

ORIGINAL RESEARCH ARTICLE

Collective Action for a Multispecies World: A Compositionist Approach to Grand Challenges

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Abstract

As the field of management studies widens its scale of reflection to consider the socio-ecological ecosystems of which organizations are part, more attention is devoted to grand challenges. While extant literature generally treats them as exogenous objects, our focus here is on unfolding encounters with grand challenges. We conceive grand challenges as concrete problems of arbitration of more-than-human ways of life, where the managerial practices of organizations enact and transform grand challenges. We put forward a posthumanism and pragmatist style of thinking, which, we argue, can help us think with grand challenges and engage in creative ways of composing a common world. Through the story of a problematic situation where tangles of grand challenges abound, we offer a mode of construction that can help us compose what is, in a given situation, a 'better' world. This mode of construction is based on three sets of practices, namely, *slowing down*, *multispecies world-making*, and *being present and grieving losses*. It facilitates the emergence of new ways of composing the world, helps account for the implication of other species, and foregrounds the elaboration of worlds in a response-able way. Our paper contributes to the grand challenges literature by proposing a mode of attention and action that engages both management researchers and practitioners in the work of constructing multispecies worlds.

Keywords: *Posthumanism; Grand challenges; Pragmatism; Controversies; Multispecies organization studies*

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Organizations encounter social and environmental crises in increasingly frequent and troubled situations: forest fires made more devastating than ever by climate change paralyze and destroy entire regions, war in Ukraine coupled with dry spells converge to cause a global shortage of wheat and other aliments, etc. In management and organization studies (MOS), a growing number of scholars have criticized the widespread rational approach as inadequate for addressing such complex, uncertain and evaluative situations (Ferraro et al., 2015). Under the term *grand challenges*, this literature addresses how collective action can be organized to better attend to these situations (Barin Cruz et al., 2017; Ferraro et al., 2015; Gehman et al., 2022; George et al., 2016; Martí, 2018). It is particularly insightful about the 'tentative, temporal and fragmentary solutions' (Martí, 2018, p. 970) that can be scaffolded. These works generally focus on the deliberate action of organizations that decide to tackle grand challenges, or what they consider to be the cause of grand challenges. Although a necessary perspective,

we offer that this situation does not encompass all encounters with grand challenges.

Examples abound where organizations have to deal with grand challenges by necessity rather than out of will. The actions – or lack thereof – these organizations then take also contribute to transforming the nature of grand challenges. A textile company facing cotton fiber supply difficulties due to droughts can turn to fibers whose production requires less water (such as hemp), to fibers produced in regions where water supply is not (yet) problematic (such as viscose), or fibers that require less water but come from nonrenewable resources (such as polyester). Just as organizations contribute to the emergence and perpetuation of grand challenges (Ergene et al., 2021), these decisions have consequences and become part of the fabric of grand challenges.

In this paper, we want to offer an alternative perspective on grand challenges by focusing on two of their characteristics that, we believe, have been little explored so far: First, grand

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challenges are not exogenous but endogenous to organizations: they transform and take specific shapes through organizations (but not only organizations) and their practices. Second, what is at stake in how to respond to grand challenges is a form of *reagencement*, in which a multitude of nonhuman beings participate, and whose ways of being in the world demand consideration. In other words, a posthumanist sensibility – and the theoretical and methodological considerations that accompany it – are essential to understand and respond to grand challenges.

From these two observations, we draw inspiration from the works of authors concerned with the composition of a common world with nonhuman others (Despret, 2002, 2007, 2014; Haraway, 2008, 2016b; Stengers, 2017; Tsing, 2015; van Dooren, 2022) to develop three sets of practices in response to grand challenges. Specifically, we advocate for slowing down in the definition of problems, to allow the emergence of new ways of composing the world. We also propose ways to conceive and account for the ways of being in the world of other species, so that our responses to grand challenges may be more attentive to them and to our entanglements. Finally, we urge to develop mourning practices in the face of irreversible losses and widespread human and other-than-human suffering (Haraway, 2016b).

By proposing a posthumanism pragmatist approach to address grand challenges, this article makes a threefold contribution to MOS. First, we extend the literature on grand challenges by proposing that grand challenges are encountered in situations. These situations are populated by a plurality of human and nonhuman beings, who are also participants in the becoming of the world. Our approach invites us to think *with* them rather than *for* them. Second, we propose a set of managerial practices that reframe the avenues of solution produced by the pragmatist literature on grand challenges. The practices we propose aim to allow the creation of a space of indeterminacy between a plurality of beings, so they can accomplish the rearrangement of problematic situations in a response-able way. Finally, we apply these principles to our own research practices to sketch out an approach where researchers do not remain in a position outside the reality they observe.

Throughout this essay, we weave our argument with the occupants of an urban park at the center of a controversy. We were moved by these occupants and their stories, which were the inspiration for the reflections developed here. We, thus, invite readers to dive in with us into this problematic situation, and to connect with its participants. The controversy in which the occupants of the park have been thrown entangles many beings and ways of beings, who are unsettled by their encounter with grand challenges. This situation is not merely an example of the consequences of grand challenges. Situations such as this one are how grand challenges come to existence in many organizations, and how organizations can transform grand

challenges by how they chose to respond (or not to respond) (Bowden et al., 2021). It is the aim of this paper to offer some thoughts on how organizations, along with scholars in MOS, can help compose 'better' worlds – a composition that is open-ended and always reinvented, and that has its source not only in human action but also in our multispecies communities.

