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Subtle potentials as emancipatory forces? Recasting the micropolitics of risk and disaster management

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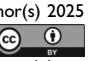

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Abstract

Drawing on the philosophy of movement and processes, the theory of attention and critical disaster and risk studies, this paper explores how the ways of dealing with alterity such as volcanic toxicity involve enacting the emergence of subtle potentials. These subtle potentials are moments of pure transformation in which alternatives to an inescapable and homogeneous future are realised while their subtle nature brings them into the periphery of our collective and personal attention. Influenced by the work of cultural theorist Yves Citton, the paper argues that subtle potentials are activated through a modality of free-floating attention that allows those confronted with hazards and risk to reorient their focus through different rhythmic processes that distort the fatality of permanent volcanic emissions (PVEs). Building on these conceptual relations, the paper draws on three interrelated rhythmic tales that help us understand how these subtle potentials emerge and are intertwined in the wider fabric of a micropolitics of spatio-temporal displacement, which in turn helps us recast those seen as vulnerable to PVEs as vibrant political actors of the everyday. The paper concludes by highlighting the relevance of subtle potentials when working with communities affected by hazards and risk and argues for a more complex understanding of the processes involved in shaping the micropolitics of risk and disaster management.

Keywords

Space–time, attention, Nicaragua, disaster risk reduction, vulnerability

Beyond the apocalyptic scenes that retain our attention when volcanos erupt, air pollution in the shape of ashes and gases has remained relatively understudied by the wider field of critical disaster and risk studies (CDRS). Unlike rocks and solidified lava, volcanic gases dissipate when volcanic activity recedes, or, in the case of persistent volcanic emissions (PVEs), which are a cocktail of gases[1]

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originating from lava lake volcanos, such as Masaya, situated in Nicaragua, gases fluctuate according to a degassing process that occurs respectively with magmatic activity. Degassing is thus a sort of extension and contraction process that allows the volcano to impose its own rhythms and presence on its surroundings. These gases also transform everything that comes into contact with them. They turn the air into a blueish haze of toxic particles that then changes rainwater into acid rain, triggers skin irritation and respiratory problems in humans and causes defoliation in vegetation and surface water pollution (Baxter et al., 1982, 1983). When one looks closer at PVEs, their transformative agency is not restricted to where the wind direction transports them. Rather, they are an integral part of a complex web of human–more-than-human relations that connects the magmatic and areal materialities of the volcano with everything that resides at the surface of the earth, including the substance of politics (Clark, 2011, 2020). By looking at how communities living with the air pollution of volcano Masaya, which is located 12 km to the southeast of Managua, the paper documents how Masaya's presence through the agency of PVEs becomes entangled in the fabric of a micropolitics of spatio-temporal displacement. It is micropolitics that involves the manifestation of everyday life practices that are leading to small changes, impulses and novelties that disrupt both the continuity and the uniformity associated with the preformatted fatality of living with PVEs. This micropolitics also causes micro-shifts in the experience and production of space–time by re-orienting our individual and collective attention (Citton, 2017) on what surrounds and composes us through what I define as *subtle potentials*.

These subtle potentials refer to moments of emerging unexpectedness in which alternatives to what seems to be an inescapable and homogeneous future are realised while their subtle nature, brings them to the edges of our collective and personal attention. By drawing on the philosophy of movement and of processes (Bergson, 1907; Whitehead, 1978; Deleuze, 1968), on the theory of attention (Citton, 2017) that I link with the wider CDRS, this paper aims to theorise and to shed light on the emergences and relevance of subtle potentials. This allows me to argue that subtle potentials are involved in redefining those primarily seen as 'vulnerable' to risk and hazards as vibrant political actors of the everyday life. This exercise of theorising subtle potentials allows the paper to use human–more-than-human relations as a situated metaphoric example of transformative hope, a hope that pluralises potential transformations within the dictatorial regime that is contemporary Nicaragua (see Close, 2016).

Before going further, it is important to see potentials as dormant transformations occurring in the infinite openings of the becoming, a becoming that corresponds to the succession of different states composing the dis/continuous movement of what counts as reality (Bergson, 1907: 46; Whitehead, 1978: 35). They are never complete, as they are processes that either can or cannot be materialised, but their emergences are vital to both invention and creativity. They can be seen as fragments of new beginnings that allow us to realise what could become possible/otherwise, while inviting for experimentation. They enable new kinds of connections to be felt and made intelligible and actionable. Therefore, looking at their emergence invites us to change the analytical lenses that social scientists and humanities scholars of risk and disasters have used to understand the interconnections between the effectual agencies of disasters and risks such as PVEs and the lives of those impacted by their presence/emergence. An interest in the formation of subtle potentials also includes a willingness to step outside the vacuum of an attention politics (competition and negotiation whose aim is to capture our attention) that has been dominated by what Eve Sedgwick (2003: 139) defined as the 'paranoiac project of exposure' of critical theory. This project has sought to expose the murky processes that are part of defining the macropowers of oppression that are implicated in the fabric of risk and disasters politics. Subtle potentials, then, call on social scientists and humanity scholars to redirect both our individual and our collective attention to what has been left outside the reductive effects of the macropolitics of destruction. While subtle potentials resonate with Michel de Certeau's (1986: 36–37) strategies and tactics (and the interplay between them) or with James Scott's (1985) peasant strategies of

resistance, they are not the fruit of predetermined intentions and preconditioned knowledge, which have more to do with the trickeries meant to dislocate dominant powers or social class struggles. Their emergence implies that one is alert to/aware of the possibilities and eventualities that could transform intentions into change (and difference). They are potentials that occur in the time step of actualisation, meaning at the junction of memory and the not-yet, or what Henri Bergson calls the virtual (Bergson, 2007; see also Grosz, 2004). They are potentials that influence the course of unfolding events but that do not aim at controlling them entirely. While they may share similarities with what Brian Massumi (2015) calls onto power in their capacity to generate emergences that seek to organise the not-yet, subtle potentials do not occur as a pre-emptive and universal biopolitical modality of macropolitical power. Rather, they offer a capacity to look beyond and through the macropolitical ecologies of power to see a mosaic of possible micro-connections that are blurred by the hyperattention given to the processes of obliteration critical social sciences have been interested in revealing.

Following this introduction, the paper explores the methodology that has allowed subtle potentials to be documented through those living in the vicinity of volcano Masaya. This methodological engagement allows me to situate how subtle potentials have been theorised and captured as well as to provide a wider research context regarding the political regime within which the research was conducted. The second section of the paper engages with the critical studies of risk and hazards and highlights how they have overlooked the relevance of different attentive regimes (the ways in which we pay attention to what surrounds us and our relationship with these surroundings) that are involved in the shaping of risk and disaster politics. In doing so, the paper engages with and resituates the concept of free-floating attention in spatial theory (drawing on Yves Citton's work (2017 and 2019)), which helps us to better capture the relationships between attention and rhythms and the capacity to redirect and re-actualise what counts as the now in the formation of a variety of subtle potentials. This conceptual discussion enables the paper to move on to the empirical discussion, which plunges us into the daily lives and practices of those impacted by PVEs through three simultaneous and interrelated rhythmic tales: (i) jumping into potentials, (ii) slowing down via experimentation, and (iii) waiting for the *jícaro* tree and the standstill occurring before a new beginning. By going through these three interrelated tales, the paper will offer a different reading of those who are considered powerless in the face of PVEs. This alternative view captures the elusiveness of subtle potentials and their intertwined relations with volcano Masaya's agency. This demonstration allows the paper to conclude by underlining the multiple and coexistent potentials that are contiguous with volcanic life; those seen as having no power to ask for a different world and politics emerge as active agents of micropolitical change.

