Introduction.
Exploring Multifarious Worlds and the Political Within the Ontological Turn(s)

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ABSTRACT: T*his introduction to the issue presents the political dimensions of research carried out within the framework of the ontological turns that stretch between Anthropology and Science and Technology Studies (STS). Drawing on the concept of political ontology, practical ontology, and the papers assembled in this issue, we embrace the political to be practically sitting transversally in different political fields that foster the constitution of new forms of life as alternative ontologies. In this sense, politics is a critical endeavor to unravel power asymmetries. It attempts to not only illuminate different ontologies, but to realize and co-constitute them. To avoid getting trapped in a mere description of alteritarian worlds and their political power structures, we propose focusing on the largely invisible moments of ontological uncertainties. These eerie moments, which exist in common but non-contemporaneous environments appearing in between something and -time, can provide a learning opportunity for understanding inheritance as responsibility. Their appearance jumbles time and ontological orders, granting us insights into automatic modes of action that normally go unseen. We thus sketch a policy for making oddkins throughout worlds, including its specters.*

The Covid-19 pandemic has kept humanity in suspense for well over a year, pushing societies into various states of stagnation and exposing the absurdities of our capitalist world in many places and situations. At the same time, climate change continues to intensify. Large areas of the Amazon rainforest are once again on fire in 2021, cyclones and storms along West African coasts are increasing in strength and regularity. The world sinks in garbage and the ›energy transition‹ requires a further exploitation of soil, body, and labor through extraction. All of these events and phenomenon—in one way or another—relate to specific human-environment relationships over time and space that unveil a slow violence, determining and amplifying the dying of kinds and the overarching advent of new life.

To deal with the various threats posed by these phenomena, it is necessary to continuously and critically envision relationships between humans, non-humans, more-than-humans, and what is commonly referred to as nature, and to unravel stories and encounters between them that are concealed by the machinery of capitalism. Since the 1990s, the social sciences

have encouraged the effort to make the ontological multiplicities of these human-environment entanglements visible in what has been called the ontological turn. Ensuing debates occurred within various disciplines, including among anthropologists (e.g., Descola 1992, 2005; Salmond 2014; Viveiros de Castro 2015, 2017; Kohn 2015; Boellstorff 2016; Holbraad/ Pedersen 2017; Ōmura 2019; Tsing 2019) and scholars of science and technology studies (e.g., Mol 1999; Pedersen 2012; Gad et al. 2015; Jensen 2015, 2017, 2020; Jensen/Morita 2017; Pickering 2017). Still, debates about ontology remain vibrant. They occupy a broad domain of contemporary social sciences, but continue to be very controversial (e.g., Bessire/Bond 2014; Todd 2016; Chandler/Reid 2020). One line of criticism concerns the supposedly apolitical attitude of ontological studies. They are blamed for getting lost in wildly uncritical descriptions of altered worlds or a fascination with small ontological differences in practice. The lack of perspective in scholarship threatens to obscure the actuality of global power relations and asymmetries linked to gender, race, and class.

This introduction engages with the apolitical critique to shed light on the political implications, dimensions, and potential found in ontological studies. It unravels simultaneously possible answers that lead us to dispersed and eventually eerie places. Here, we ask: how do current ethnographic researchers today address and apply ontological approaches in anthropology and STS? To what extent do these approaches predicate and testify *the political*? And, further, what else can we learn from pasts and futures that might help us responsibly orient ourselves in the world we currently live in?

The contributions in this issue are sensitive to ontological multiplicities that unveil the dimensions through which power unfolds: in negotiations, in stories, in management, and in anticipated practices. Accordingly, we argue that the ontological turn itself offers political potential to the disciplines and scholars that contribute to it or are affected by it. Moreover, we claim that the unraveling of a differentiated perspective on various forms of life can itself be political as studies push alter-ontologies presently into the foreground, laying bare power asymmetries that would otherwise remain invisible. These emerge from the *transversal* fields of politics that go beyond merely local or indigenous loci. We thus plead for emphasis on the situation of multiple ontologies that refer to important forms of being and becoming in this world. The ontos is illuminated in its processual becoming, providing new possibilities for political interventions to shape and form the world we like to live in. We further argue that a close attention to the emergence of unusual interruptions in reality that occur in what we call eerie moments, which take place in common but non- contemporaneity, to illuminate memorials to past histories and hints of future imaginaries. These moments remind us of our worldly inheritance and responsibility as relates to the task of jumbling ontological orders. Making oddkins, that is to make relationships with others, as Donna J. Haraway (2016) urges, is then not limited to relations with different kinds of others. It rather extends its range as far as we are encouraged to make kinships with the uncertainties of the ontos.

We start by briefly introducing perspectives on the ontological turn from its central fields of research, along with their limitations. The second section then explores the extent to which the critique of apoliticism is valid for the entire turn. We therefore briefly outline the approaches of political ontology (Blaser 2009; de la Cadena 2010; Escobar 2017) and practical ontology (Gad et al 2014, cf. Jensen this issue) to present a genealogy for the political ontological turn(s) in anthropology and STS, in which we situate the contributions of this issue. By pinpointing us to sometimes hidden and invisible and sometimes vast and obvious dimensions of the political, these contributions hint at where we might elsewhere find *the political*. In the third and last section, we unravel alternative ways of dealing with uncertainties in the multifarious temporalities of past events and future imaginaries.