First interlude

At the end of the Second World War,¹ Longueuil is a growing suburb on the south shore of Montréal, in the Québec province of Canada. During this expansion, several farms are bought and expropriated to allow for housing development. Among these stretches of lands, a 1.8 km² protected area is established to create an urban park. Officially opened in 1975, this park is nowadays known as Parc Michel-Chartrand. The park not only is mostly composed of forest but also features meadows and wetlands, as well as three artificial lakes. The most recent inventory lists more than 600 plant species, some of which are listed as 'threatened' or 'vulnerable' in the province of Québec, such as ostrich fern, bloodroot, and large-flower trillium (Les Amis du parc Michel-Chartrand, n.d.). Slow-growing understory plants, in particular, are especially susceptible to picking and grazing. For instance, large-flower trilliums typically take more than 15 years to become reproductive and can live more than 30 years (Rooney & Gross, 2003). The park also hosts around 200 bird species, eight amphibian or reptile species, and 18 different mammal species (Les Amis du parc Michel-Chartrand, n.d.). The most emblematic species of the park is certainly the white-tailed deer, a species of cervid native to the region, which can easily be spotted by visitors.

The deer of Parc Michel-Chartrand do not form a closed population, as they can move between the park and other habitats. In particular, the Boisé du Tremblay, a wooded natural preserve of 2.6 km², is located less than one kilometer away and connects the urban space of Longueuil with stretches of agricultural land.

Over the last few years, the City of Longueuil and the provincial Department of Forests, Wildlife, and Parks have become increasingly concerned with the number of deer in the park. At the end of the 2010s, they began using the term 'overpopulation' to describe their situation and announced initiatives to 'regain control' of the population. An aerial inventory conducted in 2017 counted 32 deer in Parc Michel-Chartrand, which corresponds to the density of approximately 18 deer per square kilometer (Ville de Longueuil, 2020).

¹ The informations used in this running example were gathered from media coverage of the controversy, as well as from scientific papers, publicly available reports, government websites, and interviews conducted by one of the authors for another research project.

Many factors help explain this high density. First, predators are practically inexistent in and around the park, as coyotes have been mostly driven out of the territory. Second, deer have access to an abundance of food from the agricultural land nearby, from citizens who take upon themselves to feed the deer and, until recently, from municipal employees who also fed the deer. At this latitude, however, the main contributor to deer population variation is the climate (MFFP, 2019). Harsh winters can cause a rapid decline in populations, while a succession of mild winters can prompt an explosive growth, as doe can have up to three calves per year. Climate change already impacts deer population and is likely to amplify this tendency, with overall change toward warmer winters and longer growing seasons (Dawe & Boutin, 2016).

The City points out many problems caused by the overpopulation of deer. Deer sometimes wander off the park toward residential areas, causing dozens of road accidents every year, as well as damages to properties as they feed from trees and bushes in private yards. They are also accused of contributing in propagating parasites to (human) visitors, in particular the black-legged deer tick, which is the vector of the bacteria causing Lyme disease in Québec (Donahue, 2021). Until recently, these ticks were absent from the region, but several factors (climate change, habitat changes, animal movements, etc.) have now made Lyme disease endemic in several municipalities in Québec, including Longueuil (Bouchard, 2021).

The interest in the deer population ties into a larger preoccupation for the protection of the vegetation cover – especially understories – of the park. Experts are concerned that the regeneration of vegetation is insufficient, which leads to rippling effects. For instance, ground-nesting birds may be disturbed and have difficulties finding appropriate cover for their nests. However, the deer are not the only ones to blame for this state of affairs. Canadian geese also overcrowd the park's lakes and wetlands, with 300–400 geese passing by at the peak of their migration season. Each goose eats around 4 kg of vegetation per day – an amount comparable to what is consumed by one deer. A web of illegal trails is constantly created by visitors who veer off official paths, crushing vegetation and disturbing wildlife. Park attendance increased considerably during the COVID-19 pandemic, worsening the situation. Although they are forbidden from even accessing the park, off-leash dogs are also a recurring problem for understory plants and their inhabitants. More importantly, the park is at the epicenter of an undergoing invasion of emerald ash borer, a small insect whose larvae feed from the inner bark and sapwood of ashes, often causing the death of the tree only 2–3 years after infestation. Ash borers have caused the loss of at least 10,000 trees in Parc Michel-Chartrand alone (Ville de Longueuil, 2022). The introduction of invasive species such as Japanese knotweed, invasive phragmites, and buckthorn is also to blame, as they crowd out native species and reduce biodiversity. For example, buckthorn grows rapidly early in the

season, forming very dense colonies which prevent other species from catching the sunlight.

As if it were not already enough, these different problems compound each other. For example, the young trees planted to replace those torn down by ash borers are prized food for deer, who quickly devour them. Invasion by exotic plants, which are generally not eaten by deer, further increases the pressure on remaining native plants. When food is scarce at the tail end of winter, deer may ultimately turn to these exotic species that are not part of their normal diet, causing them health problems. In view of the emaciated appearance that deer sometimes take on at the end of winter, some citizens take upon themselves to feed them, which may make the deer sick and desensitize them to humans. This leads to deer getting closer to humans, and sometimes even attacking them.

Grand challenges as multispecific encounters

Over the last decade, the literature on grand challenges has mushroomed, attesting to a desire among scholars to help alleviate some of the current and future plights of our world. Examples of grand challenges identified by authors include climate change, poverty and inequality alleviation, water scarcity, safeguarding of human rights, technology development, etc. (Benschop, 2021; Ferraro et al., 2015; Gehman et al., 2022). Grand challenges are often characterized as seemingly intractable problems which affect the well-being of large populations (Ferraro et al., 2015). Gehman et al. (2022) have defined them as 'matters of concern that entail complexity, evoke uncertainty, and provoke evaluativity' (p. 260).

Among notable contributions, the literature explores strategies to tackle grand challenges using a pragmatist approach (Ferraro et al., 2015; Gehman et al., 2022; Martí, 2018) or more generally through management research (George et al., 2016). Although we agree with these authors on many aspects of their work, we would nevertheless like to reconsider the characterization of grand challenges. In particular, we see two main limitations in the way they are generally formulated (including in much of the pragmatist stream of research), namely, their programmatic conception of action and realist framing of grand challenges, as well as their limited inclusion of nonhumans. Because forms of knowing are inseparable from forms of engagement with the world (Barad, 2007), both elements have significant effects on the type of response that can be imagined, thus warrant examination.

