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INTRODUCTION

Scaling Perspectives on Grand Challenges in Management and Organization Studies

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Abstract

In this introduction to the special issue of M@n@gement for the 30th anniversary of the AIMS, dedicated to complex societal problems, we examine issues of scale and non-scalability, inspired by Tsing's work and recent calls for an ethics of care and responsiveness, thus highlighting the need to develop more care and relationality in the study of complex problems and grand challenges. This means questioning scale, recognizing the agency and value of human and nonhuman beings, prioritizing local knowledge, mutual respect, solidarity and coexistence.

Keywords: *grand challenges*; *complex problems*; *sustainability*; *scale*; *non-scalability*; *social orders*

The world seems to suffer from gigantism. Factories have recently become megafactories. Ships have become mega-container ships Farms have become megafarms. And now trucks have become megatrucks. In parallel with this trend toward gigantism, international problems have become 'grand challenges'. In all cases, the insistence on size, the changes in scale, and the use of superlatives seek to attract attention and shape the imagination.

Thinking about scale is at the heart of grand challenges for several reasons (Dittrich, 2022). This specific framing as 'grand' (rather than wicked, sticky, or simply complex) is not coincidental, as the United Nations used the label in 2015 to support its worldwide policies while updating the 2000 Millennium Development Goals into the 2015 Sustainable Development Goals – that is, complex global social problems such as inequalities and biodiversity losses. The very definition of grand challenges implies scale as grand challenges describe large-scale, systemic, interconnected, and interdependent, uncertain and unresolved societal problems that require joint efforts of public and private actors and novel multi-scalar organizational arrangements to be solved (Ferraro et al., 2015; George et al., 2016; Gümüsay et al., 2022). However, in this definition, scale is both taken-for-granted, socially constructed, and simultaneously considered in different manners (Dittrich, 2022). Grand challenges inherently involve complex and non-linear natural-social processes (i.e., looking at ecosystem or global scales), multiple organizations and actors (i.e., looking at different players, levels, and spaces of action), different drivers and tipping points (i.e., interconnectedness of scales), and a constructed, relational, and evaluative dimension (i.e., dependence of the construction of problems on the point of view taken). This means that local and global scales, for instance, may not be equally fixed or valued, depending on the perspective.

From a productive perspective, since the end of the 19th century onwards, Western economies and companies have developed by gradually increasing their scale of activity, that is, how much they produce. The growth of communication and transportation networks, such as roads, railroads, and shipping routes, followed by long-distance communication with the telegraph and telephone, made it possible to reach markets much larger than the initial local ones. They also enabled a change in scale from national to international markets. Chandler (1990) describes this movement as the advent of industrial capitalism and the transition from the owner-managed businesses to the 20th century large managerial corporation. In many activities, this growth dynamic created economies of scale that made it possible to move from an economy of scarcity to one providing goods and then services at lower cost to an ever-increasing number of consumers. Economies of scale required the coordination of a large number of skilled people and the integration of huge amounts of tangible assets

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to take advantage of these economies. Organizations have consequently adapted to these dynamics by modifying their organizational structures (Chandler, 1962) or by setting up new organizational forms, such as multinationals, as geographical scale increased.

With greater scale also came greater issues for coordinating and managing action. On one side, international companies benefited from global markets and information flows because of their presence in multiple locations. But on the other side, they had to adapt their structure and respond to local needs in order to reap the (economic) benefits of their size. For decades, therefore, these efficiency gains have had positive effects on financial performance, but also negative effects associated with an economy based on the ever-increasing extraction of raw materials, the exploitation of resources and labor in non-western countries, the accumulation of waste of all kinds, the overconsumption of products and services, and the massive release of (sometimes eternal) chemical molecules into the atmosphere and the natural environment and their impacts on health.

