Climate Change, Modernity, and the Maya Cosmovision

Enacting Adaptation across Warming Worlds

Danielle Elise Huffaker

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Abstract

Through an ethnographic collaboration with Sotz'il Association, an Indigenous organization in Guatemala, this thesis explores what climate change is (ontologically) at the cross-section of modernity and the Maya Cosmovision. It builds on scholarly conversations regarding how to develop ethical and productive mutualisms between Western scientific and Indigenous knowledges in pursuit of transformative responses to the climate crisis, suggesting that a lens of ontological pluralism can support a deeper and more adequate approach, in which Indigenous epistemologies are treated as ontologically-embedded. Theoretically, it seeks to unite epistemological and ontological pluralism, proposing an analytical framework on the premise that knowledges, worlds, practices, and values are co-enacted as onto-epistemological constellations, and that worlds overlap and diverge in complex and dynamic ways charged with power relations. It explores the ontological politics of the Maya version of the story of a highway construction project in Chimaltenango, revealing conflict between asymmetrical worlds and the trembling foundations of modernity's nature-culture fault lines. It draws recursively upon Maya philosophy and empirical material to develop *Maya enactivism*, a theory of causality based in the Maya Cosmovision, through which climate change is revealed as a living world in diminishment due to the erosion of knowledge-praxis based in attitudes of reverence. Finally, highlighting a calendar that systematizes Indigenous knowledge-praxis regarding forest management and other empirical examples, it is suggested that Sotz'il enacts adaptation from the frothy edges of multiple worlds. In national and international climate processes, they promote Indigenous inclusion and onto-epistemic recognition, inhabiting spaces of participation both enabled and constrained by neoliberal multiculturalism. Their transmodern approach is suggested to be coherent with a Maya cosmology of transformation, as they enact an adaptation of overlapping meanings that bridges the gap between epistemic plural fragmentation and universalizing, dominant conceptions and approaches to climate change.

Keywords: Adaptation, Chimaltenango, climate change, Indigenous epistemologies, Integral Enactment Theory, Kaqchikel, knowledge integration, Maya Cosmovision, ontological pluralism, political ontology

Resumen

A través de una colaboración etnográfica con la Asociación Sotz'il, una organización Indígena en Guatemala, esta tesis explora qué es el cambio climático (ontológicamente) desde las conexiones parciales entre la modernidad y la Cosmovisión Maya. Los discursos académicos sobre cómo desarrollar mutualismos éticos y productivos entre los conocimientos científicos occidentales e Indígenas en la búsqueda de respuestas ante la crisis climática son fuente de inspiración para la tesis, la cual que una lente de pluralismo ontológico puede contribuir a un enfoque en el que las epistemologías Indígenas son inseparables de sus ontologías. En términos teóricos, esta tesis persigue unir el pluralismo epistemológico y ontológico, proponiendo un marco analítico sobre la premisa de que los conocimientos, mundos, prácticas, y valores co-surgen como constelaciones onto-epistemológicas, y que los mundos se superponen y divergen de formas complejas, permeados siempre por relaciones de poder. La tesis explora la política ontológica de la versión Maya de la historia de la construcción del libramiento en Chimaltenango, revelando el conflicto entre mundos asimétricos y los temblorosos cimientos de las líneas divisorias naturaleza-cultura de la modernidad. Se basa en el material empírico para desarrollar *Maya enactivism*, una teoría de la causalidad desde la Cosmovisión Maya, a través de la cual el cambio climático se revela como un mundo vivo en disminución debido a la erosión de los conocimientos y las practicas basados en actitudes de reverencia. Destacando un calendario que sistematiza conocimientos-prácticas Indígenas con respecto al manejo forestal y otros ejemplos empíricos, la tesis sugiere que Sotz'il practica la adaptación desde múltiples mundos. En los procesos climáticos nacionales e internacionales, promueven la inclusión Indígena y el reconocimiento onto-epistémico, habitando espacios de participación tanto habilitados como restringidos por el multiculturalismo neoliberal. Se sugiere que el enfoque transmoderno de Sotz´il es coherente con la cosmología Maya de la transformación, ya que realizan una adaptación de significados superpuestos que cierra la brecha entre la fragmentación plural epistémica y las concepciones y enfoques dominantes y universalizantes del cambio climático.

Palabras clave: Adaptación, Chimaltenango, epistemologías Indígenas, Kaqchikel, Cosmovisión Maya, pluralismo ontológico, ontología política.

To forgotten worlds:

We carry your memories in our bodies.

Thank you.

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Introduction: A Different Starting Point