From smoke to rust: exploring the emergence of subtle potentials in *El Pueblo*

Methodologically, this paper draws on constructivist grounded theory (Charmaz, 2014), whereby research is seen as a process of intuitive discoveries that builds on sets of co-constructed knowledge that emerged from ethnographic observations and that has led to 15 semi-structured interviews[2] conducted with 20 people and 3 focus groups (varying between10 and 13 individuals) conducted in a Nicaraguan communities impacted by PVEs (see Nobert et al., 2020). The fieldwork was conducted as part of a wider transdisciplinary project led by a team of global North and global South volcanologists, anthropologists, human geographers, historians and environmental medics. The social science research concerned developing a mid-range theory of the processes that allow communities impacted by PVEs to deal with their effects. As part of grounded theory heuristics, the research involved using a triangulation of qualitative methods and data that also included note taking, memos, photographs and small talk, which are ordinary, brief conversations that allow researchers and participants to engage

with and relate to the topic of PVEs (e.g., discussions ranged from the weather to fluctuations in volcanic activity) (Matthews, 2011; Driessen and Jansen, 2013). The research process also involved what Claude Lévi-Strauss (1962) called *bricolage*, which corresponds to a process of sense making that built interpretations from the limited fragments of heterogenous processes that were captured during fieldwork and then re-actualised by relating them to more data (see Johnson, 2012). This bricolage process became part of an iterative round of coding achieved by using an abduction process analysis (Charmaz, 2014; Timmermans and Tavory, 2012), which allowed for the emergence of surprises and creativity in the data analysis and for the theorisation of subtle potentials to come together.

While the research occurred in a (post)colonial setting, grounded theory conceptualises the researcher as situated within the data, which recognises positionality within the research process. Thus, this paper is written from a global North perspective, but a perspective that draws on a relational understanding of the research processes while recognising that the fabric of the research project draws on so-called Western epistemologies and the wider experiences that have shaped my life trajectory and affected my analysis. This means that my own perspective and analysis are both constituent of the data and of the experimentation processes that have led to the theorisation of subtle potentials. This wider ontological mediation transcends the political fixity that has sometimes served to define the flat geometries of power (see Allen, 2016) used to study and conceptualise the so-called powerless (e.g., Scott, 1985). From a grounded theory perspective, the open and unfixed meaning of data and theorisation enables the research process to engage with what Jean-Luc Nancy (2013) defines as *l'être avec*, the *being-with*, which implies the necessity for singularity to relate to community. From an ontological perspective, this transversal look at the being-with also means that from a reflexivity standpoint, the researcher is implicated with the participants in the processes of thinking and shaping existence rather than being reliant on two different and distant forms of definite existences.

One of the communities the project was immersed in consists of a small village of around 200 people. It is mainly composed of families who were allowed to take ownership of the lands they had been farming for generations as a result of the Sandinista (*Frente Sandinista de Leberación Nacional*, or FSLN) revolution in 1979 (see Martí í Puig, 2010). Following the defeat of the FSLN at the 1990 elections, there was a series of political reforms that sought to liberalise the economy and to consolidate the foundations of a participatory democracy. With the fragmentation of the liberal parties throughout the 1990s, a new kind of polarised politics emerged and set the perfect foundations for the re-election of the FSLN in 2006. From that point on, the country has seen a shift from a competitive electoral system to a hybrid authoritarian regime that allowed elections but without the capacity to ensure that democracy was exercised (see Martí i Puig and Serra, 2020, citing Schedler, 2004). This centralisation of power is known as 'Danielismo' (Martí í Puig, 2010: 89; Bay-Meyer, 2013), which refers to a personalist regime focused on Daniel Ortega and his informal circle that has become the essence of the FSLN. Danielismo has been associated with what Salavador Matí i Puig and Macià Serra (2020: 126) call a *caudillo* regime (in reference to General Francisco Franco) in which the *caudillo* 'contro[ls] the administration of state and its laws, [leads] the arm forces, controls the electoral machinery, [takes] care of the electoral clientele, and manag[es] and arbitrat[es] business'.

This *caudillo* regime has become radicalised since the 're-election' of the Ortega-Murillo presidency at the 2016 and 2021 elections. This became clear with the creation of political instruments such as the citizen power councils (CPCs), which promised Nicaraguans that they would 'make democratic citizenship a national reality' as long as this reality 'support[s] the plans and policies of the President' (Bay-Meyer, 2013: 403–404). This authoritarianism can also be seen by the Ortega-Murillo family's ownership of various radio stations, television channels and private enterprises (see Close, 2016), by the violent campaigns of repression against the 2018 student-led anti-government demonstrations (OHCHR, 2019, Miranda, 2021), by the control of academic and cultural institutions, and, according to the Inter-American Commission on Human Rights, by the persistent violation of human rights and civil liberties of those who criticise the government, including the

imprisonment of political opponents (OHCHR, 2024). Under this *caudillo* regime, the FSLN has become an unstoppable force of political and social transformation, and its inertia has been rather hard to avoid while doing fieldwork. The villagers are thus situated at the junction of two simultaneous and intertwining processes of attrition: one which occurs through Masaya's PVEs, and the other through the pulverisation of social liberties and democracy.

In this particularly tense environment, the anonymity of the participants became paramount. Therefore, the village where most of the fieldwork, observations and interviews took place is going to be called, unimaginatively, *El Pueblo*. It is located on one of the slopes of volcano Masaya, approximately 22 km southeast of Managua. The villagers mainly work in the agricultural sector, such as on pineapple plantations, but also in various other sectors and jobs that are often related to what is defined as the 'informal' market (such as street vendors), which make up a large part of Nicaragua's economy. The village has a dispensary as well as a state-run school and some churches that were established by various American religious charities running evangelistic projects in the village and throughout the country. As we can see in Figure 1, the village is in what volcanologists define as the main wind corridor that disperses volcano Masaya's PVEs from the main crater directly into their houses (see Withheld from review).