Turning and Twisting the Ontological

Whether the rise of interest in ontological topics marks a paradigm shift in the sense of an ontological *turn* or simply a sharpening of already existing research foci and positions is still a matter of debate (cf. Holbraad/Pedersen 2017). What is beyond question, however, is that the social sciences have experienced »a turn *to* ontology« (ibid. 2017, 8) in the last three decades. Across disciplinary boundaries, studies are interested in the multiple versions of being and the constitution of the world(s). Still, perspectives differ slightly. Anthropology mainly understands the ontos (the Greek notion of *being*) as the underlying metaphysical principles of being, expressed in (and thus examined through) empirical phenomena as being representative. STS views ontology as being multitudinous, graspable through its fragments when emerging throughout various sociomaterial constellations. These worlds thus appear in a performative way. While the ontological turn is often understood as being an ›add-on‹ to the material turn in STS, it neatly follows the performative turn in anthropology away from mere focus on the production of text and writing (Cohen 2018, 304).

Starting with laboratory studies (Kuhn 2012 [1967]) and continuing through (post-)actor-network theory (Latour 1987; Law/Hassard 1990; Callon/Latour 1992), studies in STS debate multiple realizations of the world in the context of technology or processes of knowledge production (Latour/Woolgar 1981; Haraway 1988; Law/Mol 2002). For example, this framework examines multiple ways of being that are enacted through and done by specific practices (e.g., Woolgar/Lezaun 2013; Mol/Port 2015). Unlike anthropological attempts, STS studies avoid the *representational idiom* that sees phenomena as representational of a whole culture; instead, it understands the world »more generally as an unpredictably and open-endedly emerging assemblage« (Pickering 2017, 145). Ontologies are as such »ontologies of decentered becoming« (ibid.) in the framework of process ontologies (e.g., Dupré 2014) that decenter dichotomies between human—non-human, and subject—object, stretching out their interests in the processes that bring phenomena-in-their-becoming (Barad 2011) into being, impacting ontological settings. In this sense, ontologies are often understood as a relatively stable sociomaterial constellation. Aptly characterized as an »island of stability« by Pickering (2017), they are part of enduring processes—and thus dynamic and in constant flux.

Pioneering contributions in anthropology by scholars, such as Tânia Stolze Lima (1996) and Eduardo Viveiros de Castro (1996, 2017), originated in the Amazonian context to engage with indigenous ontologies. The authors define perspectivism as the multinaturalistic order of being in Amerindian realities that fundamentally differs from multiculturalist conceptions of the West—the idea that we deal with a plurality of cultural perspectives on a single nature. They thus challenge the philosophical claim of an all-encompassing, universally valid ontology. Instead of this universal ontology, scholars think of ontologies in the plural to distinguish between »modern« and »non-modern« (Latour 1993) or relational ontologies (Blaser 2009); or to categorize animism, naturalism, totemism, and analogism as four key alternate ontological orders (Descola 1992, 2005). These classification schemes should not be misunderstood as static or limited by clear boundaries. Rather, they continue to serve anthropological studies today as a theoretical framework to address a whole range of empirical phenomena. But it is not enough to approach these phenomena in the conventional ethnographic way. Instead, presupposition of the existence of plural ontologies requires an adaptation within the methodology and epistemology of the discipline (Hoolbrad/Pedersen 2017).

Whether from anthropology or from STS, both of these positions configure insights based on empirical data in an understanding that common binaries between nature—cul-

ture fail to capture the complexity and manifold empiricism exemplarily stated by Donna J. Haraway's (2003) notion of natureculture, captured also by Bruno Latour (1993) among many others (cf. Gesing et al. 2019). But as anthropology aimed to elaborate on empirical phenomena in terms of their underlying alternative metaphysics becoming manifest in ontologically altered worlds, science and technology studies grew interested in the exploration of multiple ontologies as products of (scientific) knowledge processes and everyday practices. Christopher Gad et al. (2015) summed up this division with the terms »epistemologization of ontology« (for anthropology) and »to ontologize the epistemology« (for STS). In this way, Gad et al. criticize anthropology for mainly emphasizing local voices and understanding phenomena as dedicated cultural phenomena and as wholes, being, thus, unable to shift their attention to a symmetrical approach of world-building processes.

While anthropological ontological studies sometimes attest to structuralist paradigms and interpreting phenomena as representative for whole cultures, newer studies are more in line with ideas of process, sociomateriality, and practice (cf. contributions in this issue). They contribute not only to knowledge production within anthropology, but also within the realm of STS that is still a »highly transdisciplinary research field« (Beck et al. 2012, 11, own translation). As the exchange and reciprocal participation in theories, attempts, and methodologies beyond the scope of one's own discipline is a genuine attribute of doing contemporary science, strict boundaries between anthropology and STS thus become fluid and dynamic. Understanding the entanglement between humans, things, and more-than-that (an effort common to both research attempts, though perhaps with varying valuations) as a source of reciprocal influence is worth a second look. Moreover, different assumptions about what the ontological looks like—whether as cultural metaphysics or as relatively stable but unpredictable and open-ended—need not necessarily result in conflict. Instead, these assumptions could refer to a scientific or traditionally divergent understanding about what is and what research should look for. Puzzling the picture together would then involve comprehending the anthropological ontos as being one *mode* of understanding ontologies that emerge out of sociomaterial constellations and assemblages. As Pickering (2017, 141) explains, it is *one* way of being-in-the-world that would no longer appear to contradict the representational idiom that proposes it.