Realist and programmatic conception of grand challenges

In extent literature, grand challenges are often regarded as external entities (albeit with fuzzy boundaries) with bilateral relationships with organizations. Organizations are thus

described as *tackling* or *facing* climate change, poverty, and so on, with a focus on strategies that allow them to do so. On the flip side, researchers may be interested in identifying 'mechanisms and contexts by which [they] affect organizations and institutions' (George et al., 2016, p. 1881). Because grand challenges are seen as exogenous, these approaches focus on programmatic action, that is, on organizations and collectives that deliberately set out to address and resolve grand challenges. While it may be part of the picture for some organizations, we argue that this conception of grand challenges as external phenomena that can be confronted from the outside is not how most organizations experience these situations.

First, organizations are confronted with very concrete problems and situations rather than with abstract entities and actors. In the example of Parc Michel-Chartrand, the city is not facing 'climate change', but growing populations of deer and ticks. The problem they are addressing is not 'loss of biodiversity', but the concrete reality that some species of plants replace other species of plants and prevent them from growing. These are very concrete problems of arbitration between different beings (and ways of being), which are the fabric of grand challenges situations. While being able to connect specific situations with wider phenomena is useful, it can be problematic if it erases the specificities of this situation and what is at stake here and now. For instance, the issue of biodiversity implies that some lives and ways of living will be sacrificed so that some others may flourish. These are not questions that can be answered in the abstract.

Second, grand challenges, as they are encountered in situations, are often fuzzier and more interconnected than are typically acknowledged in the literature. Different grand challenges often come up as already enmeshed with other grand challenges, in such a way that the exercise of treating them separately is impossible. Once again, the example of Parc Michel-Chartrand demonstrates this, as it involves issues associated with loss of biodiversity, climate change, habitat destruction, and zoonotic diseases (and following other threads of the controversy would certainly lead us to many more grand challenges).

Finally, having to respond to grand challenges is hardly a deliberate choice for many organizations, who instead have to cope with their irruption and disruption. The term *encounter*, as it is used by Tsing (2015), appears more apt to describe how most organizations experience grand challenges, rather than terms such as 'tackling' or 'facing'. This term acknowledges the contaminations, vulnerabilities, transformations, and indeterminacies that are at stake when grand challenges emerge. Grand challenges exist (and come to existence) *through* organizations (but not only organizations) rather than outside of them. Specific relationships between beings are enacted, of which the effects are experienced as problematic (for some species). Grand challenges are not merely the reification of these

'problematic' effects under terms such as 'loss of biodiversity'. For example, the common phragmite was never an invasive species in the province of Québec, until its hybridization with the European subspecies of phragmite which crossed the Atlantic in the ballast of European ships (Tsing, 2022). The phragmite was always in the park, but its encounter with other phragmites led it to proliferate in a mode that destroys all others (Stengers, 2022). Grand challenges are not abstract entities that can be tackled in similarly abstract ways, but full of actors – human and nonhuman, living and nonliving – that need to be re-agenced.

The way organizations respond materially and semiotically to grand challenges constitute and transform grand challenges in nontrivial ways. What organizations choose to do – and not do – is part of the composition of the future. In other words, even organizations who do not explicitly set out to 'tackle grand challenges' unavoidably do so: there is no neutral position (Stengers, 2017).

Anthropocentrism

The second limitation with the way grand challenges are generally regarded in the literature is the overarching anthropocentrism. Scholars are increasingly acknowledging that grand challenges involve more than humans. In their recent reassessment of their original article, Gehman et al. (2022), for example, specify that participants in devising solutions must include 'non-human actors such as forests, oceans, lakes, and cities (p. 262)' and highlight that 'non-human actors ... seem increasingly crucial to our understanding of phenomena such as climate change' (p. 269). Similarly, Benschop (2021) emphasizes that in order to face challenges such as climate change, it is necessary to decenter 'both humans and organizations, repositioning them in wider ecosystems' (p. 13). Berkowitz et al. (2019) also highlight that anthropogenic changes to the oceans (such as acidification, warming, pollution, overfishing, etc.) necessitate a fundamental rethinking of our relational practices with both the ocean and its inhabitants. In short, the recognition of the importance of nonhumans in grand challenges is generally uncontroversial.

However, admitting that nonhumans should be considered in our responses to grand challenges is merely a beginning. Complex questions arise from this statement, among which the question of the adequacy of our theoretical frameworks and methodologies to the task of properly grasping these situations. In other words, the construction of a mode of attention, description, and understanding which accounts for the contribution of nonhumans and for our interactions with nonhumans remains rudimentary. For example, Ergene et al. (2021) criticize the 'anthropocentric basis of our theories' (p. 1326) and the 'conceptual separation of humans from the rest of nature' (p. 1326), calling for relational ontologies to facilitate

'imagining different human – Earth relations for a more-than-human world' (p. 1326).

One instance where the human-centered conception of grand challenges is especially visible is that while nonhumans might be treated as components of grand challenges, their active participation in encountering grand challenges is seldom acknowledged. For example, some plants, such as the invasive phragmite in Parc Michel-Chartrand, alter the surrounding soil in such a way that it becomes inhospitable to other plant species. The phragmite which transforms the soil, the ash borer who kills trees, and the deer who devour slow-growing plants are all actors in the becoming of the world, not merely stakeholders, objects of ethical concern, or, worse, part of the context or resources to be managed, controlled, or exploited. Grand challenges are populated by ways of life that intersect and put each other at stake. Some humans' ways of life certainly play prominent roles in the trajectories of grand challenges, but ignoring the world-making activities of others sets us up to fail.

Although emerging elsewhere in MOS – notably in some recent human-animal-organizational studies (Labatut et al., 2016; Lennerfors & Sköld, 2018; Sayers et al., 2019) – such modes of posthumanist understanding remain to be deepened here.

