarianism (see here Smaje, 2020).

Foregrounding these principles in our work as scholars-activists (Touboulic and McCarthy, 2019) is fundamental to bridge our espoused and lived values, and actively engage in the re-imagining process. Yet the extent of the task in hand is complex, large-scale, and long-term, hence requiring the mobilisation of the collective. We provide an esquisse of what this may entail in the following concluding section.

Concluding thoughts

As we finalise this essay, we can see it as a form of thought experiment, raising more questions than it provides answers and as such hopefully stimulating the imagination. Essentially, we are left pondering on the following: how do we, as a society, imagine better? What is the role of researchers, citizens, activists, managers, politicians and policymakers within this process? We have a strong sense of what 'better' means for us: it is about ecological and social harmony and justice. We consider that technology can play a role within this but spaces for critique and alternatives must be maintained, and the very meaning and practice of technology needs to remain open, allowing for the promotion of alternative values. In the same way that 'better' may have various meanings, so does technology. This work in part stems from reflections developed through our journey as academics in the space of sustainable food production and consumption and we would hope that it will spark conversations within and beyond the academic sphere (Touboulic and McCarthy, 2019). We hope to spark grassroots activism and transitions to sustainable foodscapes through collaboration. Re-imagining as a collective endeavour is a process of change and it will require the mobilisation and legitimisation of new narratives. This will not be possible without forming alliances and engaging in political struggles to challenge the dominant. Many fruitful avenues come to mind. It is important to create and maintain spaces for researchers, citizens and activists to come together to engage in

the task of re-envisioning. The form that this may take will depend on the nature of the problem under exploration and being re-imagined, but could involve storytelling, participatory drawing, or spatial experiments. Leveraging connections within the political and policy spheres will also be key, and here lessons can be taken from social movements (Escobar 1992, 2015) in exploring what the realisation of social change entails. It may be somewhat ironic to write as the concluding sentence to an academic journal article, but above all, we see that the critical first step is for us as researchers to become better at engaging beyond our usual circles and seize the opportunities that may arise to do so.

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