In summary, we understand ontological turn to mean a *turning to* new foci, methods, and ideas, twisted by an onto-epistemology that understands ontology and epistemology as intertwined, seeking to adjust the creation of new analytical attempts, tools, and perspectives. Turns explicitly do not change the complete basic frameworks of disciplines, as Thomas S. Kuhn (1962) has pinpointed regarding paradigm shifts, nor do they supersede anterior ones, providing *the* solution pattern for contemporary needs. Rather, they exhibit a transdisciplinary shift to understanding and approaching phenomena in a more experimental and careful way, occurring in various disciplines and beyond them, thus, becoming turn*s* rather than a single turn (cf. Bachmann-Medick 2018, 17). All of the approaches that are subsumed under one or another ontological turn are part of »a broader Zeitgeist« (Fontein 2020, 13). Driving studies that foster the turn(s) are those that empirically ask what we can learn about the world through the ways that humans and more-than-humans engage with it, or from the multiple ways that these worlds emerge in dynamic and meaningful sociomaterial constellations. The aim of these studies lie therefore in the attempt to unravel the multiplicity and difference of being in worlds (cf. contributions this issue).

The unveiling of these multiple ontologies results from different positionalities within academia, indicating an unequal distribution of voice (or rather, whose voice is heard) in academic contexts. According to Zoe Todd (2014, 2016), indigenous thinkers have talked

about multiple ontologies and more-than-human entanglements for decades. Calling for more attention to quoting and position-filling practices in academic institutions, Todd asks why indigenous scholars and epistemologies have been overlooked in our Euro-Western-ized academia world—a world colored by colonial pasts that carry an enduring influence on contemporary and future conditions. We think that science should not stop with high-lighting these gaps and shortcuts. Instead, it should take alternative ontologies in science seriously and seek to actively involve scholars from the Global South, BIPOC, and other minority groups. David Graeber (2015, 35) even goes further when he attests the intolerance of the intellectual mainstream towards alternative traditions in science as one of »violent hostility«. The »ontological anarchy« that anthropology seeks to perform by eliciting rad-ical alterity is neither as radical nor as political as supposed. Proposing a realist ontology based on theoretical relativism, so Graeber, is a more radical endeavor by far.

A common aspect of studies that are conducted in one or another framework is that they regularly touch on moments of the political. Yet it is often claimed that the ontological turn and its concepts ignore such moments, as they concentrate on the fluidity and inconstancy by which things materialize and by which they come into the world, into being. This is es-pecially true for those studies emerging from STS that deal with what is commonly known as a flat ontology, which is charged with missing power asymmetries to exclusively focus on the symmetrical relationship that compose ontologies (cf. Ash 2020). However, we think that studies engaging with ontologies can indeed reveal relevant political insights. In light of environmental concerns and the dying of kinds, it seems highly necessary to unmask these political implications and explore the suggestions that such ethnographic research can offer for less violent alternatives of being-in-the-world.

Tracing the Political

Over the past few years, studies from the ontological turn have often elaborated on political dimensions and implications (Holbraad et al. 2014). In these, politics appears to be a label for the attempt to connect ontological multiplicity with the approach to ontologies, but its traces can be also found in research that seems to not directly deal with it, as we will see. As a chimera, the term ›politics‹ is a favored companion used to emphasize the relevance and meaning of the topics under examination along with its importance to a reconsidered worldview that still lies chained by structural inequalities that traverse space in time.

A thoroughly political approach to ontological multiplicity can be identified in *politi-cal* ontology, a framework developed by Mario Blaser (2009; 2013b), Marisol de la Cadena (2010, 2015) and Arturo Escobar (2017). The Latin-American scholars intend to integrate the insights of the ontological turn into analysis of political ecology, and thus make studies of ontological plurality sensitive to global power relations. In doing so, they likewise extend political ecological analysis to include the possibility of understanding local environmental conflicts as expressions of divergent conflicting ontologies (Blaser/Escobar 2016). Political ontology thus seeks to examine the different relational and modern worlds that constitute these conflicts, tracing the hegemonial processes of ontological appropriation (e.g., Glauser 2018; Petitpas/Bonacic 2019). The political moment lies in the competition between these ontologies fighting for interpretational sovereignty and the possibility of shaping future world-making practices with a very unequal distribution conditions and opportunities—and to the benefit of a modern ontology (Latour 1993) of Western institutions and (in these ethnographic cases) Latin-American state agents. It further lies in what Blaser (2013a, 24)

calls a »political sensibility,« that is, the attention and commitment to a pluriverse that must be defended in the presence of a universalistic mode. In this sense, ethnography itself should aim at performing the ontological plurality of the pluriverse instead of an ontologically homogeneous universe.

Casper Bruun Jensen (this issue, 100) criticizes the insistence on actively co-performing indigenous ontologies as »blown up to a quasi-universal level« that opens up a battle arena, which in turn helps reify antagonistic categories as a macro-ontological difference. And yet, in a world of extinctions and capitalistic encapsulation, we insist that it is still important to throw indigenous ontologies prominently into the discourse and make them visible. However, Jensen's point of critique goes further: he is skeptical of the benefits to a reification of a mere dichotomy between the West and the »Others«. Instead, he points to particular platforms of ontological production that are not exclusively enclosed in culturally homogeneous spaces. Ontologies can emerge from so many more constellations, such as encounters between human and non-human actors or infrastructures that can easily cross the boundaries of seemingly homogeneous categories such as culture. These encounterings result in »ontological experiments«, as Jensen and Atsuro Morita (2015, 2017) term them that take place on different platforms such as infrastructures from where new worlds are produced. The ›practical‹ transformation and emergence of ontologies on these sites is then of special interest within the category of a *practical* ontology (cf. Jensen, this issue; Gad et al. 2015). Accordingly, the latter concept provides »a handle for thinking through issues relating to non-human agency and the composition of uncommon worlds« (Jensen this issue, 93), where ontologies are »a lattice or patchwork of uncommon, but not unbridgeable, micro-worlds« (ibid. 100). In concrete terms, practical ontology seeks to understand the dynamic entanglements and interferences between practice *and* materiality that create new worlds; it examines different statements and voices as »situated among many other parts« (Gad et al. 2015, 77). Its political feature lies in the ground that *gives rise* to emerging forms of the political, technological, and cosmological. In this way, ontological politics is an active mode within a process of shaping realities as multiple while these realities are done and enacted (Mol 1999).