In *El Pueblo*, the impact of sulphuric acid (SO_2) can be seen everywhere, from the corrosion of buildings' infrastructures and rusty bicycles and school furniture to the upper respiratory tracts of many of the villagers (Longo et al., 2008, 2010). Part of the fieldwork conducted in *El Pueblo* required getting in touch with the community leaders who acted as gatekeepers so that villagers could be met and being introduced to the project in a trustful manner. I wanted to see whether we could have informal discussions about the volcano and how the villagers live with PVEs, organise potential interviews, and obtain consent to perform participant observations. While this is part of doing qualitative fieldwork, most of these interactions were conducted under the scrutinising eye of governmental officials, whose presence was described by Nicaraguan scientists as 'assistance' in case the transdisciplinary team needed further help. These officials were generally more interested in the work conducted by the team of volcanologists and environmental medics, mainly because air quality sensors installed by the volcanologists were providing a real-time assessment of PVE concentrations, while the social processes linked to dealing with PVEs were not as concrete and took much longer to gather and analyse. However, the officials' presence was felt in the ways in which some people were often 'suggested' to be met and the fact that many villagers disagreed to talk about their struggles with

Figure 1. Primary school building with Masaya's plume in the background. Photo taken by the author.

PVEs. Meeting the individuals suggested by governmental officials was not necessarily a problem, though, because they also asked questions about the research process, and meeting them provided a way to uncover the political hierarchy within the community. While the FSLN's presence was not always physical, it was relatively pervasive in the discursive fabric shaping interactions, ranging from billboards showing the presidential couple to the radio stations playing in the background in villagers' houses or in the buses transporting villagers to the capital city of Managua. This political ubiquity was also mediated through transitional moments in which villagers allowed themselves to engage simultaneously with PVEs, allowing subtle potentials to emerge and creativity to displace the overwhelming presence of PVEs and the FSLN.

Subtle potentials and stepping outside the attention economy of critical disaster and risk studies

In the last forty years, the social sciences and humanities have witnessed the fast-growing development of the sub-field of CDRS. Predominantly Foucauldian, it is a stream of critical social sciences and humanities research that has sought to unveil the totalising forms of rationality, ideals and values that have defined the politics of hypermodern risk and disaster management. Perhaps inadvertently, the particular interest in documenting the macro-ecologies of power involved in shaping and being shaped by and through risk and disaster politics has solidified an epistemic attention economy (see Citton, 2015), or a competition for gaining the individual and collective attention of post-Marxists scholars, that concerns grand disciplinary narratives and tacit techniques of oppression that have defined the objects paid attention to in CDRS (see Ewald, 1991; Beck, 1992; Bankoff, 2001; Esposito, 2011; Neyrat, 2008; Adey and Anderson, 2012; Anderson, 2012; Grove, 2014a; Grove, 2014b; Massumi, 2009, 2015; Grove and Adey, 2015; Grove, 2018; McGowran and Donavan, 2021). Yet the polymorphic nature of power implies that every macropolitics is co-constituted by sets of micropolitics (Deleuze and Guattari, 1980). The latter emerge from a wide variety of everyday life practices that require social scientists and humanities scholars, to assess what we are being attentive to whilst we are documenting the politics of risk and disasters. And it also asks us to asses something that is more central to this paper: what kind of processes and attentive agencies have been overlooked by CDRS scholars when engaging with those defined as vulnerable, poor or weak? These other forms of attentive agencies have been left at the fringes of critical enquiries into the politics of risk and disasters, yet they are pivotal in the formation of subtle potentials.

For Yves Citton (2015: 7, 2017, 2019), attentional agencies entail different modalities (collective–public; joint–showing care for each other; individual–self; and computational–the capacity to recognise one's own fabric within a hybrid system) that allow a person to mediate their own attention within the milieu, or within the environment/surroundings. These modalities require us to understand attention as a relational interaction with what surrounds and constitute us. Attention offers a repositioning of, and an attunement with, the being-with what composes the milieu, and that includes other humans and more-than-humans (see Canguilhem, 1992). Thus, these modalities provide visibility, or presence, of what counts in our existence whilst we shift continuously between them according to the multiple stimuli, interactions and movements that assemble and reassemble the milieu. Thus, attention is intrinsically linked to space–time in terms of its relational agency and connectivity, which are fundamental if movement is to be produced and noticed and potentials are to be materialised. Although attention has generally been a topic of inquiry in the realms of psychology, psychiatry, media studies and the social studies of medicine through attention deficit and hyperactivity disorder, for example (e.g., Lakoff, 2000; Filipe, 2016), its spatio-temporal fabric and geographies have been rather neglected and they deserve, funnily enough, a bit more attention from us. This is where spatial theory and human geography have something to add to the topic of attentional agency (e.g., Massey, 2005), particularly

regarding the relationship between attention and subtle potentials in the reconfiguration of the spatio-temporalities shaping the micropolitics of hazards, risk and disasters.

This spatio-temporal lacuna invites us to relate attention to the implicated processes of spatio-temporal formation, which are the intricate variations in time flow that occur in the shape of durations and rhythms (see Nobert and Pelling 2017; Nobert et al. 2020). They are the processes involved in producing what phenomenologist Henri Maldiney (2012) defines as implicated time, a temporal conceptualisation that connects lexically and theoretically with the idea of implicated order developed by the late physicist David Bohm (1980). Unlike explicated time, which refers to a time that is divided into the categories of temporalities such as past, present, future, periods, era, etc., implicated time is a time of experience that cannot be contained by explicated categories, a sort of melted time that folds, stretches and twists from incidence, decadence, acceleration or deceleration and that fills our lives but often goes unnoticed. It is similar to Michel Serres's (Serres with Latour, 1994: 90) 'percolating' time, but here it is important to see this implicated time as percolating through explicated time categories/segments. It is made up of multiple rhythms that are waiting to be created and experienced. As explained by Serres (Serres with Latour, 1994), this implicated time is fundamentally topological in the sense that it is much closer to a crumpled handkerchief than to an ironed one; it transforms the flat geometry and topography of explicated time categories into undulated and imperfect sections.

While thinking topologically (in a post-mathematical sense) is often associated with the work of Gilles Deleuze (1988) (i.e., Amin, 2002; Massey, 2005; Marston et al., 2005; Belcher et al., 2008; Martin and Secor, 2014; Grove, 2018), its origin lies more in Henri Bergson's idea of virtual multiplicities (2007: 65), which can be defined figuratively as the ocean of potentialities that surround us and that are waiting to be seen and dived into. For Bergson (2007), connecting to those virtual multiplicities could lead to substantive changes in our perception of matter and how we situate ourselves and relate to our world. Thus, topology challenges what we see and integrate into the geometry of power and social and more-than-social relations, which has significant impacts not only on how we conceptualise and perform spatiality but also on what we are attentive to. It is the modalities of attention that allow us to produce and seize subtle potentials (see Grove, 2018). There is thus an important relationship between subtle potentials, modalities of attention and rhythms.