You may be forgiven, reader, if this opening strikes you either as apocalyptic grandstanding, or as the now-rote rehearsal of facts that preface so many scholarly pieces on climate change. Still, I feel the need to review the situation however cursorily, for what is at stake during our generation is unfathomable from the standpoint of a single human lifetime, and habitual patterns of mind constantly move in to dull any moments of clarity I find from which to glimpse the depth of loss that is already underway. Yet, a flood of evidence that represents our best efforts at knowing and assessing the situation, point to the sanity of raising alarm: concentrations of carbon dioxide in the atmosphere are increasing (NOAA 2020), and 2020 was the warmest year on record (NASA 2021). Species loss is accelerating at an unprecedented pace (IPBES 2019, 11–12). The dramatic loss of genetic diversity in the plants and animals we rely on for food is increasing human vulnerability to climate change and disease (Ibid.). We have already crossed four planetary boundaries[1] laid out by sustainability scientists to define environmental thresholds within which humans can safely operate to maintain the stability of the Earth System (Steffen et al. 2015)—and non-linear feedbacks from the interactions of these various thresholds threaten to trigger "tipping points" that could cause rapid and irreversible changes to Earth System dynamics (Anderies et al. 2013). These facts are only the tip of the melting iceberg, as one might contemplate any of a number of entangled issues that threaten the stability and well-being of life on the planet: from topsoil erosion to rampant inequality, to the rise of authoritarian nationalism, to an epistemic crisis of meaning and of misinformation (see Rowson 2021; John Vervaeke 2017). Cut a slice anywhere and take a close look: humanity is failing to transform our global systems and our modern way of life to assure a sustainable future in which humans and other life forms can thrive. The extractivist, materialist, rationalist, individualist episteme that is running the show, is running it asunder.

[1] They are climate change, biosphere integrity, biogeochemical flows, and land-system change.

This thesis takes as a premise that climate change is a symptom and context for a deeper multivalent crisis—indeed, a metacrisis (Rowson 2021)—that is revealed in our seeming incapacity to substantively realize more life-affirming alternatives. The metacrisis is not a sign of inadequate technical expertise nor only a lack of "political will," but runs much deeper. It is a crisis of ontology which emerges from a foundational groove, a rift that runs between nature and society (Descola 2013, 279). We "Moderns"[2] have carved this rift throughout our minds, beings, and social systems, and it is a groove which we have managed to etch so deeply into the world we have colonized, that we cannot seem to think or be or enact anything differently from it. The dilemma we face is that while modern patternings are at the root of the metacrisis, our most powerful tools to conceive of and enact change are thoroughly embedded in these very same configurations. From where might one possibly stand to see this crisis more clearly and to respond from a more expansive space of possibility? Today, no one exists "outside" of the global system—even the most isolated living peoples are not untouched by its tendrils (Escobar 2007, 186). However, the world is not a monolith. It may even be said to contain multiple worlds, that are somehow also less than many (de la Cadena 2010; Law 2011; Mol 2002). It might serve, then, to look towards the intersecting edges of these multiple ontologies, to Indigenous ways of worldmaking, for inspiration as we reach towards restoring our relationships as creatures in the web of life and ultimately, to imagine and enact other ways to be alive on this planet. Thus, this text is an experiment in taking seriously and enacting a way of looking "from" and dwelling within an Indigenous world as a different starting point (see Escobar 2007), while drawing this perspective into relationship with academic conversations on climate change adaptation and transformation.

I address three research questions. The foundations of my inquiry are established with an examination of the power-charged intra-sections of multiple ontologies, and a deeper investigation of the nature-culture rift that is at the heart of modernity. To

[2] Following Descola, I use "Moderns" to evoke a diverse group of folks who are most immersed in the patterns of modernity. It is meant to be taken lightly, not as a discrete category of persons, but as an invitation for reflecting on what may be invisible to us—not least among academics. I conceive of modernity broadly as a set of onto-epistemological patternings that are both material and mental, reflected in structural (political and economic) processes, in social discourse, and in methodology.

address these issues, I first ask: *What might dwelling in a Maya story of a modern development project reveal about conflict between asymmetrical worlds and the trembling foundations of modernity?* Next comes the question at the heart of this thesis: *What is climate change through the onto-epistemological configuration of the Maya Cosmovision?* This question takes climate change to be a complex multiple object that reveals itself differently across multiple worlds (Esbjörn-Hargens 2010) and explores it vis á vis Maya wisdom and worldmaking practices. Thus, embedded in the framing of this question is a theoretical standpoint that is not exclusively epistemological (perspectives), but also ontological (realities). Finally, I ground these inquiries in a question of practical import, asking: *How might climate change adaptation be enacted via the Maya Cosmovision?* This question examines an Indigenous organization's way of navigating and synthesizing knowledge and practices from multiple worlds. I engage these questions empirically through a research collaboration with Sotz'il Association, an organization formed by Kaqchikel Maya professionals in Guatemala, which works to promote ancestral wisdom and practices in addressing contemporary socioecological challenges. [3]

This project draws upon and contributes to the scholarly conversation around how to usefully and ethically create synergies between knowledges of Western and Indigenous traditions in support of climate change interventions, and specifically, adaptation (e.g. Alexander et al. 2011; Apgar et al. 2015; Berkes 2008; Brugnach, Craps, and Dewulf 2017; Naess 2013; Tengö et al. 2017). I seek to help develop more adequate responses to the challenges of knowledge mutualism by deeply complementing the conversation with analytical approaches developed by social theorists and ethnographers working from a lens of ontological pluralism. Here, I sketch the relevant contours of these discourses—knowledge integration and ontological pluralism—before situating my research within them and describing its intended contribution.

[3] Kaqchikel is one of among twenty-two ethno-linguistic groups in Guatemala who are Maya (see page 11). For the relationship between Indigenous, Maya, and Kaqchikel, see Sotz'il's framing, page 17-18. The organization is hereafter referred to simply as Sotz'il, which means "bat" in Kaqchikel, and is the totemic symbol of the Kaqchikel people.