Whereas political ontology derives from the tradition of anthropological scholarship with a strong orientation towards the theoretical positions of Latour (1993) and Viveiros des Castro (1996, 2004), practical ontology, however, lies distinctively within the tradition of STS-scholars such as Gilles Deleuze, Félix Guattari and Isabelle Stengers—and carries ramifications for processual philosophers such as Alfred N. Whitehead. Furthermore, the two approaches differ slightly in their analytical focus. Approaches oriented towards political ontology focus on the empirical *reproduction* of certain metaphysical principles in order to critically point to invisible power structures and the ontological dominance of a modern or naturalist metaphysics. Practical ontology locates its interest in the *production* of ontologically multiple fragments of being and of the world. In the political lies a moment where both approaches come together and overlap. Political then becomes a positioning by the researcher its own; it further refers to moments of clashes between different worlds and to an ontological platform on which political negotiations take place.

The Contributions

The contributions in this issue give insights into river restoration and conflicting co-management of natural resources. They depict daily resistance on tea plantations and reflect on eating and food. In doing so, they invite us to very dispersed places—from India to Brazil

and Alaska to Germany. In their variety, all of the contributions focus on conflicting or problematic aspects in the specific entanglements of human and non-human with the environment. They critically engage with specific ways of world-making while pointing to possible alternatives.

The contributions of Stefan Laser and Estrid Sørensen, of Anna Heitger, Sabine Biedermann and Jörg Niewöhner and of Desirée Kumpf exhibit ontologies as constantly enacted through practices. We therefore situate them in the realm of practical ontology. Their focus lies not so much on the relational difference between diverse ontological metaphysical orders, but on the dimension of practice that emerges continuously in ontological constellations. Stefan Laser and Estrid Sørensen search for multiple ontologies of the Emscher river in their contribution »Re-Imagining River Restoration. Temporalities, Landscapes and Values of the Emscher set in a Post-Mining Environment«. They unravel how particular temporalities, landscapes, and values are enacted together with the Emscher restoration, shaping the multiple ontologies of the river in quite different ways. To depict the river's multi-vocality, the authors unveil three different stories of restoration. These stories present and thus enact the Emscher as a modern river, as part of an infrastructure, and finally as being in ruins. The final, officially untold story points to alternative possibilities of engaging and living in a post-mining reality.

A quiet different empirical topic is investigated by Anna Heitger, Sabine Biedermann and Jörg Niewöhner in their contribution »More-Than-Human Eating. Reconfiguring Environment|Body|Mind Relations in the Anthropocene«. From analysis of three different cases of anticipatory practices (future food design, developments in microbiome science and application, and future food security in Germany), the authors unveil that the boundaries between body and mind, human and non-human, and environment and body are constantly being transcended. The common response to »ontological uncertainty« from the various actors of the three cases is biopolitically conventional and dependent on active ontonorms (Mol 2012). But the modi of governmentality, which takes the form of biopolitical measures that aim to control a singular and political subject, is outdated. More-than-human eating practices unravel the subject as being a multi-species collective that is only metastable in its form to the outer. As such, it is controlled and combatted by technologies that are rather geopolitical—that also impact human entities much as biopolitics also affect the environment. Conversely, »biopolitical and geopolitical interventions have lost their self-evident subjects« (Heitger et al. this issue, 46).

With reference to Mol's (1999) ontological politics, Desirée Kumpf understands ontology as a manipulation of reality in her analysis of multiple ontological politics on two tea plantations in West Bengal and Assamese Dibrugarh. In her contribution »Multispecies Monocultures. Organic Agriculture and Resistance on Indian Tea Plantations«, she deals with different practices of diverse human and non-human actors. Altogether, these practices enact a specific form of agriculture—one that is based not least on authoritative simplifications of plant morphologies and precarious labor. From the perspective of multi-species ethnography, Kumpf focuses on practices of resistance among tea plants and plantation workers. In understanding these practices as a way of doing ontologies, Kumpf recognizes the enactment of ontological versions to be unequally determined. Here, resistance practices situated at unruly edges are handled as places created by authoritative ontologies that dominate world-making processes. In this case, these processes are enacted as simplifications of plant morphologies. The ontological perspective she unveils thus becomes a means of critique: even though plantation ontologies alter, working conditions remain precarious and authoritative ontologies still dominate the ontos of plantations.

Papers by Paula Schiefer and Michaela Meurer deal with political ontology. While Schiefer presents a paradigmatic case of ontological conflict (in the sense of political ontological theory according to Blaser and others), Meurer explores the theoretical interspace between political and practical ontology. Paula Schiefer demonstrates the potential for conflict between different ontologies in practice in her contribution »Negotiating Salmon. Ontologies and Resource Management in Southwest Alaska«. The text pointedly addresses conflicting ontologies between the indigenous Yupiit and state fishery managers when it comes to co-management of King Salmon in Bethel, a Southwest Alaskan village at the Yukon-Kuskokwim river delta. Whereas the latter ontology is based on scientific understandings of reproduction and home as concepts to enlighten the question of why salmon return to their birthplace upstream, indigenous people understand the return of the fish as integral and consecutive to the reciprocal relationship between humans and animals. These different ontologies conflict in management attempts and fishing practices, eventually leading to different strategies for sustainable management. Schiefer uses the empirical example to discuss the extent to which existing hierarchies from colonial settler contexts continue to perpetuate ontological hegemonies today. Deliberations about fishing management then enact the conflict produced from ontological encounters in the form of discussions, criticism, and acts of resistance, further yielding an act of decolonization.