To clarify, conceptually, rhythms are the implicated processes of speed variations in the ways in which time (understood here as pure change and difference; see Deleuze, 1968) is felt and produced. For example, through the rhythms of acceleration and emergency, political apparatus used in the realm of disaster risk reduction (DRR) such as resilience has sought to turn our collective and individual attention towards continuity and circularity whilst celebrating the normative meanings that define the ontological stability of risk management regimes (see Nobert et al., 2017). Vulnerability is different because it operates in the stalling rhythm of precarity and jerky becoming that interrupts continuity and the impression of security (see Berlant, 2011, for example). One of the main qualities of vulnerability is that it focuses our collective and individual attentions on what does not work, portraying those who are vulnerable to hazards as fixed, or as being in desynchrony with the rhythms of a liberal valued life and high-speed modernity. Concepts such as Robert Nixon's (2011) slow violence and slow emergencies (Anderson et al., 2020, Grove et al., 2022) have attempted to pluralise and complexify vulnerability by engaging with the decelerating processes of 'attritional lethality', which are processes of erosion that occur 'gradually and out of sight' (Nixon, 2011: x). These attempts have helped us identify regimes of structural inattention that have shaped inequalities, but they have also kept our collective attention on the effects of unwanted explicated futures (Berlant, 2011).

Unlike vulnerability and slow violence, subtle potentials are liberating. They become a response to the overlooked hope that needs to be captured and transformed into possible realisations. This is where the concept of free-floating attention creeps into the arena of vulnerability and slow violence, as it allows for subtle potentials to emerge (Citton, 2019). Building on Freudian psychoanalysis, on the work of Roland Barthes (1997) and on the phenomenology of Nathalie Depraz (2014), Citton

(2019: 28) refers to free-floating attention as a mode of attentive agency which aims at 'listening in a somewhat distracted fashion' and that 'essentially consists in the suspension of traditional constraints of reasoning so as to allow oneself to be carried by effects of resonance' (Citton, 2017: 116). To exemplify free-floating attention, Citton (2017: 117–118) draws on André Carpentier's (2009) description of the *flâneur* (a man who hangs around observing things without predetermined destination in motion and thoughts), who, through a free-floating vigilance, is 'available to the surrounding world, generally without the resources of a specialized analysis, as he puts himself in the presence of things and allows sensation to open up'. This free-floating attention allows us to neutralise the speed at which our attention is mobilised and wishes to reorient our individual focus on new objects that 'were previously looked [at] merely as background' (Citton, 2019: 27). While the theorisation of free-floating attention fits with Citton's (2017) wider theory of ecology of attention, I want to push it a bit further by engaging with the variety of rhythmic productions that are central to implicated time and to the unseen and mundane fabric of the political. A political that defines the everyday life of those seen as vulnerable. Thus, free-floating attention is seen here as an omnipresent agency that helps us capture and produce the topological fabric of implicated time processes, bringing us into what Gilbert Simondon (1989) and later Gilles Deleuze (1968) termed emancipatory distraction (see Citton 2017: 120). Free-floating attention opens up the capacity to engage with Bergson's virtual multiplicities and to step away from a predefined rhythmic order in ways that are 'freeing us from our voluntary blinkers' and helping us to reassess events or problems in a different way (see Citton, 2017: 117). This is where the shifting capacities brought upon us by rhythms and free-floating attention become involved in the formation of a micropolitics of spatio-temporal displacement that redefines the predetermined futures of vulnerability. We are going to see in the next section, via the free-floating attentive agency emerging from *El Pueblo* residents, as well as through my own free-floating attentive mode enacted though data analysis, how subtle potentials open up capacities to change the toxic alterity of PVEs into possibilities. By focusing on three rhythmic tales, the following section will explore how subtle potentials take shape and are becoming forces of emancipatory difference.

Jumping in, slowing down and standstill: unfolding the rhythmic micropolitics of living with permanent volcanic emissions

Rhythmic tale 1: jumping into the meeting: shedding light on a plurality of emergencies

It was through my first meeting with the community of *El Pueblo* that I noticed the emergence of subtle potentials. The meeting looked like any of the other meetings previously organised by the team of volcanologists, environmental medics and the national civil protection agency that intended to explain the aim of the transdisciplinary project. Villagers were present and beyond introducing them to the scientific core of the project, the meeting sought to find out whether some community members would be interested in talking about their experience of living with PVEs. This meant engaging with them through interviews and field visits, showing us how PVEs have affected their daily lives. Among the new crowd of people merging for the *El Pueblo* event were governmental officials representing diverse institutions in charge of environmental disasters and water resources management. These meetings were also excellent sites for observing how the dynamics between those taking part in the discussions were predetermined as a one-way process, whereby presentations would take place and then those who were listening would ask questions. Then, everyone would go back home peacefully. The initial meeting was held in the village primary school, a building situated in the middle of the village that showed the signs of PVEs' effects, from the rusty iron of the filing cabinets to the bending structure of the ceiling that was meant to hold the tiles together (see Figure 2).

Figure 2. Information meeting held in the primary school classroom at El Pueblo, which had no glass in its windows. The photograph has been edited to maintain the anonymity of the participants, but the scientists and government officials were located at the front of the class, to the right in the photograph. Note the deformed ceiling resulting from the SO_2 corrosion of the iron structure designed to keep the ceiling tiles together. The photo was taken by the author with the permission of the participants.

Following the presentations, the villagers were invited to ask the researchers questions and to comment on the presentations.[3] Some of the older villagers talked about the effects of Masaya on air quality and the apparent change in the behaviour of the volcano's degassing rhythm over time (Pering et al., 2019; GVP, 2021), while several women said that they were worried about their children's health and the effects PVEs were having on the school building. Others complained about the acid rain that results from the rainwater passing though the plume of PVEs, which is very bad during the rainy season (October). After all of these comments, one man stood up, introducing himself as Alfonso.[4] He thanked the researchers for being there that day, and by using the topic of acid rain raised by previous participants, he introduced the elephant in the room: 'we have to deal with the volcano, but for myself and many people here, a big problem for our community is accessing drinking water' (field notes). What was meant to be an informative session for government authorities became something unexpected that sought to change the predetermined interactive process imagined by the organisers (particularly by the governmental officials) and the condition of vulnerability that has defined the villagers as victims of Masaya's PVEs. While PVEs are a very pervasive pollutant affecting the villagers in multiple ways, their destructive agency has also resulted in allowing those who are given little importance by the *caudillo* regime to voice their worries when the emergences of concerns and criticisms have been prevented (Close, 2016).

By stepping into the meeting and diverting the topic towards the lack of drinking water, Alfonso took us into the realm of free-floating attention (Citton, 2019: 31), which allowed him to propel himself and 'jump into' the moment and reorient attendees' collective attention to concerns that were in the background of air pollution. By redirecting the attention of the room to a new object, Alfonso caused a reconfiguration of the micropolitics of the event, abruptly changing the course of the meeting, changing its substance and allowing the inequalities silenced by governmental agencies to surface. By jumping into the meeting and bringing up the topic of access to water, Alfonso and the other villagers were allowing themselves to neutralise the unfolding events defining the now while challenging governmental representatives in front of a cohort of international experts. This intervention was not extraordinary in itself, but its deployment enabled the readjustment of what me and my colleagues as well as the political officials were being attentive to. In this case, the emancipatory distraction introduced by

Alfonso meant that the experts and political officials were brought to 'discover forms, properties and potentialities that were not [made] previously available' in their understanding of those living with PVEs within a *caudillo* regime (Citton, 2017: 119).