Considering both the positive and negative effects associated with scaling up is at the core of many works in organization, entrepreneurship, strategy, and innovation studies, which have started to call for the development of more 'inclusive', 'sustainable', 'regenerative', 'responsible' or 'alternative' organizing, strategizing, and innovating (see among others, George et al., 2012; Pereira et al., 2021; Voegtlin et al., 2022). While distinct, these concepts have often been developed to address the so-called grand challenges.

Nevertheless, the issue of scale in grand challenges requires a more comprehensive reassessment of the boundary conditions that guide current theories, addressing not only contextual and initial conditions for innovation, but also fundamental questions about organizational structure, production, and the distribution of benefits (George et al., 2012). For example, who engages in more inclusive or responsible innovation: large firms, small firms, alternative organizations, or even states (Mazzucato, 2013)? Is the search for scale always the answer? And, if not, what are the alternatives, and can and should they become dominant? It seems that the messages about the scaling up of organizations and their activities are still contradictory.

On the one hand, start-ups, including transformative ones, are valued for the scalability they promise to investors. The potential change in scale allows revenues to increase at low marginal cost, thereby reducing variable costs and containing fixed costs (Rayport et al., 2023). For example, a start-up that develops a platform business model can acquire new customers at no additional (visible) cost. In general, the platform business models that have proliferated in the 21st century take full advantage of this scalability mechanism and benefit from positive externalities (Lecocq et al., 2023). In this view, scalability may not only be praised by the investors and financial markets, but also be (implicitly or explicitly) seen as a solution for tackling grand challenges. However, platform business models can actually amplify inequalities and use exploitative labor, as demonstrated by Amazon. Moreover, start-up failures are widespread (Romme et al., 2023), underscoring that size and scale remain a recurring paradox (George et al., 2012). Some small entrepreneurial firms – for instance, often driven by ambitious, tenacious social entrepreneurs – may have the motivation to develop and implement ideas for inclusive or responsible innovation. However, these companies typically lack the resources needed to scale up their innovation efforts. In contrast, large multinational corporations that have the resources needed to develop and implement inclusive or responsible innovations, often lack the motivation to do so. This paradox also raises the question of the optimal interplay between large and small companies in driving innovation, which may require new business models and different forms of relationships with governments, non-governmental organizations, communities, and societies to resolve (Mazzucato, 2013; Pereira et al., 2021).

On the other hand, while some promote scale as a solution, transformations and calls for a more sufficient, degrowth or post-growth economy are developing (Escobar, 2015; Hickel, 2020; Johnsen et al., 2017; Mastini et al., 2021; Pansera & Fressoli, 2021). Tsing (2021) even proposes a theory of non-scalability. As Tsing (2021) shows, colonial modernity relied on or even invented scalability with its model of plantations based on slavery. Today, scaling up borrows from this very colonial history and ideology, and inherently relies on and reinforces societal problems rather than solving them. We therefore urgently need to counter scalability with non-scalability. The interaction loops within economic systems and cycles need to be reduced and shortened, for example, by promoting short circuits, microcredit institutions, and localism (Aggeri et al., 2023). In addition to shortening interaction loops, activity can move toward sufficiency by reducing the speed of activities (travel, exchange) (Illich, 2021 [1973]), as seen in the slow fashion, slow food, and slow research movements, as called for in this very journal (Berkowitz & Delacour, 2020). Others, sometimes critical of deceleration and slow movements as simply a new iteration of capitalism, rather call for rethinking organizations and social relations to find resonance in our relationships with the world (Rosa, 2010, 2019), in search of 'buen vivir' (Gudynas, 2011). In these alternatives, the idea remains that we need to greatly reduce the scale of our activity.