Michaela Meurer similarly addresses an empirical situation of co-management in her contribution »Rethinking Political Ontology. Notes on a Practice-Related Approach and a Brazilian Conservation Area«. The Resex Tapajós-Arapiuns, a conservation area in the Brazilian amazon region, is jointly managed by local residents, state actors, and civil society organizations. When negotiating binding norms for local resource use, ontological multiplicity becomes apparent. Parallels to situations of ontological conflict identified by Mario Blaser are striking. Still, the framework of political ontology fails to adequately illuminate the highly complex situation: local groups are too heterogeneous and the ontological multiplicity of their world-making practices cannot be condensed under one specific ontology. To come to terms with such fluid ethnographic situations within a political ontological analysis, Meurer imports approaches from practical ontology to develop a practice-related design for political ontology based on the notions of plural ecologies (Sprenger/Großmann 2018), ontological consequences, and contextual assumptions.

Finally, Casper Bruun Jensen closes the issue with his contribution »Practical Ontology Redux«, which offers a genealogy of practical ontology. This theoretical contribution is deeply entangled with his own experiences in the elaboration of ontologies. By examining different strands of the ontological turn, he defines the concept of practical ontology as an umbrella term that includes ontology(-ies) in the singular and plural. Practical ontology in the singular is a profoundly open-ended approach to explore how and by whom worlds are performed, maintained, questioned, transformed, or destroyed. In the plural, it describes specific and distinguishable worlds in terms of their composition, maintenance, etc. These are obviously (and crucially) described or otherwise performed by the researcher. Since the researchers are themselves part of practical ontologies, including those that are described, they are not necessarily the only ones through which knowledge about an ontology is produced. Within the framework of practical ontology, we are to »keep up to speed with the pluriverse. And, in doing so, perhaps also play our part in keeping cosmopolitics alive« (Jensen this issue, 102). In the following section, we accept this invitation by tracing and unfolding (cosmo)political attempts and lines within the contributions on hand.

Transversal Fields of Politics

Contemporary processes, dynamics, and structures of power are complex and multifaceted: they do not emanate from state authorities or centralized institutions alone, but are located at all levels, produced, contested, and maintained by a multitude of actors and a variety of practices. To come to terms with these political complexities and the growing absence of a clear locus for power or personified authority, anthropologists Jens Adams and Asta Vonderau (2014) propose an anthropology of political fields. Such fields are inhabited by numerous individuals, institutions, resources, and bodies of knowledge. These fields are in a state of continuous and dynamic creation. Their formations cut across fields as they form themselves or disappear again.

Since the wielding of power in the formation of political fields often occurs invisibly, ethnographic studies focus on specific, empirical, tangible, material formations and spatial arrangements. These arrangements represent and express specific power constellations and can thus be interpreted as a materialization of political relations (Adams/Vonderau 2014, 9). Ethnography offers a fruitful way to address and unravel these unseen entanglements as it can approach power empirically in two different ways. First, it can disentangle, deconstruct, and split apart the moments and formative processes of materialized power in order to analyze which logics, rationalities, and power relations are inscribed within. This is the path taken by Schiefer, Laser and Sørensen, Heitger et al., and Meurer in this volume. Secondly, arenas of interaction and negotiations can be helpful in characterizing and identifying powerful relations in a political field, as Kumpf elicits with her example of the entangled practices of resistance among planters and plants. As both approaches enable insights into how »spaces are ordered, resources distributed, people categorized, and cultural meanings produced« (ibid., 9-10, own translation), they also unveil negotiations about worlds and supposed ontological certainty. The contributions in this issue indicate that engagement with the formation of political fields has not been exhausted in terms of institutions, actors, resources, and knowledge. They also highlight the importance of questions about ontos and ontologies, about the real and the unrealized. In doing so, they illustrate how the formation of the political always involves wrangling over a certain interpretational sovereignty in the field that defines what counts as true and valid—and what does not. These struggles over sovereignty further implicate the ontological assumptions from which phenomena relating to the human-environmental crisis are understood, handled, and transformed.

Adding to the analysis of locally observable deliberation rounds and political negotiations, the contributions reveal that the political field is no mere matter of geographical locality. This revelation disentangles the empirical cases from being only understandable as bonded to specific groups of actors or to particular locations. The political field is in this way rather realized through *situated* practices in sociomaterial constellations that stretch beyond single actors, pointing to a negotiation and formation process that is located *transversally* between different actors sitting in different places. This is for example evident in the contribution from Laser and Sørensen, when others than those actors and stories that are easily accessible in the living present interfere with the stories from the Emscher river, which clearly transcend contemporary time and place. Political fields are thus formed in transversal places with situated practices, they become material in geographical loci, but are rarely limited to them, as actors, topics, discourses, and rationalities transcend these places. At once entangled and relational, local and non-local, we propose thinking of political fields as transversal and situated among human and non-human actors alike. In this sense, we deal with more-than-human politics.