This posthumanist perspective brings out crucial political questions: how to involve these nonhumans? Who can speak for whom and under what conditions? How to build well-constructed political devices that are sensitive to, and account for; the multiple ways of being in the world? And, when it comes to devising a course of action, how should we proceed to the inevitable arbitration of different ways of life? Because grand challenges involve much more than humans' ways of life, creating answers to these questions is necessary in order to build multispecies modes of collective action.

In summary, in this paper, we aim to develop modes of attention and experimentation to problematic situations that (1) make it possible to respond to grand challenges situations as they are experienced locally, and (2) are based on a multispecies conception of the collective, that is, a conception that takes seriously the fact that our worlds are built and shared with other species. Although we chose to focus on other species, we believe similar arguments could be developed around other entities such as technologies and natural phenomena (forest fires, hurricanes, the ocean, etc.).

A 'compositionist' approach

In order to address both these issues, we suggest a deeper engagement with a posthumanist strand of pragmatism, which we term 'compositionist'. This approach is built from the insights of several authors, in particular Vinciane Despret, Donna Haraway, Isabelle Stengers, Anna Tsing, and Thom Van Dooren. While they do not share a unified approach, they all think-with (Haraway, 2018, p. XX) each other, which makes them

particularly fecund through their resonances. Like a patchwork quilt, this approach results from an assemblage of pieces of several textiles sewn together: The patchwork quilt never starts from scratch but creates new relationships between heterogeneous materials (Deleuze & Guattari, 2013). Importantly, it 'is not merely a hodgepodge of fabric – it has a specific purpose and context' (Koelsch, 2012, p. 824). In this case, ideas from the different authors were bound by a specific problem: how do we, and how can we compose a livable common world, when the 'we' is utterly heterogeneous and precarious? For the sake of clarity, we opted for the neologism *compositionist*, originally coined by Latour (2010), to describe this *ad hoc* assemblage.

This approach, which addresses the characterization of grand challenges made earlier, evokes modes of response that differ from those present in extant literature (although they can be complementary to some extent). In the next section, we present three such modes of response. But first, our second interlude brings us back to Parc Michel-Chartrand, where the encounter with grand challenges will soon take a turn.

Second interlude

In November 2020, the city of Longueuil announces that it will euthanize 12–15 deer to counter the overpopulation and help restore the ecological balance of the park. This decision follows recommendations from scientists of the Department of Forests, Wildlife and Parks, who state that the ideal population of deer should be of no more than five deer per square kilometer of forest (Hébert et al., 2013), and that an acceptable population for the park would be between 10 and 15 individuals (Ville de Longueuil, 2021). This plan benefits from what is described as a scientific consensus, although this apparent consensus is broken by some researchers who would like for other options to be explored. It provokes passionate outcry from citizens and animal defence groups: 61,000 person sign petitions, and multiple demonstrations are held at the park. The intensity of the debate is such that the mayor receives death threats.

The most discussed alternative to culling is the relocation of the deer; whether in natural environments or in wildlife sanctuaries. The experts, however, are quick to dismiss this solution, citing a study where 50% of a population of deer who were anesthetized to be transported in another region was found dead hours or days after their release (the relevance of the study is contested by other experts and naturalists). Relocation also comes with a risk of introducing Lyme disease in regions where it is not yet endemic (once again an objection contested by others).

Two weeks after the initial announcement, faced with strong opposition, the city does an about-turn. A rescue organization is given the mandate to plan the relocation and to find mitigation measures to improve the deer survivability and prevent

the propagation of diseases and parasites. A few months later, the solutions found by the organization receive an unfavorable verdict from the committee of experts responsible for authorizing the operation. They raise in particular the inexperience of the organization in this type of operation, and their lack of expertise with the species (Harvey-Pinard, 2021). The city therefore returns to its initial plan of culling the deer:

In the fall of 2021, less than a year, after the first announcement, the number of deer to euthanize has grown from 12–15 to 55–60, as the city now estimates the population at 70 deer. As the rescue organization had already struggled to find sanctuaries for 15 deer, this ostensible increase makes the culling seem all the more inevitable, with Longueuil's mayor now stressing that it is the 'only viable solution' (Donahue, 2021).

The culling, which can only take place in the fall and early winter due to the doe's gestation and calving seasons, was initially planned during the fall of 2020. First postponed in order to explore relocation plans, it is again postponed in the fall of 2021, this time due to a labor shortage. In the spring of 2022, a group represented by a prominent lawyer brings an action against the city, which leads once again the city to postpone, with an anticipated number of animals to be culled now reaching 70 deer. As we write, the deer still remain to be euthanized, their carcass prepared by culinary school students, and their meat distributed to local food banks (Corriveau, 2022). That is, if their meat is not a COVID-19 vector, as deer populations in Québec have become victims of spill-back events (Environnement et Changement climatique Canada, 2021; Shah, 2022).

Compositionist modes of response

With so many lives and ways of living at stake, compositionists take to heart the difficult political tasks we are now facing. The underlying idea behind a compositionist approach is that what is at stake in our ways of encountering grand challenges is the perpetual construction of ways of living together – a 'together' that includes multitude beings and of ways of being in the world. What a compositionist approach offers, then (and what we present here), is a mode of construction that can help us compose what is, in a given situation, a 'better' world. What this 'better' means is always emerging and always attuned to the consequences of its definition.

The three ideas presented here are ways in which modes of attention, consultation, and construction could be better created when encountering grand challenges. While some specific techniques and devices might be alluded to (and innumerable others remain to be invented), we focus here on the general idea behind these modes of response. Accordingly, the compositionist approach should not be interpreted as a universal model of action to be transposed in every situation. Similarly, its goal is not the construction of one (or several) *solutions* to grand challenges in order to make them disappear, to

orchestrate a return to normal, or to achieve a predetermined ideal state.

Slowing down

The first mode of response to grand challenges consists in slowing down in the definition of problems. This 'slowing down' is not so much a temporal demand as it is a democratic one. In fact, it stands in opposition to paralysis, by recognizing and accepting the absence of certainties on what ought to be done. In doing so, we create an opening, a suspension, where we can build our capacity to hesitate together (Stengers, 2017, p. 109).