In the politically tense environment that was and still is Ortega-Murillo's Nicaragua, every political gain is risky. Thus, the formation of subtle potentials emerges from free-floating attention, which in turn pluralises the meanings of what the now entails or could be. In a figurative manner, this kind of subtle potential allows us to see Alfonso's intervention as a rock at the bottom of a river whose tip lightly touches the surface of the flowing water. This subtle touch creates new waves at the surface of the flow, multiplying the current's trajectories and unleashing new polyrhythmic fields that are visible in the water flow (Lefebvre and Régulier, 2019). In other words, Alfonso's intervention subtly joined the inner rhythms of the degassing processes producing PVEs and the political response to them. In the process, his subtle emergence allowed other urgencies to be made visible whilst the intertwinement of rhythmic experiences and attentive modalities was pluralised in the definition of what consists of the now. By jumping into the topic and propelling an element of distraction in the meeting, Alfonso and his fellow villagers took me and my colleagues as well as the government officials to the very heart of the social life of PVEs, in the micropolitics of spatio-temporal displacement, allowing them to change the direction and the production of what was coming in their lives.

Michel de Certeau (1986) talks about how social actors appropriate normative conventions for themselves in an unauthorised manner, which he defines as 'poaching'. In this case, *El Pueblo*'s community 'poached' the meeting by allowing other objects, meanings and politics to become subjects of attention. This gymnastic element of attentive modalities required rhythms to interfere and to change the content and direction of what researchers and villagers needed to be attentive to while engaging with PVEs. If acceleration as a rhythm (e.g., propelling oneself in a situation) is introduced to bring the topic of access to water to the centre of a meeting's attention, it is not separated from other rhythmic processes that are also implicated in free-floating attention. The next rhythmic tale will show how soft potentials and the possibilities they bring to light are also produced by experimenting with and negotiating the effects of Masaya's areal and magmatic life.

Rhythmic tale 2: slowing down and trying out: the unpredictability of experimentation

Through the fieldwork done in *El Pueblo*, relations between Masaya's inner rhythms and the life of the villagers living in the trajectory of the plume of PVEs (see Figure 1) exposed how the slow rhythms of experimentation and invention are also important if free-floating attention and subtle potentials are to emerge. When I talked to villagers about what they do when a degassing event takes place and amplifies the presence of Masaya's toxic agency in their lives, some of them said that they 'stay inside [their] houses until it passes' (Focus group 1, my translation) or 'move back to the house if it is too intense' (Interviewee 1, my translation). Others talked about what seem to be elaborate techniques that they have developed, such as 'protecting water with plastic sheets' (Interviewee 6, my translation) (see also Nobert et al., 2020). Although these techniques translate the violence of a political economy that has abandoned them in many ways, their emergence was not always planned, nor was their effectiveness guaranteed. Yet both creativity and experimentation are undetermined processes that require being attentive to the juxtaposition of events and objects that crystallise in the formation of subtle potentials. One day a plastic sheet would suffice to protect an open-air water supply against acid rain contamination, while on another day, a plastic barrel found along the road would become a new container in which to protect some water (see Nobert et al., 2020). Another example of this form of subtle potentials that emerge out of experimentation with free-floating attention in the face of PVEs comes from the replacement of nails with ropes. One interviewee mentioned that since all her 'nails had corroded and were broken, I use wires and ropes to tie pieces of the roof tiles on wooden roof beams together' (Interviewee 7, my translation). This idea came up when a substitute for corrosive

material was needed; rather than replicate the solution of nails, plastic-protected wires and ropes usually used for other purposes were tried, and they worked.

In those experiments, what was produced was not necessarily stable futures that can be discerned and expected, but rather the fruit of spatio-temporal conjunctions that make spontaneous discoveries central to the free-floating attentive mode of enquiry. Although many of these actions were born out of ideas targeted at reducing the pollution caused by PVEs, their emergence was linked to the rhythms of experimentation, which distorts time flow and transports us into the slowness of the unknown. Unlike finality, certainty and predictability, experimenting is constrained by the sluggish pace of discovery; it is open to transformation and new beginnings and requires us to be attentive to surprises. It also requires us to be attentive to what resides in the unexpected. Experimenting is the process through which subtle potentials consistently occur, layering the structure of what is coming but not giving us complete access to the end result or to the promise of longevity. It is a constant rhythm of actualisation that is related to the free-floating attentive mode in which the now is an uncompleted process.

Another example of experimenting was carried out by a villager I am going to name Don Miguel. An elder in the community, he had lived on the same slope of Masaya for several decades and his lands and his farming lifestyle had been badly impacted by the increase in the activity of degassing events and PVEs since the 1970s. While we were walking through his crops, Don Miguel indicated how he had learned to live with Masaya by continually transforming how he had cultivated different species of plants and introduced new kinds of crops, such as the dragon fruit, known as *pitaya* in Spanish (see Figure 3). The first question put to him and also answered by one of the village leader who was introducing me and my colleague to Don Miguel's plot was whether the conditions were optimal for the fruit to grow in the upper part of his land. The answer was 'not really', but for Don Miguel, as for many other farmers in the area who had adopted this new crop, the idea of trying to plant *pitayas* in a hostile environment was not only the result of desperation but also a decision motivated by 'curiosity', to 'see if it can grow here' (field notes). Trying to do something and seeing what happens implies accepting the uncertainty of success and the possibility of failure, which is often the attitude to farming activities. Trying things in the shadow of PVEs also illustrates the necessity of continually

Figure 3. Don Miguel showing part of his experimentation with dragon fruit plants in the village of El Pueblo. The idea behind the photograph was to show what villagers were doing to deal with the effect of PVEs on crops. Photo taken by the author.

reassessing what is coming and not accepting continuity as a given but as a process that is undetermined and negotiated. As mentioned by Don Miguel, 'I would like it if I could produce enough to live well from this as I did with beans before, but if not, at least I know it doesn't work and maybe I'll try something else. The Japanese brought this here, perhaps something else will come' (field notes). By experimenting with trying to grow dragon fruit on their land, Don Miguel and his fellow villagers were tuning the actualisation of the now to fit with Masaya's rhythms while paying attention to the slow pace of plant growth, which was, ultimately, allowing villagers to step back and reorient their lives in the hope of being successful with alternative rhythmic crops.

Experimenting with *pitaya* is thus more than an unique agricultural shift; it is also an important micropolitical performance exercised by the villagers that results from the need to embrace the rhythms of the volcano and to use them to reorient what is coming. Examining how *pitaya* cactuses grow and experimenting with and caring for their fruits is not a sign of being completely dominated by Masaya's rhythmic order and its related detrimental effects. Rather, it is a way of being attentive to and relating to the slowness of the cactus growth in a hostile environment. It is what Harmut Rosa (2018) defines as being in *resonance* with the milieu. This capacity to relate to slowness and to actualise the now with inventions helps villagers and farmers to imagine new beginnings for their communities. The slowness of experimenting with *pitaya* plants distorts the dramatic effects of PVEs on the landscape. It contracts time flow while extending the potentials contained in the rhythms of growth and the promises of a new harvest. Generally, farmers experiment with the polyrhythms of the many vegetable and animal lives that exist on their farms. Once the farmers of *El Pueblo* had immersed themselves in experimentation and were adopting a free-floating attentive mode in relation to what surrounded them, the threat of PVEs also unveiled the hope through subtle potentials. The next rhythmic tale will show how subtle potentials also emerge from a standstill and waiting, a rhythmic production that overlaps with slowing down and experimenting but that seeks to step aside from the time continuum.