Knowledge Integration: Promises and Perils

Scholars have increasingly extolled the value of "knowledge integration," of incorporating so-called traditional ecological knowledge, local knowledge, or Indigenous knowledge (IK)[4] with Western science to improve understanding of local climate impacts (e.g. Alexander et al. 2011), and for developing mitigation (e.g. Brugnach, Craps, and Dewulf 2017) and adaptation measures (Brugnach, Craps, and Dewulf 2017; Naess 2013). The potential synergies between IK and climate change interventions are numerous, with their basis in how Indigenous knowledge-praxis, lifeways, and worldviews have co-evolved with socioecological systems (Berkes 2008, 3) to support sustainable approaches to land management (Robinson et al. 2018), biodiversity conservation (e.g. IUCN 2016), agriculture (IPCC 2019, 31), and much more. Recent special reports from the IPCC on Climate Change and Land (2019) and the Global Assessment report on Biodiversity and Ecosystem Services (2019) both emphasize IK, and although progress is still nascent towards addressing deeply entrenched inequities that pose barriers to Indigenous participation in

[4] Space here prohibits me from adequately reviewing debates on the merits and problems of key terminology in this discourse. *Knowledge integration* might be described as the process of validating one knowledge system on the terms of the other (Tengö et al. 2014, 582), yet it has been charged with obscuring differences and power inequities between Western scientific and Indigenous traditions. Co-production (Ibid; Klenk et al. 2017), grafting (Ahenakew 2016), and knowledge mutualism (Kimmerer 2013) have been offered as alternatives to describe related processes. I use knowledge integration to relate to the discourse, along with knowledge mutualism to emphasize creating relationships that respect the autonomy and integrity of knowledge traditions. Traditional ecological/Indigenous/local knowledge each possess different but overlapping meanings, and each create its own set of problems (see Agrawal 1995; Berkes 2008, 8–9; Kimmerer 2013, 49–50; Watson and Huntington 2014, 733); I primarily use "Indigenous knowledge," (IK) as it is the term used by Sotz'il and reflects ties to ancestry and collective identity. Some scholars suggest using "Indigenous knowledges" in the plural, critiquing the term IK for grouping very broad and varied knowledge traditions as if they were one thing (Smith and Sharp 2012). I use both the plural and singular; I use the plural when referring specifically to Indigenous knowledge systems from diverse people groups, or to knowledges (or knowledge-praxis) as more or less discrete "things known and applied". I use the singular to evoke the coherence of Maya epistemology (from a single people group), or to denote "knowledge" as an abstraction which refers to human sense-making in a field of relations, rather than as discrete units or systems of data that can be pluralized. Whether in the singular or plural, there is a risk of reifying the category; while I think of/with "Maya knowledge" as something which hangs together, I suggest that it hangs together because it is enacted—because it is made to (see section 3.1).

international climate processes (Shawoo and Thornton 2019; Smith and Sharp 2012), the discursive emphasis on Indigenous inclusion is an indication of the trend towards knowledge mutualism among scholars, policymakers, and adaptation practitioners.

However, as promising as the notion is, integrating or synthesizing knowledges from Indigenous and Western traditions is not a neutral endeavor (Ahenakew 2016; Brugnach, Craps, and Dewulf 2017; Goldman, Turner, and Daly 2018). Scholars and adaptation practitioners who advocate for the integration of Indigenous knowledges with Western science are often deeply embedded in the underlying assumptions of Enlightenment rational thought (Agrawal 1995; Apgar et al. 2015; Smith and Sharp 2012; Watson and Huntington 2014). Often, Indigenous and Western data alike count as valid as long as they are verifiable within positivist, Western modalities (Tengö et al. 2014, 582). Indigenous knowledge is 'integrated' by severing it from the Indigenous worldview which is its homeplace (Agrawal 1995; Klenk et al. 2017). Such a process often decontextualizes IKs to make them available to a global knowledge community. Worse, it can replicate historical patterns of colonization and the marginalization of Indigenous peoples which have yielded a dominant world which privileges Western thought paradigms (Ahenakew 2017). The call is for IKs researchers to more fully acknowledge the extent to which power and politics play a role in processes of knowledge synthesis, so that Indigenous knowledges are not subjugated to a Western scientific paradigm (Goldman, Turner, and Daly 2018; Klenk et al. 2017; Smith and Sharp 2012). These arguments harmonize with those of Latin American and Indigenous theorists which bring attention to the coloniality of knowledge and the endeavor of epistemological decolonization (Ahenakew 2016; Escobar 2007; Mignolo 2012; Quijano 2007).

Within the realm of climate change knowledge, much of scholarly attention towards Indigenous and local knowledges is part of an integrative and broad area of research on the human dimensions of climate change, which deals with "human capacities, exposure, and response to climate change" (Goldman, Turner, and Daly 2018). The concept of adaptation has emerged as a central term in these discourses. The Intergovernmental Panel on Climate Change frames adaptation as "the process of adjustment to actual or expected climate and its effects" (IPCC 2014, 118), yet this dominant framing has been criticized as overly narrow, technical, and generalizing,