Slowing down stands in contrast with other approaches who rely on predetermined, singular, or static views of how the world should be (George et al., 2016). Compositionists want to enhance collective thinking and action by opening up to multiple ways of taking hold of problems and of defining what the world should become. By doing so, their goal is never to negotiate between these different definitions to come up with the 'best' one. Rather, they argue that the multiplication and complexification of worlds, and of stories about these worlds, is what is needed to make our world more livable (Despret, 2019; Haraway, 2016b; Stengers, 2017; Tsing, 2015; van Dooren, 2022). This mode of response echoes in some ways the strategy of 'multivocal inscription' described by Ferraro et al. (2015) by extending the importance of different voices prior to the stage of solution design, to that of taking hold of the problems at hand in a specific situation.

Slowing down is particularly important when it comes to grand challenges. Just as is the case in our running example, many encounters with grand challenges may be experienced as crises, where immediate action is necessary to mitigate the damages. They may be accompanied by a sense of urgency, a sense that it is nearly or already too late to engage in the kind of deliberations necessary to address the complexity and evaluativity of situations.

This sense of urgency carries with it the temptation to define consultation as a luxury we can no longer afford (Stengers, 2017, p. 141). Under these conditions, the only forms of consultation that might appear possible are more akin to public relations' operations, creation of social acceptability, or consensus building than genuine consultation. This narrowed view restricts the horizon of possible responses to problems already defined and solutions already created and presents these solutions as obvious and indisputable. In a striking example of this, the mayor of Longueuil stated on Twitter that killing the deer is 'absolutely necessary and urgent' (Fournier, 2022), declaring in an interview that we 'need to face the reality' and adding that it is the 'only possible way forward' (Dostie, 2021). A biologist similarly states: 'The science has spoken. Two distinct research came to the same solution, that is, the culling of deer' (Champagne, 2022).

Both the mayor and this biologist neglect to indicate that the problem never really had a chance to exist other than as it was constructed initially. To the main decision-makers, the controversy was always about biodiversity. Any chance at a discussion was averted by the imposition of an ideal model – that of the ‘ecological balance’ of the park, as defined by an optimal density of deer per square kilometer of forest, i.e., five deer per square kilometer (Hébert et al., 2013). This definition excludes from the outset multitude ways of forming the problem, or even simply of defining ‘ecological balance’. For example, it leaves out definitions of ecological communities as dynamic states always in the making (van Dooren, 2022). It also excludes certain voices for whom the problem arises quite differently, including the voices of the very beings of which the life and the ways of life are at stake. It excludes from discussion a range of questions that could be discussed and debated by actors. For example, should we keep protecting vulnerable plants in the park? Should we completely exclude deer from the park by building enclosures? Rather than looking at the possible consequences of a given action, the consequences are sorted from the start into good and bad, depending on whether they help achieve the predetermined ideal.

The exclusions created when urgency becomes synonymous with simplification have serious ethical and material consequences. Without this slowing down, without the creation of a space of indeterminacy which allows to take hold of problems differently, the voices who take part in consultations have ultimately little importance. In the case of Parc Michel-Chartrand, those who oppose the culling of deer find themselves forced into the task of finding alternatives that will still obey the predetermined objective of five deer per square kilometer. Nevertheless, some actors do contest the urgency and ask for time to invent alternative constructions of the problem and of possible responses. For example, a citizen remarks, ‘is it absolutely urgent to euthanize the deer at Parc Michel-Chartrand? No. The forest will not die tomorrow. ... Biodiversity is all the flora, fauna and humans that must learn to live together’ (Lavallée, 2020). This definition of biodiversity is different from the one used by the Department and evokes different courses of action. This citizen suggests in particular that neighboring backyards should not include deer-preferred plants, and that speed limits in the streets surrounding the park should be reduced and enforced to reduce the risk of collisions.

Importantly, these other versions of the problems are not in competition with one another. They are called upon to enlarge our understanding and our circle of considerations, in a way that allows for different responses to emerge. For this to be possible, questions of asymmetries of power can hardly be ignored (Gehman et al., 2022). For example, Bowden et al. (2021) describe a case where a version of a problem (raising waters in a coastal community) and the solution devised by

experts and scientists (a climate adaptation plan) were sidelined by other powerful actors (property owners, developers, and real estate agents) to focus on another single version of the problem (falling property prices), which led to avoiding discussions and action on climate change.

Different devices and courses of action can be developed to help slow down the definition of grand challenges. In the realm of business schools, we should not overlook that rational approaches, which prioritizes (some) forms of scientific knowledge, are still prevailing in decision-making (Cabantous & Gond, 2011). In such approaches, scientific forms of knowledge are often given a free pass to define problems and are prone to speed up consultations by offering already built consensus (even though this consensus was built only within the confines of a scientific discipline). As management and organization scholars, developing teaching approaches attentive to the performativity of theories is one way in which we can foster more open-ended decision-making practices.

Slowing down might also look like creating forms of consultation and action that help us explore new ways of living together rather than focusing only on sweeping solutions. In this sense, we should note that the feeling of urgency felt through encounters with grand challenges is certainly warranted, and the need for response is genuine. Our call to slow down is certainly not a request to ‘wait and see’ or to inhibit action while waiting for more formal consultation. Rather, it is to recognize that addressing a problem in multiple ways is important not only to explore innovative courses of action but also to avoid renewing the mechanisms at the source of the problems we encounter today.

Multispecies world-making

The second mode of response consists in accounting for the ways of life and world-making activities of other species in the composition of responses to grand challenges.

As stated previously, the acknowledgment of nonhumans in grand challenges literature remains generally superficial. By contrast, compositionists adopt a clear posthumanist approach, which focuses, in particular, on acknowledging the multispecies nature of our world. For compositionists, the idea of preformed independent entities that remain unaffected by their continual encounters and that can be isolated from all other kinds of beings is not ontologically tenable. As we live our lives, we are affected by, and are affecting, those around us. These transformations occur whether we want it or not, and whether those we encounter are humans or not. In fact, evidence mounts that the ‘we’ we acknowledge to be is, by nature, a multispecies, collective, ‘we’: ‘everyone carries a history of contamination; purity is not an option’ (Tsing, 2015, p. 27).