This question of the scale of activity echoes the forgotten book by the Austrian author Leopold Kohr, *The Breakdown of Nations* (1957). Kohr's ambition was 'to develop a single theory by which not only some but all phenomena of the social universe can be reduced to a common denominator' (Kohr, 1957, p. 13). His thesis can be summarized as follows: when a problem arises, it is generally due to a question of size, or more precisely,

uncontrolled, excessive, and unmanageable size. For Kohr (1957), the increase in the scale of problems (e.g., hunger, burnout, biodiversity loss) is the problem, not the hunger, burnout, or loss of biodiversity itself:

> And so it is with the social diseases of our age. It is not poverty that is our problem. It is the vast spread of poverty that is the problem. It is not unemployment but the dimension of modern unemployment which is the scandal; not hunger but the terrifying number afflicted by it; not depression but its world encircling magnitude; not war but the atomic scale of war. In other words, the real problem of our time is not material but dimensional. It is one of scale, one of proportions, one of size, not a problem of any particular kind. (Kohr, acceptance speech, 1983)

As a result, Kohr praised smallness, small communities rather than large units centrally governed by the state. He argues that solutions cannot be found in even larger units, which will only exacerbate problems. Smallness makes problems manageable, simply by changing the scale. Illich (1921 [1973]) is not far off when he argues that beyond a certain threshold of growth, human tools and institutions escape the individual partly because of their size. Note that this scale argument differs from a purely Malthusian position, whose overpopulation argument has already been largely deconstructed. For example, it has been shown in fisheries that global demand, innovation, and technology, among others, drive fish overconsumption, not human population size (Finkbeiner et al., 2017). Indeed, small populations with large-scale extraction capacities and exploitative relationships to the world have much more detrimental effects on natural ecosystems than large populations with little extraction capacities or symbiotic relationships to the world. Of course, Kohr's smallness argument needs some refining. He himself nuances it by implicitly linking smallness to organization: 'Even a union can manage the problems of scale as long as its divided subordinate units are equally (or even unequally) small' (Kohr, acceptance speech, 1983).

So, are issues of scale really just issues of organization? If we go back to megafactories, mega-container ships, megafarms, and megatrucks, they involve specific organizations and organizing processes. Global value chains, global organizations, meta-organizations and meta–meta-organizations, large-scale technologies, worldwide regulations (or lack thereof) and norms, global slavery and exploitation of the human and non-human living and non-living beings, global consumption and demand drive these developments. One could even argue, following Mumford argument of the megamachine (see Chaudet, 2020; Mumford, 1973–1974, 2016 [1934]), that a specific organization of society was needed to enable the very emergence of such monsters. This preparation and readiness of social orders prefigure the emergence of industrial tools and technologies, what Mumford calls megamachines. Megamachines are precisely the prefiguration of the machines, or the invisible organization of society that makes possible the emergence of visible machines (Chaudet, 2020). The Industrial Revolution, for example, was possible in Western countries because social orders were first profoundly transformed before the emergence of new industrial and production orders.

If we follow this idea of the preparation and readiness of social orders, we can further argue that it is the very megamachine that creates issues of scale. The preparation and readiness of social orders allow uncontrolled growth. They create both the conditions for the emergence of grand challenges as societal problems, as well as the conditions for proposed answers to these problems (e.g., technological solutionism, overexploitation), including alternatives. In this perspective, causal relations are in reverse order. Thus, while some scholars argue that globalization processes change social orders, it might be interesting to think about it the other way around. Changes in social orders create conditions for globalization transformations. Scale does not create problems of social orders, but changes in social orders create the possibilities for problems of scale.

This means that we must reassess our perspective on change and challenge the very notion that 'scaling up should always be the goal' (Benjamin, 2002, p. 19, as cited in Sele et al., 2024). Social orders are what we need to transform if we want to tackle grand challenges. In a certain way, this has been the objective of many communities, from transition studies (Berkowitz & Bor, 2024; Geels, 2005; Schot & Kanger, 2018), to the social and solidarity economy studies (Petrella et al., 2023; Richez-Battesti et al., 2012), and alternative organizations in general (Barin Cruz et al., 2017; Barros & Rose, 2023; Biwolé-Fouda & Etogo, 2024; Varman & Vijay, 2022; Vijay et al., 2023; Zanoni, 2020 among many others). All of these works are trying to address issues of scale, in one way or another.