obscuring both differences amongst scholars from distinct knowledge traditions, and more contextualized, local ways of knowing and experiencing climate change (O'Brien 2012; Goldman, Turner, and Daly 2018, 4; Klenk et al. 2017; Nightingale et al. 2020). O'Brien argues that the IPCC framing emphasizes accommodating to climate change reactively, rather than critically examining the worldviews that have created the structures that drive anthropogenic climate change (2012, 668). Thus, some scholars have called for transformative or transformational adaptation which aims to alter the underlying processes driving climate change and vulnerability by bringing greater critical attention to how climate change is entangled in politics and power relations (S. H. Eriksen, Nightingale, and Eakin 2015). Transformative adaptation also calls into question deeply-held values, beliefs, and ontological and epistemological assumptions, inasmuch as these subjective dimensions collectively shape and sustain the dominant development pathways that drive emissions (O'Brien 2012, 673; O'Brien et al. 2015; Hochachka 2021). These tensions between a merely technical vision of adaptation and a more transformative formulation mirror the tensions between extractive approaches to Indigenous knowledges in which they are severed from their ontological homeplace (Agrawal 1995, 427–28; Klenk et al. 2017), and the aspiration for a deeper approach towards knowledge mutualism. Towards this transformative aspiration for the inclusion of Indigenous ways of knowing in humanity's grappling with the climate crisis, the conversation among scholars within the so-called "ontological turn" in the social sciences (Law 2011) has something to offer worthy of close examination.

From Epistemological to Ontological Pluralism

Several scholars have highlighted the emerging conversation on ontological pluralism as potentially valuable in helping both to address the deeper underlying challenges posed by knowledge mutualism and to help break open overly narrow conceptions of adaptation (S. H. Eriksen, Nightingale, and Eakin 2015; Goldman, Turner, and Daly 2018; Klenk et al. 2017; Nightingale et al. 2020). This conversation—a cross-fertilization between science and technology studies, anthropology, and philosophy—might be said to begin from the idea that the very assumption of a singular ontology or nature with a diversity of epistemologies or cultures or worldviews, can be said to be a uniquely modern starting point (Descola 2013). Such a position lends itself readily to the credo that only modern rational

science can be the final arbiter of truth about the world (see Escobar 2020, 15). And it brackets out questions of whether "other" epistemologies or beliefs actually reflect something real (Hunter 2018). Ontological pluralism—the idea that realities are multiple—opens up the conversation beyond the assumption that there are different epistemological perspectives on a single natural world (see Blaser 2013a, 20; Paleček and Risjord 2013; Descola 2013) towards one in which knowledge is en/active; different realities exist vis á vis distinct knowledge-and-worldmaking practices. This is to say that the way we understand and interact with the world shapes our realities (Law and Urry 2004). Such an approach calls one to "slow down reasoning" (de la Cadena 2010, following Stengers 2005) and to engage a "deeper level" of analysis (Descola 2014, 273) in order to call into question the more fundamental assumptions on which dominant forms of knowledge are built, and this can open space for more transformational alternatives that might arise from non-modern onto-epistemologies.

Several anthropological theorists working at the analytical level of ontologies have sought to demonstrate that what in the Western world we have taken as the normal carving up of things—one world and multiple ways of seeing it, e.g. uninatural and multicultural—is not an inevitable affair. Take French anthropologist Phillipe Descola's fourfold schema, which reduces the various ways of assigning agency and subjectivity, and distributing continuities and discontinuities among the entities of the world, to four basic configurations (Descola 2014, 277). In Descola's heuristic, four distinct orientations to physicality (or bodies or nature) versus interiority (or souls or culture) reflect primary ways of "carving ontological domains in the texture of things" (2014, 271). Each of the four categories— animism, totemism, analogism, and naturalism—is characterized by combinations of either singularity or multiplicity of, respectively, physical and interior realms.[5] Eduardo Viveiros de Castro's Amerindian perspectivism demonstrates that an animistic ontology is *uni*cultural and *multi*natural: that is to say, the basic assumptions about the world are the inverse of those of a modern ontology. In perspectivist ontologies, the social world is a given,

[5] In animism, all beings share a continuous interiority or common soul but distinct bodies (one culture, multiple natures); in totemism, both interiority and physicality are continuous (one culture, one nature); in analogism, both interiority and physicality are discontinuous (multiple cultures, multiple natures); and in naturalism (modern ontology) interiorities are dissimilar and physicalities are similar (multiple cultures, one nature) (Descola 2014).

within which multiple natures are manifest. Even animals are embedded in a set of social relations, whereas nature is multiple, determined by one's embodied perspective as a species: what is blood to a human, is manioc beer to a jaguar (Viveiros de Castro 2004a).

The questions of what worlds are worth making, and what worlds are recognized in the public domain, are ethical and political concerns that open *political ontology* as a field of inquiry around the relations of power inherent in what "counts" as real on the public stage (Blaser 2013a; 2014; de la Cadena 2010; Escobar 2020). For example, in the Andes, 'earth beings' such as mountains play a role in the unfolding of political disputes over mining projects, while eluding most political analyses. These beings from Indigenous ontologies are rendered excessive or unreasonable and ignored or dismissed in public national discourses (de la Cadena 2010; Blaser 2013a)—I will demonstrate a parallel case from my field site in chapter four. If ontologies can be multiple, then we (all) are also implicated in the types of worlds we enact—this is as true for the (social) scientist as it is for our ethnographic "subjects" (Law and Urry 2004). Thus, a universalist ontology such as that of modernity, with its stark dualities and its frugal allotment of subjectivity, weighs heavily upon and threatens to erase all other worlds. Its hegemonic weight rests heavily on its insistence on singularity.