Rhythmic tale 3: the standstill of a new beginning: waiting for the jícaro tree

Pitaya growing was one kind of experiment encountered in the field. While documenting the effects of PVEs on the village of *El Pueblo* and trying to find a place where the volcanologists could install air quality monitors, I was introduced to Doña Fernanda by a local community leader. Her house faced a large garden in which she cultivated a variety of plants and trees at the level of subsistence farming. Among the multiple plants in various pots and on the ground, one tree was a bit more striking because of its large, round, bright green fruits, which contrasted with the surrounding vegetation. Both the tree and the fruits are known locally as *jícaro* (see Figure 4); the tree's common English name is the calabash tree. Endemic to Central America, *jícaro* is known as being cultivated so that it can be used for various purposes: its shell, when dried, is used to make musical instruments, pots and utensils; its leaves and flesh can provide extra cattle fodder; and its seeds are consumed in food and drinks and are used for their various medicinal properties, including treating lung infections (see Morton, 1968; Bass, 2004).

In an area where the plume of PVEs was identified as having a significant effect and where cattle were absent, the presence of the *jícaro* tree in a well-maintained vegetable plot indicated that its fruits were fit for human consumption. When Doña Fernanda was asked why the tree was there, she said that she 'kept it for the seeds, we consume the seeds, it is protecting our family's health' (field notes), mentioning later that she was 'making sure to care for the tree' as it was important to her family. The polyrhythms of Fernanda's garden allowed us to see that despite Masaya's effect on the land, it was incapable of eradicating all forms of life and there was a capacity for free-floating attention to make the presence of plant life noticed and cared for. Doña Fernanda and her neighbours were involved in the growing cycles of a variety of plants and trees that all have particular rhythms and whose presence and associated flowers and fruits such as those of the *jícaro* were defying the rapid

Figure 4. A jícaro tree (*Crescentia sp.*) and fruit growing in Doña María's garden in El Pueblo. Photo taken by the author.

and destructive effects of PVEs. If living in the middle of the plume of PVEs can be seen as an act of desperation by people who have little choice but to live in such conditions, waiting for, and being attentive to, various plants and trees to grow provides a more complex and nuanced understanding of those living with the effects of PVEs.

While waiting has often been discussed as a strategy used to reinforce and maintain aspirations in a context of limited opportunity (Appadurai, 2002; Jeffrey, 2010; Berlant, 2011), in *El Pueblo*, waiting allows a person to step aside. It is animated by a free-floating modality of attention and puts the focus on the hope and possibilities of transformation that emerge from experiencing a now that is continuously stretching. Unlike experimenting, which corresponds to a series of micro-forwarding and discontinuing extensions that open our attention to the process of creativity, waiting corresponds to a standstill position that allows someone to step outside of continuity and embrace discontinuity in what constitutes the milieu and its own relationship to it. It is a position in space–time that permits certain potentials to flourish. It is also a rhythm that is grounded in the intuition that something else is about to happen, but it is not yet there. Indeed, the violence associated with the political economy of PVEs remains, and while many challenges are still impacting the lives of *El Pueblo*'s villagers at the time of writing (e.g., housing, food security, education, etc.), waiting for the *jícaro* tree to grow means waiting for the medicinal properties of the fruits (seeds) to actualise the possibilities contained in the now by resisting the toxic futures dictated by volcano Masaya. Waiting also means seeing hope in the potentials for transformation (Jeffrey, 2010). Doña Fernanda and her family had been attentive to the slow rhythms of the *jícaro* tree alongside the ceaseless moving life of farming: they had waited for it to grow and cared for it, and hence had transformed the adverse conditions of the volcanic environment into conditions that they could stay in and that the tree could grow in.

Experimenting with the *pitaya* cactus or waiting to see whether a *jícaro* tree could survive in this toxic environment was not necessarily something that was always planned and determined. Rather, it was the result of trial and error, of a free-floating attention being paid to the milieu, of enthusiastically waiting to see what would happen, and of wanting to learn about and understand tree- and fruit-growing processes. Waiting for the *jícaro* tree to grow is about immersing oneself in the capacity to stretch time flow whilst embracing the slow rhythms of growth. The small differences brought about by waiting for trees and plants to grow and negotiating the fatality of Masaya's toxicity provides a capacity to see how the micropolitics of alterity are activated through and with subtle rhythmic changes and paying attention to what they entail and are made of.

Conclusions

In the harsh reality of living with volcanic gas emissions, such as in *El Pueblo*, what consists of the future is as friable as a piece of metal corroded by PVEs; it offers little prospect of stability and continuity. Yet the paper has exposed that while *El Pueblo*'s residents are confronted with the simultaneous and suffocating processes created by the Ortega-Murillo political regime and the PVEs of volcano Masaya, they are not denuded of inventive and political agencies, which in turn allow them to defy the predetermination of living with intertwining forms of toxicity. By developing and theorising subtle potentials, the paper has shown how a micropolitics of spatio-temporal displacement operates in the daily lives of those often seen as the victims of uncontrollable dynamics of destruction. As subtle as they are, subtle potentials are also implicated in the emergence of emancipatory forces that challenge the fatality and fixity of living with PVEs that invite CDRS scholars to become attentive to their rhythmic fabric. Following my immersion in the data and in the experiences of *El Pueblo*, I have situated the emergence of subtle potentials at the junction where free-floating attention and rhythmic production become entwined and implicated in the emergence of discoveries, novelties and events that are in turn capable of opening up the now into a variety of incomplete possibilities. In so doing, the paper contributes to the anthropology and geographies of attention and provides an additional look at the wider politics of time making implicated in dealing with risks and hazards (Nobert and Pelling, 2017). What looked like anodyne practices such as rushing to intervene in a meeting, slowing down through experimentation, and waiting for plants to grow turned out to involve a capacity for being attentive to differential rhythms and potentialities that otherwise would have been relegated to triviality or simply being ignored.

While these subtle potentials might be short-lived, their emergence should be taken seriously when attempting to understand those who are often defined as vulnerable by the wider CDRS as well as development studies more generally. Already in the 1980s, Michel de Certeau (1986) and John Scott (1985) warned us about the danger of oversimplifying the interpretation of everyday life. The emergence of subtle potentials certainly corroborates their findings but is also alerting us to the dangers of overemphasising the macro-ecologies of power when determining oppression. Subtle potentials also help us refraining from universalising the ways in which our collective and individual attentive agencies are captured and controlled. As the paper shows with the experiences of *El Pueblo*, the merging of free-floating attention and the production of different rhythms could be used to open up the meaning and agencies of what consists of the now. This process is in turn enabling us to notice the variety of potentials that can create differences in the ways in which we value and engage with the world we inhabit.