Organizing for and with issues of scale

What do we bring to these multifaceted and rich approaches? With this special issue, we seek to add to the work of Dittrich (2022) and shed light on how scale matters differently for thinking about and addressing grand challenges in management and organization studies. For most management and organization scholars who generally work at small scales, the reference to grand challenges is a challenge in itself, even if local and large scales are always intertwined (Dittrich, 2022). Numerous management and organization scholars traditionally focus on organizational or intra- and inter-organizational phenomena. They do not propose major public policies or macroeconomic reforms that change society, as economists can do. They do not (or rarely) propose social reforms as sociologists can do. Because they do not address national governments or public administration, management, and organization scholars rarely occupy the media stage. Their work is used much less by public policy makers, than the work of private consulting firms, although we may find this regrettable. The impact of management and

organization scholars is, at best, a reflection of the scale of their work: very local and ultimately trivial, even if this triviality is not the prerogative of management science alone (Haley, 2023). However, one could argue the other way around, that management education is to blame for the current polycrises. The triviality likely stems from the commodification of higher education and research, the incentives we have built, and the way we have organized our research ecosystem, to incentivize few societal benefits. Moreover, the grand challenges display the risks to be considered as a new fashion enabling scholars to publish (Carton et al., 2024), to be manipulated by private actors to legitimize their practices, or simply to be inconsistent (Gariel & Bartel-Radic, 2024, this issue). Apart from these limitations, all the papers in this special issue suggest how management and organization studies may help decision makers tackle wicked problems that are complex, uncertain, interconnected, and require collaboration between multiple stakeholders at different levels with different criteria (Ferraro et al., 2015).

The first article by Philippe Coulombel and Andrew Barron deals with an urban transport problem. It analyzes how numerous and diverse public bodies, civil representatives, and private companies participate in a collaborative action to try to solve a congestion problem around an airport. Their work combines two theoretical perspectives in an original way. The first is meta-organization theory, which has already been proposed for the study of grand challenges (e.g., Berkowitz & Grothe-Hammer, 2022). This organizational form has several advantages compared to public bodies or aggregations of private interests. It gathers multiple competencies and favors consensus-based decision-making and the acceptance of solutions. The second theoretical perspective is imprinting theory, which argues that an organization retains some characteristics of the environment or of the period, or both, in which it was created (Simsek et al., 2015). Their research design makes an original contribution by comparing the structural characteristics and norms of a first meta-organization with a second one considered as a spin-off of the first. In addition to confirming the interest of meta-organizations for designing multi-stakeholder collaborative processes to address grand challenges at the local level, their research makes a theoretical contribution to the literature by highlighting the dynamics that lead to the emergence of a new meta-organization. They also show how a child meta-organization retains some features of the first one (inheritance), but establishes new ones. Their research opens the door to imagining a sequence of meta-organizations that are established to successively solve multiple social problems and in parallel, ensure a fluid engagement of different actors (Gümüsay et al., 2022).

The second article, co-authored by Louise Taupin, Pascal Le Masson and Blanche Segrestin, examines the ability of a deep-tech start-up to deliver on its promise to address the grand challenge of sustainable food systems, shedding new light on the concept of scale-up. Drawing on the literature on business models and design theory, and using a case study of a deep-tech start-up in urban agriculture, the authors propose an answer that defies a simple solution (Taupin et al., 2024). Indeed, deep-tech start-ups are faced with numerous unknowns that force them to reconstruct their connection between past, present, and future. It is therefore a matter of conceptualizing scale-up as a phase of constructing the company's creation heritage (Hatchuel et al., 2019), defined as the preservation of rules during the company's innovation efforts that contribute to its continuous development by ensuring better generativity and providing design efforts on the unknowns related to solving the grand challenge. This article develops a new approach to scale-up, no longer just conceptual but also as an epistemological framework (Dittrich, 2022) that practitioners use in their practice to develop new modalities of value creation in response to grand challenges. From this perspective, the authors suggest how axiomatic design tools can generate insights that cannot be gleaned from other sources of data, and how the role of academics combining teaching and research can be a promising avenue for making an impact beyond the scientific community.