Outline of this Text

This thesis answers scholarly calls to bring the analytical tools and philosophical insights of ontological pluralism more fully into dialogue and praxis of developing ethical forms of knowledge mutualism for climate change adaptation (S. Eriksen et al. 2021; Goldman, Turner, and Daly 2018; Klenk et al. 2017; Nightingale et al. 2020). The "ontological turn" literature represents an arena of dialogue which is particularly rich in its way of bridging the nitty gritty of ethnography with philosophical questions about how humans live, about modernity's most elemental assumptions and their limits, and about how to enact sustainable futures given the constrained agencies of persons and organizations situated within particular historical and political unfoldings. It is thereby a rich resource for those seeking deeper understandings around the unprecedented crises of our day, which are at once global and local (T. H. Eriksen 2016, chap. 1).

My analytical approach follows Viveiros de Castro's (2004a) Amerindian perspectivism as anthropological theory that takes inspiration from a Latin American ontology. Taking seriously the notion that knowledge is enactive can affirm an intellectual legacy and mode of worldmaking by dwelling in Maya onto-epistemology at the level of analysis, and by allowing it to call me to question the ontological foundations of my own modern milieu. Thus, I've oriented towards an immersive approach akin to what Jack Hunter describes as "ontological flooding" (2018). At the same time, worlds are not static or hermetically sealed, and my analytical framework seeks to elucidate the ways that my contemporary Maya collaborators are also immersed in modern and postmodern discursive and material patterns. I do this by sketching how multiple worlds—configurations of knowledges, practices, and values—are enacted, how they interact, and how they are made to cohere (Mol 2002, 53–85).

The empirical collaboration with a Maya organization provides an ethnographically rich and novel landscape for this endeavor in ontological flooding, as the Maya Cosmovision is Sotz'il's fertile ground from which to elaborate and enact an Indigenous (and distinctly Maya) approach to adaptation. While several of the anthropologists developing an ontological approach have taken inspiration from field work with Indigenous peoples in Latin America (e.g. de la Cadena 2015a; Viveiros de Castro 2004a), fewer have focused on the Maya; among these, none to my knowledge have tied contemporary Maya ontologies to environmental sustainability work.[6] Finally, while my interests are philosophical and political, I also hope to make a practical contribution by showcasing Sotz'il as a case study in the enactment of transformative visions of adaptation. Thus, this research contributes to the interdisciplinary conversations on knowledge integration, ontological pluralism, and climate change adaptation as framed within human dimensions of climate change research.

[6] Lucero's (2018) research is like mine in drawing a connection between a Maya onto-cosmology and environmental sustainability, but her work examines the Maya of the Classic period. Zamora Corona (2020) adapts Viveiros de Castro's perspectivism (2004a) to analyze a Maya ontology drawing on fieldwork with contemporary Maya K'iche' people; this work is not concerned with climate change. Descola elaborates on analogical ontologies via Maya ontology from Mexico (2013, 102–11); his contribution is primarily theoretical.

Empirically, the contributions of this thesis are three-fold. First, through multiple stories of the construction of a highway project in a historically Kaqchikel metropolitan area outside of Guatemala's capital city, I examine the processes by which Maya worldmaking and knowledges are rendered invisible on the national stage, and explore what these hidden dimensions might reveal about the ontological crisis of modernity (chapter four). Second, I describe what climate change *is* (ontologically) from the Maya Cosmovision, delineating *Maya enactivism*, an Indigenous theory of causality that demonstrates how Maya knowledge-praxis, values, and realities are sustained or diminished in correspondence (chapter five). Finally, a transmodern cosmopolitical possibility is presented through an exploration of Sotz'il's forest calendar, in which orienting to adaptation from the Maya Cosmovision helps to manifest climate change responses that are locally relevant and meaningful, epistemologically integrative, and able to coordinate with multi-scalar political processes, even while being constrained in some ways by these processes. In addition to this introduction, the thesis consists of a background chapter (chapter 1), a methods section (chapter 2), an analytical framework (chapter 3), the three empirically-based analytical chapters (chapters 4-6), and a conclusion.

1. Background

> "The recognition of the identity and rights of indigenous peoples is fundamental to the construction of a nation of multiethnic, pluricultural, and multilingual national unity. The respect and exercise of political, cultural, economic, and spiritual rights of all Guatemalans, is the basis for a new coexistence that reflects the diversity of their nation." —*Firm and Lasting Peace Agreement*, Guatemala, 29th of December 1996, sec. 1.5 [7]

Around half of Guatemalans are Indigenous Maya, hailing from twenty-two distinct linguistic-cultural communities of which the Kaqchikel Maya are the third largest group with more than 1 million speakers.[8] At least since the time of the Spanish invasion, the Maya of Guatemala have lived from edges—spatially (Larraz 2011), ontologically, and epistemologically—negotiating dogged and multifaceted affronts to their cultural legacies and lifeways. They've strategically incorporated aspects of dominant culture while persistently maintaining a Maya world, even if only from the peripheral or domestic spaces where it was possible to do so out of the (never omniscient) gaze of the Spanish ruling class (Farriss 1984). Colonial rule also set into motion cycles of social and structural exclusion of the Maya. Materially, forced displacement and dispossession and coercive labor relations continue to shape the agrarian and economic structure of Guatemala (Aguilar-Støen 2016; Chivalán Carrillo and Posocco 2020), relations that reflect in persistently high rates of poverty and food insecurity for the Maya majority. Colonial-era acts of erasure, such as the burning of Maya texts and stifling of ritual practice via Christian evangelization,