Furthermore, every species has a different ontology, since ‘their bodies give them a totally different world in which things

affect them in radically different ways' (Despret, 2013, p. 59). Each of these beings therefore has different forms of presence and existence, different visions, different ways of questioning the world, and being actors in it (van Dooren, 2022, p. 15). Similarly, other species also encounter grand challenges and take hold of these situations in ways that make sense to them. For example, while deer may not be concerned about biodiversity, they may experience problems such as the lack of familiar food, intensive contact with other individuals, increased competition, etc.

In any given situation, this means that there is not a unique, objective world, but the worlds of multiple beings that are enfolded, in partial connections (Haraway, 2016b), where the world of one never completely encompasses the world of the other. We inhabit a world made up of many worlds (van Dooren, 2022). Each and every action reconfigures the world, unfolding in its wake the world of others in ways that can be significant to them. The presence and action of one can constrain or enable the other, but never in a deterministic way. These contact zones (Haraway, 2008), where bodies from multiple species entangle and articulate each other, emerge a form of multispecies politics. The hope, then, is to find ways to live well with these other beings, in this shared world (and to learn to construct what 'living well' means).

Recognizing the multispecies nature of our world, and hence of grand challenges, requires us to be attentive to the diverse ways of being in the world. A first challenge is therefore to make these beings present and to get to know them as participants in a specific community. To this end, different knowledge practices might be drawn upon, 'including our combined forms of mindfulness, myths and tales, livelihood practices, archives, scientific reports, and experiments' (Tsing, 2015, p. 159). This could imply a need for enhanced interdisciplinarity in our research (Berkowitz & Delacour, 2020), especially through a diffractive practice that embraces the notion that 'the world is materialized differently through different practices' (Barad, 2007, p. 89). Nonscientific forms of knowledge are also crucial as they often reflect other ways of grasping problems and other modes of attention, which cultivate other modes of relating and responding. For example, visitors of Parc Michel-Chartrand who regularly interact with the deer might know them differently from the abstract species portrayed in some scientific accounts. This leads them to bring out different concerns, such as the fact that many deer in the park are habituated to humans, which, in the view of these person, alters our responsibility to them (Cyr, 2022).

Being attentive to other species thus goes further than learning the parameters (quantity of plant ingested daily, size of litters, life expectancy, etc.) that would allow us to manage them as resources. Unlike in rational approaches to decision-making, this knowledge is not a purely cognitive act: it is learning to make oneself sensitive to the sensitivity, intelligent to the

intelligence of other beings, in other words, to accept to go through a transformation (Despret, 2002, pp. 92–93). In this way, decisions are not merely more 'informed' but more attuned to other species: 'We have to learn who they are in all their nonunitary otherness in order to have conversation' (Haraway, 2008, p. 263). Knowing more about nonhuman others does not mean that we must unconditionally accept their ways of being in the world, but that we should not thoughtlessly define them as undesirable or killable (Haraway, 2008, p. 80).

Recognizing the multispecies nature of grand challenges draws attention on the political devices put in place to develop responses: who should be invited, and to what task should they be invited to participate? In the type of political device envisaged by compositionists, those who are invited are different experiences of the problem, carried not only by experts but also, for example, by philosophers, artists, naturalists, citizens, etc. Importantly, 'decision must take place somehow in the presence of those who will bear their consequences' (Haraway, 2008, p. 83).

As for the task to which they must be invited, it is first that of building a 'we' interested in the situation, to then build multiple forms of response. In the case of the Parc Michel-Chartrand controversy, some of the experts who are mobilized stop short of acknowledging the situation as one of constructing a multispecies community, and instead take a position of judge of solutions, who are there to adjudicate the solutions created by others.

Being present and grieving losses

The third mode of response consists in being present, in refusing to close one's eyes, as to the state of the world. Since the compositionist approach to grand challenges is not based on the idea of finding transcendent solutions or achieving salvation for all, it is acutely attuned to the fact that irreversible loss and ongoing suffering are inevitable. In many ways, this calls for different practices from those focused on solutions. These practices play crucial roles in healing, learning, thinking, and living in damaged worlds (Haraway, 2016b). In a troubling comment, Haraway (2008) states: 'I do not think we can nurture living until we get better at facing killing. But also get better at dying instead of killing' (p. 81). The third mode of response drawn from compositionist authors thus calls for practices of mourning and grieving losses.

On the one hand, constructing responses is an ongoing process, which requires time and involves countless experimentations. While this world is being built, species disappear, beings suffer, and ways of life are destroyed. In the Parc Michel-Chartrand situation, we can hardly ignore that in the absence of intervention, the number of deer has grown, putting more lives in the balance (whether through death by starvation or by euthanasia). On the other hand, the responses always involve

arbitrations of ways of life, with some of these ways of life allowed to flourish, others doomed to disappear, and still others bound to be irremediably transformed. Composing 'better' worlds does not mean that there is no cost to some beings. The worlds we (but not only 'we' humans) build through our (in)actions have consequences.