Opening the scope to holistically grasp more-than-human entanglements necessarily implicates (re)considering one's positionality, vitalizing in this way Karen Barad's (2007) notion of onto-epistemology, which identifies the intermingling between ontology and epistemology. The place from which the researcher derives is intertwined with the researcher's scientific socialization, perceptions of the world, and understanding of what counts as rational, true, and valid—thus impacting epistemic categories and practices. At the same time, the mind and body of the researcher is also permeated by the field. Ethnographic research into ontologies aims not only to unveil different stories, narratives, and artifacts that tell us something about different ontologies *somewhere*, but also to emphasize our positioning and linking in it. This is, at best, an attentive attitude to avoid the »epistemic violence« that is inscribed in Euro-Western academic treatments of the knowledge of others, so Zoe Todd (2014, 245). As such, the researcher is likewise an »ontological co-inventor« of these entanglements that stretch along the field; they are compelled to research in an »emetic« way that aptly characterizes the inseparability of emical and etical research in practice (Jensen 2019, 51). Blaser and de la Cadena (2018) speak in this sense of ethnography itself as a very act of world-making. This highlights the inextricability of the researcher and their field as something that comes into being, as well as points to the political potential within the processes of knowledge production.

In any case, the telling and writing about alternative forms of worlding contributes to the creation of an alternative objectivity. This, in turn, points to the possibility of becoming valid even beyond its own onto-horizon. The enactment and living of alternative sociomaterial ways of being can lead to new, relatively stable forms of life. These become present through a constituent politics that produces »alter-ontologies« (Papadopoulos 2011). Politics that are often identified as being either a form of expertise or institutional participation (as well as the inclusion of the non-human alter and marginalized lifeworlds) preserve accordingly only a constituted order. Understanding politics as a practice that »attempts to create alternative forms that primarily aim to make new socio-material realities« (ibid., 191) refers to the creation and constitution of altered worlds of existence. In this sense, the politics must be *relationally constituent* as it enables the *production* of alternative ontologies that exceeds visible and dominant forms of life that function as a set of constraints against which new possibilities for action need to evolve. They cannot be bypassed because each action and each practice takes place within this precise time-space realm for that exact life form. New forms of life are constituted by a politics that strives for the creation of new worlds (Papadopoulos 2011, 192), as we have seen. As such, the contributions unveil differentiated perspectives on world-making practices. They do not solely highlight differences and power relations. Rather, they are political as they foster the co-constitution of alter-ontologies and thus care about relations in the pluriverse (Puig de la Bellacasa 2012; Blaser/de la Cadena 2018). In this sense, the political lies not only in detecting and marking difference but in the *careful production* of »differences that make a difference« (Bateson [1972] 2000: 178). Academic contributions become political in that they contribute and endeavor *to give form to* alternative world(s).

So, acting politically is not only about the constitution of additional alternatives. Action also directly intervenes in the dominant forms of existing life. The partly abstract deconstruction and tracing of sociomaterial positions and relations from where ontologies are outperformed and enacted allows the researcher to take action through intervening methods such as infrastructural inversion, a research method that interrupts invisible (infra-) structure at concrete cutting edges. These interruptions create synthetic moments of friction, chaos, and seeming disorder (Bowker/Star 1999; Tsing 2005), unveiling opportunities to challenge and contest dominant forms of life. This could involve, for example, drawing

pictures of how to best catch salmon in a repetitive way (cf. Schiefer this issue) or manage plantations (cf. Kumpf this issue). Being political, then, is to willingly disturb ongoing patterns of domination; it is to intervene in powerful moments of negotiation that enact worlds in their ontological constitutions (cf. Blaser 2009). Beyond the text-level, a concrete method of political intervention might involve the creation of chaos in a moment or the provision of a differently ordered space. Another form of intervention is one that intra-actively aims to open up gridlocked concepts and widely accepted facts; it intervenes not in between presumably independent entities and relations but in the incomplete and open becoming of things. Karen Barad (1996, 2011) defines possibilities for political intra-action when speaking of constantly iterative intra-active patterns that, just as Papdopoulos (2011) revealed, perpetuate their form (or pattern, in Barad's terms). A politics of spacetimemattering aims at questioning, testing, tearing down and, above all, shifting boundaries that limit phenomena to objects (including concepts, for example). After all, »[t]he shifting of boundaries often helps bring to the surface questions of power which the powerful often try to submerge« (Barad 1996, 187). Interventions in iterative intra-action unravel new intonations that render reality differently and thus affect the constitution of the ontos.

To sum up, politics are conflated with an onto-epistemology that to produces knowledge and shapes realities in an intertwined relation. This points to the inseparability of ethics, ontology, and epistemology. It further implicates the co-constitution of world that emerges from intra-actions between human and non-human alike. The contributions highlight the decidedly political character of these intra-actions, unveiling the multifaceted, complex, empirical moments and everyday dimensions through which power unfolds. In this sense, the political is a critical endeavor to unveil hierarchies of power, structural inequalities, and patterns of hegemony. It is, further, the attempt to illuminate, realize, and co-constitute alter-ontologies and new forms of life. Through this effort, these studies provide alternatives to current struggles with the anthropogenic effects—from climate change to Covid 19, and from forest fires to waste pollution. Finally, the political refers to an opportunity to overcome a hegemonic reality. The contributions »tak[e] ethnography as a tool to map ontologically distinct positions across more-than-human relations« (Kumpf this issue, 60) that simultaneously embrace and constitute transversal political fields. They are thus part of world-constituting practices, enabling the emergence of indifferent sociomaterial constellations, expressing and reflecting their specific ontological aspects, and reproducing and/or transforming their constitutions. They highlight the possibilities and constellations that often go unseen from a mere anthropocentric angle. By uncovering the ›otherwise‹ and turning worlds upside down, they add a careful sensitivity to questions of onto-hegemonial patterns in the world. As it happens, studies in the realm of ontological turns are anything but apolitical!