The inner rhythms of the Masaya volcano as well as the various changes that take place in the shape and the materiality of its lava also demonstrate that in addition to being highly toxic and destructive, PVEs have been central to new innovations, ideas and creations. Those novelties and creations are in no way a replacement for the violent effects of the gases on the communities, but they allow us to realise that the volcano's degassing rhythms become part of the polyrhythmic field animating the lives of the *El Pueblo*'s villagers. In this web of rhythmic entanglements, one finds a willingness for the authoritarian regime of Ortega-Murillo to synchronise individual action and attention on the edification of a singular political future through the rhythmic forces of repression. Yet, as the paper shows, the capacity for free-floating attention to connect with diverse rhythms in the formation of subtle potentials allows those involved in the micropolitics of spatio-temporal displacement to deactivate the processes meant to be capturing both collective and individual attention. This micropolitics enabled by the emergence of subtle potentials reorganises and pluralises what the now/actual consists of and could become. Perhaps more importantly, by opening up the capacity to compress, stretch and distort the now/actual through banal practices and subtle potentials, those who are often depicted as victims can be seen as vibrant political actors who are already engaging in dis/continuous change.

These subtle potentials help us to be attentive to the shifting natures of those who are being oppressed as they become emancipatory forces.

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Notes

1. PVEs can be rich in acids (e.g., sulphur dioxide (SO_2)), fine particulate matter and heavy metals (e.g., lead, arsenic), hence presenting an air pollution hazard that is either direct or indirect during and after degassing events (Baxter et al. 1982; Delmelle et al. 2002).
2. Under the populist and authoritarian *Frente Sandinista de Leberación Nacional* (FSLN), led by Daniel Ortega and his wife, Rosario Murillo, political informants are active in most communities, which led many participants to prefer not to be interviewed. This environment also means that when villagers accepted to be interviewed, some of these interviews were not recorded. The fear of being identified as criticising the government seemed to have been a key to these decisions.
3. It is important to mention that the setup of those presentations was demanded by the village leaders and were not an imposed decision made by the team of global North researchers.
4. To guarantee the anonymity of the participants, the names of all of those who appear in the paper have been changed.

References

Adey P and Anderson B (2012) Anticipating emergencies: Technologies of preparedness and the matter of security. *Security Dialogue* 43: 99–117.

Allen J (2016) *Topologies of Power: Beyond Territory and Networks*. London, UK: Routledge.

Amin A (2002) Spatialities of globalization. *Environment and Planning A* 34: 385–399.

Anderson B (2012) Affect and biopower: Towards a politics of life. *Transactions of the Institute of British Geographers* 37: 28–43.

Anderson B, Grove K, Rickards L, et al. (2020) Slow emergencies: Temporality and the racialized biopolitics of emergency. *Progress in Human Geography* 44: 621–639.

Appadurai A (2002) Deep democracy: Urban governmentality and the horizon of politics. *Public Culture* 14: 21–47.

Bankoff G (2001) Rendering the world unsafe: 'Vulnerability' as Western discourse. *Disasters* 25: 19–35.

Barthes R (1997) *Écoute*. In: *Œuvres Complètes. V*. Paris: Seuil, 340–352.
Bass J (2004) Incidental agroforestry in Honduras: The jícaro tree (*Crescentia spp*.) and pasture land use. *Journal of Latin American Geography* 3: 67–80.
Baxter P, Stoiber R and Williams S (1982) Volcanic gases and health: Masaya volcano, Nicaragua. *The Lancet* 320: 150–151.
Baxter PJ, Ing R, Falk H, et al. (1983) Mount St. Helens eruptions: The acute respiratory effects of volcanic ash in a North American community. *Archives of Environmental Health* 38: 138–143.
Bay-Meyer K (2013) Do Ortega's citizen power councils empower the poor in Nicaragua? Benefits and costs of local democracy. *Polity* 45: 393–421.
Beck U (1992) *Risk Society: Towards a New Modernity*. New Delhi: Sage Publishers.
Belcher O, Martin L, Secor A, et al. (2008) Everywhere and nowhere: The exception and the topological challenge of geography. *Antipode* 40(4): 499–503.
Bergson H (1907) *L'évolution créatrice*. Paris: Presses universitaires de France.
Bergson H (2007) *Essai sur les données immédiates de la conscience (1889)*. Paris: Presses universitaires de France.
Berlant L (2011) *Cruel Optimism*. Durham, NC: Duke University Press.
Bohm D (1980) *The Wholeness and the Implicate Order*. London, UK: Routledge.
Canguilhem G (1992) *Les connaissances de la vie*. Paris: Librairie philosophique J. Vrin.
Carpentier A (2009) Être auprès des choses. L'écrivain flâneur tel qu'engagé dans la quotidienneté. Observatoire de l'imaginaire contemporain, OIC.uquam.ca.
Charmaz K (2014) *Constructing Grounded Theory: A Practical Guide Through Qualitative Analysis*, 2nd ed. Thousand Oaks, CA: Sage Publications.
Citton Y (2015) Espace public neuronal et dégagements attentionnels. In: Chardel P-A, Frelat-Kahn B and Spurk J (eds.) *Espace public et reconstruction du politique*. Paris: Presse des Mines-Transvalor.
Citton Y (2017) *The Ecology of Attention*. Cambridge, MA: Polity Press.
Citton Y (2019) Attention agency is environmental agency. In: Doyle W and Roda C (eds) *Communication in the Age of Attention Scarcity*. London, UK: Palgrave Macmillan, 21–32.
Clark N (2011) *Inhuman Nature: Sociable Life on a Dynamic Planet*. London, UK: Sage Publishers.
Clark N (2020) Vertical fire: For a pyropolitics of the subsurface. *Geoforum* 127: 364–372.
Close D (2016) *Nicaragua : Navigating the Politics of Democracy*. Boulder, MO: Lynne Rienner.
de Certeau M (1986) *L'invention du quotidien. Vol 1. L'Art de faire*. Paris: Gallimard.
Deleuze G (1968) *Différence et Répétition*. Paris: Presses universitaires de France.
Deleuze G (1988) *Le pli, Leibniz et le baroque*. Paris: Les Éditions de Minuit.
Deleuze G and Guattari F (1980) *Mille plateaux*. Paris: Les Éditions de Minuit.
Delmelle P, Stix J, Baxter P, et al. (2002) Atmospheric dispersion, environmental effects and potential health hazard associated with the low-altitude gas plume of Masaya volcano, Nicaragua. *Bulletin of Volcanology* 64: 423–434.
Depraz N (2014) *Attention et vigilance: à la croisée de la phénoménologie et des sciences cognitives*. Paris: PUF.
Driessen H and Jansen W (2013) The hard work of small talk in ethnographic fieldwork. *Journal of Anthropological Research* 69: 249–263.
Esposito R (2011) *Immunitas: The Protection and Negation of Life*. Cambridge: Polity.
Ewald F (1991) Insurance and risk. In: Burchell G, Gordon C and Miller P (eds) *The Foucault Effect: Studies in Governmentality*. Chicago: The University of Chicago Press, 197–210.
Filipe A M (2016) Making ADHD evident: Data, practices and the diagnostic protocols. *Medical Anthropology* 35: 390–403.
Global Volcanism Program (GVP) (2021) Report on Masaya (Nicaragua). In: Bennis KL and Venzke E (eds), *Bulletin of the Global Volcanism Network*, 46(6). Smithsonian Institution. https://volcano.si.edu/showreport.cfm?doi=10·5479/si.GVP.BGVN202106-344100 (Accessed 23 September, 2021).
Grosz E (2004) *The Nick of Time: Politics, Evolution and the Untimely*. Durham, NC: Duke University Press.