In the third paper, Mireille Mercier-Roy and Chantale Mailhot develop an approach that emphasizes a different aspect of scale in addressing grand challenges. Rather than calling for a top-down approach as is often the case in organizational responses to such complex socio-environmental problems, the authors shift the focus to 'encounters', in their case encounters between human and nonhuman inhabitants of an urban park in Montréal. In line with recent work across a range of disciplines that draws attention to human and nonhuman interactions and how they reshape our everyday environments (Arregui, 2023; Brugidou & Clouette, 2018; Despret, 2019), the authors recast grand challenges as moments of encounter rather than predefined problems. In doing so, they emphasize the need for constant reconfiguration and acknowledge the dynamic nature of organizations. This paper also criticizes the dichotomy in conventional approaches that distinguish between humans and their 'environment' (more deeply connected to the nature-culture debate). They advocate the development of what they call a 'compositionist approach', that recognizes and embraces diversity, the multiplicity of voices but also the entanglement of humans and nonhumans, and how these interactions contribute to the word-making processes or modeling of our worlds.

This shift provides the basis for a new and original understanding of grand challenges. With this more bottom-up approach, decision-making processes and local controversies emerge as significant sites for intervention. Additionally, by taking inspiration from post-humanist studies, the paper emphasizes the very agency of nonhumans in world-making (see also Taupin, 2019). And by integrating pragmatist principles, the authors develop a framework for action attending to the highly

unpredictable, complex, uncertain, and multi-scale nature of these challenges: they particularly emphasize the importance of context-specific approaches rather than universal, scalable solutions.

To conclude this special issue, Corentin Gariel and Anne Bartel-Radic examine, in their theoretical article, the contradiction of the widespread adoption of the concept of grand challenges in management research despite substantial criticism. Celebrated at first, the concept is now under scrutiny for its validity. Using a mixed bibliometric approach to analyze 230 publications, the authors identify four main intellectual foundations dominated by neo-institutional theory and qualitative methods. In addition, they identify seven distinct academic discussions within management studies related to grand challenges and categorize them into three groups based on their theoretical coherence, thematic focus, and disciplinary orientation. Based on their analysis, they suggest further refining the definition of grand challenges to emphasize long-term, globally interdependent problems rather than mere ambitions. They also highlight specific areas, such as robust action, commons, and meta-organizations, where further research is needed.

Grand challenges, social orders, and scale: What next?

Studying scales in grand challenges, especially in relation to organizations, humans, and nonhumans, is itself challenging, on so many levels (Dittrich, 2022). As we know, the sheer complexity and interconnectedness of so-called grand challenges or complex socio-environmental problems transcend traditional disciplinary, organizational, sectoral, or even domain boundaries and levels, requiring different approaches, but also broadening our gaze toward geography, anthropology, sociology, etc. (Arregui, 2023; Carton et al., 2024; Chatterjee et al., 2023; Despret, 2019; Gehman et al., 2022; Gümüsay et al., 2022; Massarella et al., 2021). Tackling the issue of scale also requires a shift from human-centric (and growth-centric, performance-centric) perspectives to more inclusive approaches that recognize the importance, agency, and impacts of nonhumans (Arregui, 2023; Berkowitz, 2023; Berkowitz et al., 2019; Brugidou & Clouette, 2018; Demil et al., 2024; Komi & Kröger, 2023; Massarella et al., 2021; Mercier-Roy & Mailhot, 2024, in this issue; Taupin, 2019).