Eventually, we are left to ask what future we imagine together. As reality is part of a constant process of negotiation, it takes a repetitive form that impacts what is. Heitger et al. (this issue) touches in their contribution on the topic of uncertain ontologies and control measures that automatically become effective. This gives rise to a question about the temporalities that determine quotidian practices and politics—a question that has gone unrecognized in the transversal fields of politics, at least until now. How do we handle the indeterminate nature and uncertainties of uncanny ontological futures? And what can we learn from materialized forms of life that are outdated, wasted, or indefensible (both speculatively and futuristically) for our environment? Or from those forms that survived, unscathed, in artifacts and anticipated symbols such as heritages and memorials? From those that pop up in dense ontological fog patches as a yet-unrecognized road sign of what will come?

The Spectered Ontos

The transversal fields of politics have provided a useful tool for unravelling invisible asymmetries and relations. This is true even for the transversal field that stretches across encounters between non-humans, humans, and more-than-humans in a (situated) space. It must thus be relevant to transversal temporal dimensions, too, when we ask what future we would all like to share. The analytical point of entry through which we grasp these transversal fields has been revealed as one of practice. Practice does not simply refer to the spatial field from which it emerges or exists in. It also points to a certain temporal directionality: the way that things, situations, and issues are practiced at present is coupled with both visions of the future and the clutches of the past. While quotidian practices happen in the *now*, perpetuating ongoing situations, imaginations, and things, they anticipate ideas about the future (cf. Heitger et al. this issue). These practices are further built on imagined stories about the past (cf. Laser/Sørensen this issue, 32). Ideas and imaginations materialize in things, artifacts, and stories that endure over time, retrospectively impacting on our daily practices. This is the case when, for instance, weeds grow unruly due to resistance practices by plantation workers fighting for a better (working) future (cf. Kumpf this issue).

Although these imaginaries and ideas often disappear into an everyday routine, they do sometimes appear—suddenly and unforeseeably—in moments that grasp our attention. As the example from Heitger et al. shows, ontological uncertainty projected as future imaginaries is captured and domesticated by anticipatory-yet-present practices, models, measures, and calculations; it is translated into other social realities and contained by biopolitical or geopolitical attempts at control. Ontological uncertainty is thus materialized. Suddenly, the future is no longer fearful and uncanny. It is calculable! The ontos is extended by constellations of sociomaterial components from this world. Drawn into the now of earth's orbit, it is determined, stamped, categorized, and released into discourse again, where it takes hold as a (to some extent) fixed quantity with pre-determined properties. Accordingly, the »frightening uncertainties« of the future (Laser/Sørensen this issue, 32) are frightening no longer as they seem to become controllable. In the comfortable light of what we know how to control, images of haunted futures that cavorted in anthropogenic nightmares emerge as changed. But even when uncertainty is tamed, the example points out the fact that »something« appeared trans-temporally and unexpectedly—much as a specter or a ghost that appears repeatedly, without evidence of a definite beginning or end. It stands in between two parts. It specters.

This is very reminiscent of Jacques Derrida's hauntology—that is, the attempt to open up a science of ghosts. Derrida's (1994) notion of hauntology describes study of phenomena that are haunted by ghosts of the past or a future imaginary. Derrida explored this in the context of determining whether Marx and the ideology of Marxism is still among us. With reference to the idea of haunted places, he concluded that Marxism becomes visible in spectered moments that permeate from relevant thoughts and ideas regardless of their potential success or past failure. Its appearance jumbles time. The present falls apart when specters appear, emerging from the disparate and plural voices of what was and what will come. These ghosts are »neither living nor dead, present nor absent, not belong[ing] to ontology, to the discourse on the Being of beings, or to the essence of life or death« (ibid., 63). They live somewhere in between past and present, life and death. As such, they divest themselves of the logos of the ontos. Here, Derrida speaks of a metaphysical ontology that encompasses the philosophical thought of his time (one initially considered immutable). But in the context of the ontological plurality presented here, it cannot be said that those

very ghosts are ontologically uninhabited—even if the eerie spirits of the past and conjurations of the future, which lie motionless in the in-between, never present as such. Rather, they alter the reality in which they appear as a present event just as they have effects on the ontological composition of the world and, in this way, they also appear as political actors who represent invisible dimensions of power in transversal fields of politics.

Prompting reactions from us in the present, these ghosts exist everywhere at any time, sitting between what is real and what is not. From there, they can haunt us and exude fear. They can also give rise to ideals and promises about what is to come. Heitger et al. reveal how to capture the specters of an uncertain future, while Laser/ Sørensen point to a strand of multiple temporal and narrative entanglements in which one of the storylines of the Emscher river guides the present. In the latter, modern restoration extends from a dirty past that emerges as a specter of the historical present. Here, the incantation of something—whether the assurance of a food future or supposedly certain strategies for the sustainable management of the rainforest (cf. Meurer this issue) or a tea plantation (cf. Kumpf this issue), king salmon (cf. Schiefer this issue) or river restoration—likewise creates reality and forms life. Responses to such eerie moments, in which climate crisis phenomena appear and act with all their presence, are then characterized by a *similar* form of reaction that is bio/ geopolitically induced. Through similar and habitual practices, this perpetuates the ontos from which it originates (cf. Heitger et al. this issue). Ironically, those practices provide a home for a certain ontology to which specters do not (directly, anymore, or yet) belong. They impact present practices when they elude a single ontology. This ontology is not exclusive, as Derrida states. Because they walk as ghosts between the living and the dead, they are an *active* part of multiple ontologies.