Grove K (2014a) Agency, affect, and the immunological politics of disaster resilience. *Environment and Planning D: Society and Space* 32(2): 240–256.

Grove K (2014b) Biopolitics and adaptation: Governing socio-ecological contingency through climate change and disaster studies. *Geography Compass* 8: 198–210.

Grove K (2018) *Resilience*. London, UK: Routledge.

Grove K and Adey P (2015) Security and the politics of resilience: An aesthetic response. *Politics* 35(1): 78–84.

Grove K, Rickards L, Anderson B, et al. (2022) The uneven distribution of futurity: Slow emergencies and the event of COVID-19. *Geographical Research* 60(1): 6–17.

Jeffrey C (2010) *Timepass: Youth, Class, and the Politics of Waiting in India*. Stanford: Stanford University Press.

Johnson C (2012) Bricoleur and Bricolage: From metaphor to universal concept. *Paragraph* 35: 303–464.

Lakoff A (2000) Adaptive will: The evolution of attention deficit disorder. *Journal of History of the Behavioural Sciences* 36(2): 149–169.

Lefebvre H and Régulier C (2019) Le Projet Rythmanalytique. *Communications* 41(1985): 191–199. Reproduced in *Éléments de rythmanalyse et autres essais sur les temporalités*. Paris: Association Culturelle Eterotopia France, 113–123.

Lévi-Strauss C (1962) *La pensée sauvage*. Paris: Plon.

Longo BM, Rossignol A and Green JB (2008) Cardiorespiratory health effects associated with sulphurous volcanic air pollution. *Public Health* 122: 809–820.

Longo BM, Yang W, Green JB, et al. (2010) Acute health effects associated with exposure to volcanic air pollution (vog) from increased activity at Kilauea Volcano in 2008. *Journal of Toxicology and Environmental Health Part A* 73: 1370–1381.

Maldiney H (2012) *Regard, parole, espace: œuvres philosophiques*. Paris: Les éditions du cerf.

Marston SA, Jones JP and Woodward K (2005) Human geography without scale. *Transactions of the Institute of British Geographers* 30: 416–432.

Martí i Puig S (2010) The adaptation of the FLSN: Daniel Ortega's leadership and democracy in Nicaragua. *Latin American Politics and Society* 52: 79–106.

Martí i Puig S and Serra M (2020) Nicaragua: De-democratization and the regime crisis. *Latin American Politics and Society* 62: 117–136.

Martin L and Secor AJ (2014) Towards a post-mathematical topology. *Progress in Human Geography* 38(3): 420–438.

Massey D (2005) *For Space*. London, UK: Sage Publishers.

Massumi B (2009) National enterprise emergency: Steps toward an ecology of powers. *Theory, Culture and Society* 26: 153–185.

Massumi B (2015) *Ontopower: Wars, Powers and the State of Perception*. London, UK: Duke University Press.

Mathews G (2011) *Ghetto at the Center of the World: Chungking Mansions, Hong Kong*. Chicago: University of Chicago Press.

McGowran P and Donavan A (2021) Assemblage theory and disaster risk management. *Progress in Human Geography* 45(6): 1–24.

Miranda W (2021) Nicaragua rounds up president's critics in sweeping pre-election crackdown: Arrests of opposition figures, including revered former guerrillas, represent 'last gamble of a dictator's family'. *The Guardian* (15 June).

Morton J (1968) The calabash (*Crescentia cujete*) in folk medicine. *Economic Botany* 22: 273–280.

Nancy J-L (2013) *Être singulier pluriel*. Paris: Galilée.

Neyrat F (2008) *Biopolitiques des catastrophes*. Paris, MF: Collection Dehors.

Nixon R (2011) *Slow Violence and the Environmentalism of the Poor*. Cambridge, MA: Harvard University Press.

Nobert S, Bellanger Rodríguez H and Hernández Leiva X (2020) Colliding times: Urgency, resilience and the politics of living with volcanic gas emissions in the Anthropocene. In: Chandler D, Grove K and

Wakefield S (eds) *Resilience in the Anthropocene: Governance and Politics at the End of the World*. London, UK: Routledge, 68–83.

Nobert S and Pelling M (2017) What can adaptation to climate-related hazards tell us about the politics of time making? Exploring durations and temporal disjunctures through the 2013 London heat wave. *Geoforum* 85: 122–130.

Nobert S, Rebotier J, Vallette C, et al. (2017) Resilience for the Anthropocene? Shedding light on the forgotten temporalities shaping post-crisis management in the French Sud Ouest. *Resilience: International Policies, Practices and Discourses* 5: 145–160.

Office of the High Commissioner for Human Rights (OHCHR) (2019) Situation of Human Rights in Nicaragua. In *Annual report of the United Nations High Commissionner for Human Rights and reports of the Office of the High Commissionner and the Seceretary-General*. September 9–27, Agenda item 2.

Office of the High Commissioner for Human Rights (OHCHR) (2024) Human rights situation in Nicaragua, Report of the United Nations High Commissioner for Human Rights. In Annual report of the United Nations High Commissionner for Human Rights and reports of the Office of the High Commissionner and the Seceretary-General. September 9–October 9, Agenda item 2.

Pering TD, Illanko T, Wilkes TC, et al. (2019) A rapidly convecting lava lake at Masaya volcano, Nicaragua. *Frontiers in Earth Science* 6 https://doi: 10·3389/feart.2018·00241

Rosa H (2018) *Resonance: A Sociology of Our Relationship to the World*. London, UK: John Wiley and Sons.

Schedler A (2004) Elecciones sin democracia. El menu de la manipulación electoral. *Estudios Políticos* 24: 137–156.

Scott J (1985) *Weapons of the Weak: Everyday Forms of Peasant Resistance*. New Heaven: Yale University Press.

Sedgwick EK (2003) *Touching Feeling: Affect, Pedagogy, Performativity*. London, UK: Duke University Press.

Simondon G (1989) *L'Individualisation psychique et collective : à la lumière des notions de forme, information, potentiel et métastabilité*. Paris: Aubier.

Timmermans S and Tavory I (2012) Theory construction in qualitative research: From grounded theory to abductive analysis. *Sociological Theory* 30(3): 167–186.

Whitehead AN (1978) *Process and Reality*. New York: The Free Press.

Serres M (with Latour, B.) (1994) *Éclaircissements: cinq entretiens avec Bruno Latour*. Paris: Flammarion.

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