[7] "*El reconocimiento de la identidad y derechos de los pueblos indígenas es fundamental para la construcción de una nación de unidad nacional multiétnica, pluricultural y multilingüe. El respeto y ejercicio de los derechos políticos, culturales, económicos y espirituales de todos los guatemaltecos, es la base de una nueva convivencia que refleje la diversidad de su nación.*"

[8] While national census data indicate Guatemala's population to be about 42% Maya (Instituto Nacional de Estadistica Guatemala 2018), scholars widely believe that the Maya are an unofficial majority (e.g.: Fischer and Brown 1996, 9; Allison 2017, 415; Carey 2004, 71; Arias 2006, 252), and the percentage of Indigenous Guatemalans as a proportion of the overall population is second only to Bolivia in Latin America (Yashar 1996, as cited in Warren 1998, 9).Orthography for names of Maya ethnolinguistic groups varies; I align mine to that standardized by the *Academia de Lenguas Mayas* (https://www.almg.org.gt/comunidades-linguisticas).

have unfolded towards a present-day reality which marginalizes the Maya onto-epistemological and spiritual heritage even while appropriating it to foment tourism and for the construction of national identities (e.g. Otzoy 2011). Politically, the Maya also remain grossly underrepresented, and their perspectives are absent among the handful of families who constitute the oligarchic elite that dominate the country's economic landscape. While this section will not parse the complex legacy of Maya exclusion, it provides context for Sotz'il's efforts towards bolstering onto-epistemic recognition for the Maya. It begins the story with the Guatemalan civil war and its impact on Maya culture and spirituality, and introduces the Maya rights movement that emerged in the aftermath. It provides a glimpse of the significance of climate change for Maya people, and introduces Sotz'il's work in the context of a warming world.

1.1 From the Ashes: Violence, the Maya Movement, and Neoliberal Multiculturalism

The thirty-six year internal armed conflict (1960–1996) marked a dark period for Guatemala and its Maya inhabitants. Gruesome violence across the country especially terrorized the Maya. An estimated two hundred thousand lives were lost (Rothenberg 2012, xvi), and around one million people were displaced (Ibid., xxii). The horrors included massacres of entire villages, widespread sexual violence, torture, and the establishment of civilian patrols that effectively pitted neighbors and family members against one another: a UN-administered truth commission would later condemn the military's actions as genocidal (Ibid., xxx). The genocide threatened not only Maya lives, but Maya lifeways and spirituality as well. During this period, Maya cultural expressions—from traditional forms of dress to sacred sites—were outlawed and profaned (Grandin, Levenson-Estrada, and Oglesby 2011, 363). At the same time, a rising wave of Protestant forces, and their alliance with the bloody military government of Efrain Ríos Montt, sparked a period of mass conversions which have rewrought Guatemala's religious and spiritual landscape (Bjune 2016), in opposition to Maya spirituality. Evangelical churches in Guatemala promote a worldview of progress and prosperity while forcefully rejecting Maya spiritual practices as backward and satanic (Caballeros 2011).

Yet amidst these forces, a multi-faceted Maya cultural resurgence was swelling from stirrings within the Indigenous factions of the revolutionary left, lead by some of the first Maya to gain university-level educations in the 1970's (Arias 2006; Bastos 2012). The "Maya Movement" or "Pan-Maya Movement,"[9] as it has come to be called, describes an array of efforts and Maya organizing that have flourished since the end of the war to promote Indigenous rights and cultural revitalization. Since the signing of the Peace Accords in 1996, Maya organizations have arisen to promote arts, language systematization, bilingual education, and political representation and reforms. At the same time, Maya spirituality has developed more institutionalized, more standardized, and more visible forms than ever before (Althoff 2017). The "Maya Cosmovision," a concept first articulated by Western scholars investigating Mesoamerican worldviews, has been re-appropriated by Maya Guatemalans for the purposes of political, cultural, and spiritual vindication (Cano Contreras, Page Pliego, and Estrada Lugo 2018). Maya ceremonies, for decades clandestine affairs done in secret or relegated to odd hours of the night, are now performed openly at sacred sites, often with participation from members of multiple Maya ethno-linguistic lineages. The movement has also given rise to revitalized efforts of contemporary Maya scholars and *Ajq'ija'*[10] to document and systematize Maya knowledge, often with financial support from international organizations (Ibid.; 2018, 9; García, Curruchiche Otzoy, and Taquirá 2009). These efforts point to an invigoration of cultural agency among the Maya, who, despite having suffered great losses and deep trauma from the war, have simultaneously forged a rich and multi-faceted process of cultural revitalization (Arias 2006).

International winds were also blowing in the budding movement's favor: global Indigenous rights activism, multiculturalism, and sustainable development were

[9] "Pan-Maya" refers to the construction of a shared "Maya" identity that transcends linguistic group distinctions and strengthens Maya political mobilization as a unified *pueblo Maya*, or Maya people, bolstered by the UN-backed discourse of Indigenous rights (Warren 1998, 8). Prior to this movement, cultural identity was usually more localized—e.g., one's identity would be Kaqchikel Maya or K'iche' Maya—this is still the most salient level of identity today for many Maya (see Bastos 2012).