Imaginations, stories, and artifacts of the past and future actively change reality and existence when triggered by emotions, such as fear, anxiety (but also pride). They thus shape ontologies as dispatches from any time that know neither place nor causality, but belong to land, tradition, and history. Modes of being, the plural temporalities of what was and what will be deterministically subjected, materialize in eerie moments—moments in which we become sensitive to ghosts. This determinacy is expressed in the flaring iridescence of sometimes-visible ghosts that are inscribed in the vivid events of reality, blinking and sparkling in eerie moments. Fear lies in the possibility of a future in which populations die a slow death because of a toxic river, in which indigenous peoples have lost the rights to use natural and spiritual resources on their land, or in which the subjugation of physical labor finds legitimacy in ties to dominant social conditions such as citizenship. It is precisely this sensible attitude that shapes contemporary actions and practices, as illustrated in the example of the research consortium on food security implemented by the German Ministry of Education and Research. When the eerie moments in which they appear are perceived, specters quietly and surreptitiously change in ways that shift our (world-)views on things. This uncanniness and fear, then, inscribes itself. This is less because we are affected by these environmental phenomena and more because, as specters and heralds of a bitter future and past, they make us *feel* a responsibility to tradition, history, and land in terms of our inheritance of their lived presence.

In the context of this editorial, it has become visible that ontologies are reshaped by the sociomaterial configurations enacted and done by the practices and politics of constituents (both those concerned with the production of scientific knowledge and everyday) that (re-)produce reality. Through iterative repetitions of *what is*, practices evoke change on an ontological level. Emerging from multi-temporal sources and simultaneously referring beyond themselves, it is precisely these iterative practices of the political and of being that

escape temporal boundaries. The appearance of specters poses critical questions about reality, demanding answers in the form of modes for action from the living present—answers that derive directly from contested worlds. In this eerie moment, specters are among us. They are part of these sociomaterial constellations that alter reality and embrace effects on worlds. Specters bear witness either as a promising ideal for the future or as a conspirational memorial to plural pasts. This is the »non-contemporaneity with itself of the living present« (Derrida 1994, xviii) because »what happens between two, and between all the ›two's‹ one likes, such as between life and death, can only *maintain itself* with some ghost, can only *talk with or about* some ghost [...]. So it would be necessary to learn spirits« (ibid, xvii). Conscious cont(r)act and engagement with the things that haunt the temporal interstice is then not only a being-with these very specters of the ontological, as Derrida describes it; it is also a *being-in-the-becoming*, a *cooperative being.* Cooperating with spirits involves conscious engagement, a diffraction or deconstruction of an alterity or a similarity from which worldviews (further) emerge and are formed. This is a »politics of memory, of inheritance, and of generations« (ibid., xviii) and here, we rejoin Derrida. As a constituent politics (defined earlier), it can have a transformative effect on ontologies in the context of a spacetimemattering. Cooperation with the ghosts of the ontos is an act of situating oneself politically, critically, and responsibly, co-becoming in a common but non-contemporaneous environment. It is making oddkins with specters.

Unveiling Multifarious Worlds to Jumble the Onto-Order

Anthropologists and STS scholars (among others) have intensely discussed questions regarding what the ontos is, when it comes into being, when it is altered, how, and the extent to which it may be able to change at all. This editorial has discussed different political endeavors in and for environmental matters, unveiling the multiple dimensions through which power can unfold in transversally situated fields. Unveiling is able to bust the iterative intra-actions that bond categories, ontonorms, and scientific facts to one another, eventually overcoming the realities of domination that exist today. Multifarious worlds thus function as a corrective to the hegemonial worldviews permeating forms of life from which these views do not originate.

In this regard, eerie moments teach us to grasp moments of friction arising from spontaneous ruptures in reality as something that is complementary to the method of intervention by research that synthetically creates those moments. When specters from past and future temporalities emerge in lived presents, they jumble not only time but also seemingly fixed ontologies. In this sense, they jumble ontological orders. They do so both in the form of their existence, as dispatches from any time and therefore any-ontos, as well as in the way they activate modes of controlling mechanisms and actions that otherwise remain uncritically in the background. In this way, they become tangible for critique.

Specters as a figure in-between in common but non-contemporaneous environments also reveal that environmental matters are heritage. Specters thus impose a historical responsibility that fosters justice by unravelling structures of injustice in situations, places, traditions, and histories with which we are strongly and ontologically entangled. This is what has been called cooperation with ghosts, which sees us enter into a cooperative being in which we altogether become an answer to a politics of spacetimematterings. In this becoming, nature is no longer separable, but as Donna Haraway (1992, 2003) once noted, a world of embodiment. The spirits we associate with are boundary figures that reside in our

case, between time and ontological order. Building heterogeneous allies with specters can additionally deconstruct ontonormic hegemonies and ontological orders. As we have seen, specters can be captured and miscalculated—but they remain themselves, nonetheless. They are a testament to our mode of production, capitalism, and the subjugation of labor, but they are also entangled through a recurring haunted image with the world through its temporal interconnections. Making oddkins with specters means strengthening nature in its various entanglements.

In the end (or better yet, at any time and any place), we are urged to make entangled relationships with humans, non-humans, more-than-humans, specters, and imaginaries for a planetary future and the stories of our past. In this way of making and cooperating with, we can permeate the world with multi-vocalities, multiple pluriverses, and eerie witnesses in the form of multifarious ontologies. Altogether, these will contribute to a holistic decolonization of knowledge and scientific rationality—and being in the world.

We will continue, in this sense, to knot indispensable ties to others, ours, and oddkins with the aim of jumbling the prevailing onto-order.

Acknowledgements

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