Small, non-scalable is beautiful

We know that management and organization studies are fond of fads and fashions (Abrahamson, 1991). Are 'grand challenges' just the latest fad (Carton et al., 2024), after a long list of other concepts, from wicked problems to meta-problems (Gariel & Bartel-Radic, 2024, this issue)? One can wonder and feel concerned, especially if we collectively (as societies and as academic communities) do not take seriously what is happening at the ecological level of our planet, in its natural ecosystems and processes (Acquier et al., 2024; Berkowitz, 2023; Whiteman et al., 2013). There is already a risk that we will simply continue with business as usual, under novel concepts. Already, companies are seeking to become 'regenerative', after having made the 'business case' for being green. We continue to look for growth opportunities, now in the oceans for instance (Berkowitz, 2023). This happens because we have not confronted the megamachines behind the grand challenges, the invisible social orders that enable both problems and solutions. Without challenging our megamachines, the very organization of social orders, we cannot hope to counteract the effects of acceleration and flight forward that Rosa (2010) describes as characterizing modernity.

Starting with Kohr's (1957) call for smallness, and drawing on Tsing (2021) theory of non-scalability, we also argue for an 'antidote' consisting of imagining a multiplicity of non-scalable alternatives that are situated and transformative. In this, we join recent work calling for alternative imaginaries (Varman & Vijay, 2022) and pluriversal worlds (Castro-Sotomayor & Minoia, 2023; Kothari et al., 2019). This is not to say that we should not encourage learning and dissemination of practices, or that we should discourage meta-organizing at the global level. Transnational movements have demonstrated the value and importance of global solidarity and global organizing (Santos, 2006). What it does mean is that dependencies and relationships between humans and nonhumans, living and nonliving, must first be local, or as small as possible for their first unit of relationship, as Kohr (1957, 1983) puts it, or as Mercier-Roy and Mailhot (2024, this issue) show.

Different directions and approaches

In addition to the challenge of scale and the issue of scalability, we believe it would be fruitful for management and organization studies interested in studying grand challenges and alternative approaches (broadly defined) to draw on Tsing's (2012) concept of 'friction' and to explore the multiple and rich ways in which different human and nonhuman entities, organizations, and processes interact and rub within specific contexts.

Friction, in Tsing's work, refers to the unexpected encounters, conflicts, controversies, and dissonance that arise when different perspectives, entities, beings, and nonbeings come into contact with each other, as we can observe in Mercier-Roy and Mailhot (2024, this issue). Friction could be used both as a methodological and conceptual tool to analyze how attempts at scalability (in innovation, strategy, etc.) may encounter resistance or unforeseen challenges due to the complexity of local contexts and the agency of nonhuman actors. Friction can also be used as an epistemological tool to explore how management and organization studies, in encountering, collaborating with and rubbing against other disciplines, can dismantle the

scalability hypothesis so deeply embedded in our economic and political paradigms, individual and collective imaginaries, and societal unconscious, ness and in so doing, help produce alternative, situated knowledge about plural organizations and organizing.

The spatial turn in management and organization studies (see among others, Coenen et al., 2012; Leclair, 2023) precisely highlights the importance of places, territories, atmospheres and contextual embeddedness for understanding organizations but also for further informing non-scalability (see also Coulombel & Barron, 2024, this issue). In addition to works on the situated nature of knowledge production (Lam et al., 2020; Spivak, 1986; Vijay, 2023), management and organization scholars can help challenge the status quo by further exploring the ways in which local conditions shape the possibilities for (non) scalability and highlighting the role of nonhumans in shaping these contexts. Given that non-scalability emerges from the plurality of actors and perspectives involved in any given system or situation, instead of seeking universal or standardized solutions, along with the generalizability and transferability of findings, management and organization studies can, on the contrary, embrace the multiplicity, contingency, complexity, and unpredictability of organizations and contexts. Therefore, the very attempt to scale innovations, solutions, or academic findings can often overlook the unique characteristics and needs of both humans and nonhumans, resulting in unintended consequences or failures.