[10] Maya spiritual guides or day-keepers– see pages 23-24. Throughout the text, words in Spanish or Kaqchikel are introduced and (when needed) defined—the word is italicized the first time it is used in a paragraph. See Appendix A for a glossary of Spanish and Kaqchikel words and phrases used repeatedly in this text. Also see the note on translations at the beginning of Appendix B, page 122.

emerging hand-in-hand with neoliberal ideologies on the global stage. The passage of the International Labour Organization's Convention No. 169 on Indigenous and Tribal Populations in 1989 was a symbolic moment for legitimizing the ideals of multiculturalism, the idea that diverse cultural groups have the right to self-determination and to develop their own cultural expressions, and for eschewing assimilationist ideologies that predominated in earlier development ideologies (ILO 1989; Fischer and Brown 1996, 52–53; Cojtí Cuxil 2007, 125; McNeish 2008, 35–36). At the same time, neoliberal tenets were gaining influence in the policies of the World Bank and among other multilateral and bilateral funders. Neoliberal reforms downsized states and expanded the role of civil society and the space occupied by Indigenous organizing (Hale 2004). Moreover, as failures of neoliberal policies to address structural inequities in Latin America became apparent (Sankey and Munck 2016, 335–36), the World Bank began to promote "social capital"—intangible factors revolving around shared identity and norms—as a component of functional markets (MacNeill 2014). This shift around the turn of the millennium, along with an increasing emphasis on "culture-based development," (Fischer and Brown 1996, 51) furthered the proliferation of Indigenous organizing. New schemes like REDD+ (Reducing Emissions from Deforestation and forest Degradation) and conservation-as-development initiatives (often lead by NGOs with transnational funding sources, rather than by states) aimed to promote conservation while bringing local and Indigenous peoples into global markets by commodifying their landscapes (Aguilar-Støen 2017; West 2006). These changes also paralleled the budding interest among scholars in the role of IKs for sustainable development, and the growing disillusionment with post—World War II era Eurocentric development theories (Agrawal 1995, p. 413-414). Unprecedented amounts of funding soon became available to Maya civil society organizations as the ideal facilitators of social capital and grassroots development. The international environment was ripe for the Pan-Maya movement (MacNeill 2014, 307–8).

From a certain vantage point, the gains and impact of the Maya movement piqued early on and then stalled. In the language of human development indicators,

Guatemala's "haves" remain predominantly Ladino[11], while the Maya occupy a large swath of the expansive number of "have nots." Most of Guatemala's Maya population still lead lives of hardship and exclusion, and are scarcely represented in positions of political and economic power, even as the government pays lip service to the ideals of a multicultural society (Cojtí Cuxil 2007). Economic opportunities are few in rural Maya communities, and racism saturates interactions in urban areas. Indigenous activist groups suffer violent suppression by the state, especially when Indigenous interests conflict with those of powerful and moneyed actors, such as in territorial conflicts with extractive industries (Carey 2004).

The movement's vision for a unified Maya identity has also not been without controversy: the movement seeks to define what it is to be Maya in ways that have been charged as highly performative and that do not resonate with some Maya people—especially those identifying more strongly with their local communities or with Christianity (Bastos 2012)—and has been described as engaging in politically strategic cultural essentialism (Fischer 1996; Warren 1998). In relating to these debates, I take Maya identities and a Maya world as enacted. Maya identities are articulated vis á vis translocal discourses of indigeneity (Li 2000), but enactment underlines the key role of ancestral knowledge-praxis in their emergence. While I do not equate performativity with falsehood, I also am not naïve to the exclusions associated with the Maya movement and its efforts to crystallize Maya identities and modes of spiritual practice. However, for the purposes of this research, it is enough to hold that the Maya Cosmovision is a social construction, that it is consequential (e.g., has shaped the contemporary social landscape of Guatemala), and that while it manifests in the contemporary international and national climate, it retains ties of continuity to ancestral Maya practices and thought (Cano Contreras, Page Pliego, and Estrada Lugo 2018; Carlsen and Prechtel 1991).[12]

[11] Ladino/a has come to be more or less synonymous with mestizo in Guatemala, referring to a person of mixed Indigenous/European descent, or a person of Indigenous descent who is Spanish-speaking.

[12] See Warren (1998) and Fischer (1999) for accounts from anthropologists confronting the tensions between Maya activism and contemporary social constructivist theories of identities. See also Li (2000), who describes indigeneity as an articulation that is neither essential nor random, but based on a historical and political positionality; and Radcliffe (2017) who discusses its co-emergence with patterns of coloniality/modernity.

In fact, the most significant and lasting advance of the movement may very well be in its forging of a pan-Maya identity that reaches beyond local and linguistic affiliations and bolsters visible forms of cultural and spiritual revitalization (Sieder et al. 2001, 24). That a significant number of young Indigenous Guatemalans now consciously inhabit their cultural subjectivities with pride and purpose, and have a vision for personal advancement that does not require shedding their indigeneity[13], is not to be taken for granted. Maya organizations such as Sotz'il enrich Guatemalan civil society and dedicate themselves to diverse ventures from promoting culture-based arts, to community-based tourism, to political advocacy. Traditional authorities and organizational structures have strengthened in some communities and bolster local autonomy and Maya principles of solidarity, serving their communities over issues from judicial processes to natural resource management. Indigenous scholarship has also flourished; Maya linguists have developed written forms of their languages, and Indigenous intellectuals have sought greater control over their own cultural representation, once the exclusive realm of Western scholars (Warren 1998). The Maya Cosmovision is alive, and emerges in salient relationship to contemporary post-war, neoliberal, and multicultural discourses and processes.