The fact that humans have considerable power to enact such arbitration should command an equally considerable sense of responsibility and accountability. Justifying 'sacrifices', such as killing deer in Parc Michel-Chartrand, by alluding to a common good or a calculation of the balance of costs (to whom?) and benefits (for whom?) – however well-constructed this calculation is – is necessary, but not sufficient (Haraway, 2008). Indeed, for compositionists, being present in the face of such losses and suffering is an ethical and ontological obligation (Haraway, 2008, 2016b). Being present means to learn to be affected and to make oneself available to the other (Despret, 2014), and learning to share pain nonmimetically (Haraway, 2008, p. 84):

maybe sharing suffering is about growing up to do the kind of time-consuming, expensive, hard work, as well as play, of staying with all the complexities for all of the actors, even knowing that they will never be fully possible, fully calculable. Staying with the complexities does ... mean learning to live and think in practical opening to shared pain and mortality and learning what that living and thinking teach. (Haraway, 2008, p. 83)

In the case of Parc Michel-Chartrand, it would certainly be unfair to say that the decision-makers are taking the culling lightly. Nevertheless, as the process drags on, an impression of detachment, impatience, and insensitivity emerges. In the spring of 2021, we could read revealing comments left by citizens on a social media post of a national newspaper, reporting another delay in the process (Le Devoir, 2021). These comments were describing those defending the deer as having 'little sensitive hearts', suffering from the 'Bambi syndrome', having 'ill-placed compassion', being 'emotionally fragile', and contributing to 'the feminization of men'. The fact that practices of presence are devalued by a part of the population is not surprising and does not indicate that they are absent in others. We can, nevertheless, underscore how a fixation on rational modes of thinking – of the kind denounced by feminist scholars (Benschop, 2021; Huopainen, 2020; Satama & Huopainen, 2019) – robs us of the ability to be truly present, in our bodies and affects, and therefore response-able. It is possible; indeed, it is necessary to recognize that while killing deer might be part of the way to go forward, such a choice would also be truly heartbreaking for reasons we can imagine and others we cannot comprehend. Complexity – not only of the cognitive and rational kind – is part of the fabric of grand challenges, and as such, it is inevitably part of responding to grand challenges. In short, learning to be present to grand challenges requires mindfulness and a 'radical ability to remember and feel what is going on and

performing the epistemological, emotional, and technical work to respond practically in the face of the permanent complexity' (Haraway, 2008, p. 75).

A second consequence of being attuned to irreversible loss and ongoing suffering is the necessity to mourn the beings and ways of life who disappear. For Despret (2017), who has investigated this question, mourning can take multiple forms that are far from being limited to the psychologizing version of it. What many mourning practices have in common, in fact, is to enable those who remain to receive and extend the presence of those who disappeared. Thus, the disappeared, through the living who respond to their presence, have 'ways of being' whose effects can be felt (Despret, 2017, p. 19). For example, the idealized vision of the community of Parc Michel-Chartrand as it was before the upheavals may well never have been true, but its presence in the discussion is not useless. Just because there is no going back does not mean that this vision cannot help us think and create the future. In other words, Parc Michel-Chartrand as it (perhaps) once was can have an extension of existence and continue to have effects. Learning to mourn thus involves the invention of practices of re-suscitation. If the deer of Parc Michel-Chartrand are ultimately killed, or if the presence of deer and other invasive species leads to the disappearance of the large-flower trillium from the park, how can we keep them present so that they continue to inhabit our actions? Here, as in many other situations, it is necessary to think beyond the odd commemorative signs and create more engaged and imaginative practices. Feminist speculative fiction, as well as other practices of imagination and experimentation (Haraway, 2016b; Sayers et al., 2022), can help us enact this type of affirmative responses. An artist and naturalist interviewed by one of the authors of this paper recounted how she asked school children to look at her paintings of grey wolves – which the children were unlikely to ever encounter in the wild as they are extinct in the region. She asked them to describe what they saw, what they heard, what they smelled, and what they felt as they looked at the painting. She then accompanied them in the woods, where she invited them to *feel* the wolf in this environment, which wolves still inhabited a few decades ago. This is the type of imaginative practice that, we believe, can help enact a more response-able future in the wake of grand challenges.

Concluding discussion

In this paper, we have presented an approach that cultivates a sensitivity to how many of our encounters with grand challenges happen. This approach helped us develop the modes of attention required to develop response-able responses in these situations and offers us a methodology of experimentation in the construction of 'better' common worlds (a 'better' that always remain to be defined – by humans and nonhumans alike).

A first contribution of this paper is to move away from a programmatic framing of grand challenges, where one or more organizations deliberately take action, and to this end deploy different solutions and organizational strategies (Ferraro et al., 2015; Gehman et al., 2022; George et al., 2016). We focused on what we believe is closer to what is experienced by many organizations and collectives, namely, the 'encounter' with grand challenges. These encounters with grand challenges are moments where previous agencements no longer hold, and where reencements must be engineered. Grand challenges are therefore endogenous to organizations since the agencements (Gherardi, 2016) that are unsettled already constitute the organizational sphere. The way this reencement is accomplished (without ever being finished), and the effects of this reencement are central mechanisms in grand challenges.

Even as the literature on grand challenges increasingly builds on the resources of pragmatism (Ferraro et al., 2015; Gehman et al., 2022; Martí, 2018), it mostly maintains an ontological fracture between actors and their environment, as well as an epistemological fracture between scientific knowledge and those objectivized by, and subjected to, this knowledge. As we have argued, such an approach to grand challenges has problematic implications for who is made to matter in the becoming of the world, and how they are made to matter. The compositionist approach suggested here thus offers another way of engaging with grand challenges that resonate with the lived experience of grand challenges.

The compositionist approach thus both broadens the discussion on grand challenges and makes it more specific. It broadens the discussion by inviting researchers to take an interest in seemingly mundane situations, which were perhaps not labeled as 'grand challenges'. Local controversies appear as particularly interesting locations to study and experiment responses to grand challenges, but smaller scale phenomena, such as decision-making, also seem promising. Decision-making situations are sites where we can – however fleetingly and imperfectly – take hold of seemingly intractable problems. Through a compositionist approach, each of these sites becomes an opportunity of composing the world differently. Given the centrality of decision-making both in management practice and in management education, we can think that approaching it with compositionist ideas in mind might enhance our collective ability to respond to grand challenges.

The compositionist approach also makes the discussion more specific by conceptualizing grand challenges as concrete situations populated by entangled humans and non-humans where a very material arbitration takes place. This makes it possible to focus on organizations – including those whose mission is not to tackle grand challenges – as nexus where grand challenges happen, and where things can be made to exist differently.