Beyond problem analysis, methodologies such as participatory science, research action, and inductive or abductive research can provide novel insights as grand challenges do not have obvious solutions and clear answers (Eisenhardt et al., 2016). These methodologies can help not only explore novel, unique ideas or solutions, understand the specificities of local contexts, but also shift our work as scholars toward more engagement (see engaged scholarship, Berkowitz & Delacour, 2020) and potentially focus more on the 'how' question, that is, how fair and sustainable models can be designed, and be implemented (Guérineau et al., 2023). Engaging with complex socio-environmental problems would also benefit from the use and development of original ways of writing and analyzing organizations, such as the refreshing work of Mercier-Roy and Mailhot (2024, this issue). Their use of interludes, transformative storytelling, and more generally alternative narrative styles allows for a subtle engagement with grand challenges on different scales. Developing different writing, showing, and telling approaches may also encourage readers not only to decelerate, consider different perspectives, and find more 'resonance' (Rosa, 2019), but also to reflect on their own everyday encounters with Others. Ultimately, the idea is to foster a diverse and rich reconceptualization of academic writing and research as tools for political engagement and social change.

Conclusion

In this introduction to this special issue, we have examined issues of scale and non-scalability, inspired by Tsing's work and recent calls for an ethics of care and responsiveness, thus highlighting the need to develop more care and relationality in the study of complex problems and grand challenges (Beacham, 2018; Benschop, 2021; Böhm et al., 2022; Jeffrey & Thorpe, 2024; Mercier-Roy & Mailhot, 2024; Vijay et al., 2023; Vijay & Monin, 2018). This means questioning scale, recognizing the agency and value of human and nonhuman beings, prioritizing local knowledge, mutual respect, solidarity, and coexistence.

To tackle grand challenges, a reduced scale gives actors back control over the tools, that is, everything that conditions production, such as organizations, institutions, and technological tools (Illich, 2021 [1973]), instead of being subjected to them. Following Illich, our argument is both ethical – because it involves giving back freedom to actors by not replacing their skills with tools, but using tools when they increase their skills – and political, because it involves changing social orders in order to produce well-being felt by human and nonhuman beings at a time of decoupling between economic growth and well-being. To illustrate this argument, Illich (2021 [1973]), in a study of transportation with Dupuy, shows that despite technical progress in modes of transportation, individuals still end up traveling at the speed of a bicycle. They point out that cycling has two main advantages. It allows individuals to make repairs (which gives them control over the tool) and it does not commit them to paths they must follow (which gives them freedom of action in relation to social orders). Another related argument discussed by Illich concerns what might be called diseconomies of scale or counterproductive effects, that is, the fact that beyond a certain threshold in terms of size, there are more negative than positive effects, as Coase (1937) argued about organizations. This last argument nuances the promotion of small scale *per se* by emphasizing that it is not just a question of size, but often a threshold beyond which activities escape the control of the majority.

Far from being a limitation, non-scalability offers opportunities for more ethical and sustainable ways of engaging with complex socio-environmental problems and systems. This may mean developing new research methodologies that are attuned to pluriversal perspectives (Mercier-Roy & Mailhot, 2024, this issue) and the frictions between them that non-scalability creates. This may also mean being more critical of concepts and terms used in management and organization studies (Gariel & Bartel-Radic, 2024, this issue). The term 'grand challenges' as it is employed may lead to accepting conditions of suffering (nonhuman and human exploitation, growing inequalities) rather than challenging them and rejecting them. Innovation studies, entrepreneurship studies, management, and organization studies fall prey to the

underlying, implicit acceptance of injustices when they unquestioningly embrace this term or other qualifiers like 'regenerative', 'green', 'blue', 'gray', and so on, without criticizing the global production and consumption system. To effectively 'tackle grand challenges', an expression that is so widely used it loses significance, we must confront and transform social orders and our megamachines. Ultimately, this requires the abolition of privileges and the dismantling of the economic system of exploitation, while fostering complementary and symbiotic relationships between (human and nonhuman) beings.

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