This idea is in line with the development of responsible management-as-practice (Gherardi & Laasch, 2021) in its shift from self-standing entities to entities in their becoming.

A second contribution of this paper is to deepen the post-humanist conception of grand challenges which, although evoked by several authors (Benschop, 2021; Ergene et al., 2021), remained generally limited. In doing so, we equip ourselves with concepts, vocabulary, modes of thought and representation, etc. that allow us to think about situations of grand challenges other than as centered on humans and their concerns. This approach departs from managerial approaches and 'business cases', which have been criticized for their focus on (some) humans' interests and overall inability to enact radical change (Ergene et al., 2021). The compositionist approach is particularly innovative in that it considers living beings not only as objects of care or ethical concern, but also as world maker, participants in the becoming of the world, and members of a community. This means that the modes of response to grand challenges are no longer simply to 'think about', but to 'think with' others in order to invent what a better world means, and to invent the means to build this better world.

The approach to grand challenges we offer here echoes a growing preoccupation with how some modes of thought have become so hegemonic in MOS that they hinder the 'possibilities of radically imagining alternatives' (Vijay, 2023, p. 1) to the current crises. For instance, Vijay (2023) denounces how the Eurocentric bedrock of MOS effaces other 'non-Enlightened' practices of knowledge, even in more critical spaces. In a move consonant with our proposition to think with multiple species in their local situations, she relies on Tsing's (2015) metaphor of foraging to suggest hearing what the 'multiplicity of struggles from below' and their 'solidaristic transgressions' (p. 5) can teach us about alternative world-making.

While this paper focused on the activities and interactions of living species and in particular animals and plants, we believe that similar arguments could be made with regard to entanglements with other types of nonhumans. For example, world-making activities are also performed through our alliances with multiple technologies (Haraway, 2016a, 2018), which are present in – and even indissociable from – many grand challenges. Understanding how our cyborgian 'selves', equipped with our technological appendages, take hold of problems is thus another key in understanding our encounters with grand challenges.

This paper also contributes to the literature by offering a methodology and a general approach to guide action. The use of the pragmatist approach can be fruitful for this purpose, since pragmatists are especially concerned with 'how to proceed in an unpredictable world in which we are nevertheless required to act' (Simpson & den Hond, 2022, p. 129). For instance, Ferraro et al. (2015) offered three strategies to tackle grand challenges inspired by pragmatist thinking. Here, we

extend this idea by putting forward a pragmatist framing of grand challenges themselves.

This allows us to better take advantage of the fecundity of the pragmatist approach, especially as it is 'non-foundationalist and non-dualist, acknowledging the pluralist and relational nature of life and its evolutionary dynamics' (Simpson & den Hond, 2022, p. 129). The resulting modes of response are therefore distinct, while remaining somewhat compatible with those proposed by Ferraro et al.

Such an approach obviously does not prescribe what are the 'right' decisions, nor does it intend to form a decontextualized 'best practice' to be exported in local contexts. Like Gherardi and Laasch's (2021) proposition for responsible managing, it is focused on how to build what, in a precise situation, at a precise moment, can constitute good decisions. It forms, in other words, 'an ethics of engagement with humans, nonhumans, more-than-humans, and the world' (Gherardi & Laasch, 2021, p. 10). Although our approach is not aimed at developing best practices, reports of experimentation with different strategies still seem necessary both to feed the imagination of the possibilities available to us and to better understand how certain effects emerge from certain modes of agencement. Accordingly, we believe that such accounts of local experimentation with grand challenges organizing would be of interest.

Finally, this paper would be incomplete if we did not recognize the contribution of the beings of Parc Michel-Chartrand, whose presence continues to resonate in us. Telling their story as we did, giving them the place we gave them, is important. We have chosen to invite the reader to dive with us into this controversy, in the web woven by its different actors, hoping that, like us, the reader feels seized, curious, affected, and troubled; invested in some way in this situation and in the becoming of the worlds. Hoping that a thread of kinship and responsibility was hence spun and tied with these beings. That, as a result, the act of visiting an urban park, inhabiting our multispecies communities, and writing and thinking about them, is somehow altered.

Such stories are central to a compositionist approach: 'If a rush of troubled stories is the best way to tell contaminated diversity, then it's time to make that rush part of our knowledge practices' (Tsing, 2015, p. 34). In a compositionist approach, these stories 'enhance collective thinking and movement in complexity' (Haraway, 2016b, p. 29). This happens through learning more about others and their relationships, but even more so through a more-than-cognitive mode of apprehension. As we learn to be affected, knowledge transforms us and enhances our ability to respond (our response-ability) to those whose worlds and ways of life we learn more about.

Alternate writing through the use of interludes, which was inspired here by Despret's similar experiments (2017, 2019), is

one way to take hold of things on different modes. The experience related in these interludes is not used merely as a proof that supports what 'really' matters (i.e., the theoretical abstraction we derive from it). It is another – equally important – way of accounting for situations, which produces different effects and which affects readers differently. This reiteration on a different mode thus resonates with the idea of slowing down in the way we discuss problems, so that we can leave the space open for new responses to emerge.

If organizations are spaces where grand challenges emerge and are transformed, we could say the same about our journal articles, which can also become spaces of transit (Beavan, 2021, p. 1842). Just as grand challenges are emerging through organizing and managing, 'Academic writing is a platform not just for knowledge but for political change: change in the organization studies academy, organizations, and by extension, society' (Beavan et al., 2021, p. 450). The way we write about – and with – encounters with grand challenges contributes to their reengagement. Although the form of this paper remains, by many standards, mostly conventional, it was informed by the arguments of feminist and post-qualitative authors who argue that 'our writing has the ethical capability to transform, develop theorizing around more-than-human relations, and transition to greater inclusion and co-constitution' (Huopainen, 2020, p. 15). In this sense, we believe that the literature on grand challenges requires more stories, written 'differently' and written *with* more beings, as myriad experiments that can transform the world.

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