1.2 Compounding Vulnerabilities: Climate Change, Poverty, and the Maya

Because of both social and geographical factors, Guatemala is highly vulnerable to climate change (ND-GAIN 2020). Its geographic particularities and its propensity for tropical El Niño and La Niña storm patterns make it particularly prone to extreme weather events (MARN 2015), earning its rank of sixteenth in the world for risk to climate impacts from such events (Eckstein, Hutfils, and Winges 2019, 40). Changing rainfall patterns and increasing water scarcity portend increases to already high levels of food insecurity for the majority of the Maya who depend on rain-fed

[13] Following Radcliffe (2017), I take indigeneity " as the socio-spatial processes and practices whereby Indigenous people and places are determined as distinct (ontologically, epistemologically, culturally, in sovereignty, etc.) to dominant universals" (Ibid., 221) Indigeneity is a "relational, historically- and geographically-contingent positionality" (Ibid, 221). It is not capitalized because it does not refer to a particular group (Ibid, 226).

subsistence farming for survival (WFP 2020). The last decade has seen marked disruptions of rain patterns that Maya people have depended upon to establish the rhythms of agricultural production. Droughts provoked extreme food insecurity in 2015, 2016 (FAO 2016), and again in 2018 (UN 2018). I conducted fieldwork in 2019 amidst the driest year on record (INSIVUMEH, as cited in Albani 2019). In 2020, the effects of (yet another) drought were compounded with the economic impacts of COVID-19 (Stevens 2020). Subsequent hurricanes Eta and Iota stormed through Central America in November of 2020, impacting predominantly Indigenous populations. These storms may portend a disturbing future for a region subject to capricious weather events: they destroyed crops, livestock, and equipment, and pushed an estimated three million Central Americans, already living on the brink due to pandemic restrictions, into situations of acute food insecurity (USAID 2020). Given how intimately Maya peoples' lives are tied to the cycles of agriculture and the seasons, climate change is increasingly held as an issue of salience and concern.[14]

1.3 Meet Sotz'il: An Indigenous Organization

Both the Maya movement and climate change are contexts for understanding Sotz'il and their work. Its founding members—five Kaqchikel men from the Chimaltenango department—have been collaborating since 1992 to advance Indigenous rights, and have chosen thematic areas that integrate community development and environmental issues relying upon and revitalizing Indigenous knowledge-praxis. Sotz'il conceives of their work across three scales: international, national, and local; and divides it into four branches: community development, Indigenous rights, full and effective participation, and planning and research. At the local level, Sotz'il supports community-based groups engaged in natural resource management work. At the national and international levels, the team represents Indigenous perspectives in processes relevant to climate change and biodiversity conservation. Sotz'il members also enact research that seeks to document and systematize Indigenous knowledge. To meet these ends, they build and engage a complex array of partnerships.

[14] This observation is based on conversations both from my fieldwork and from the years I lived in Maya communities in Guatemala (2013-2017).

When I first spoke with don Julio[15], Sotz'il's Director of Programs and my closest collaborator in this research, he introduced Sotz'il as an "Indigenous organization." He went on to situate Sotz'il down concentric circles of identities, from the Indigenous peoples of Guatemala, to the Maya people, to the Kaqchikel people; he described the territorial range of the Kaqchikel as well as their relationship to other nearby (Tz'utujil and K'iche') Maya peoples. His way of describing Sotz'il thus situates them in relationship to other Maya identities and links them to a global "Indigenous" category. Indigeneity is a modern category whose meaningfulness emerges in a web of relationships that span through global and local scales (Radcliffe 2017). By describing themselves as an Indigenous organization, Sotz'il aligns themselves with contemporary international trends towards inclusion and "empowerment" for Indigenous peoples. At the same time, it highlights an orientation common to those in the Mayanist movement, of forging a pan-Maya identity which seeks to encompass and unify local identities, and of defining and realizing pathways of development that are uniquely Maya.

Sotz'il can be situated thematically, geographically, historically, and politically, within each of the sections of this chapter. Sotz'il members' Kaqchikel identities tie them to Maya and Indigenous histories of social exclusion and cultural repression. These aspects of what it means to be Maya reflect in the organization's purpose to revitalize Maya culture and identities. Sotz'il's history also ties directly to that of the Maya movement: the founding members began organizing amidst efforts to pass a popular referendum of 1999 which sought to implement promises made by the Peace Accords to promote Indigenous equality. Their work has also been enabled and bolstered by a post-cold war international environment with new awareness of Indigenous rights and multiculturalism, and backed by the flow of funds and proliferation of civil society in a neoliberal economic climate. Finally, their work is enacted in worlds that are warming rapidly, are highly vulnerable, and have already felt life-altering impacts from climate change.

[15] Some first names are preceded by *don*, *Tata*, or *Nana* in this text. These titles correspond with how I addressed these individuals. Any married person can be addressed as *don* or *doña* (feminine), but in practice the terms have more to do with age. *Tata* and *Nana* are their Kaqchikel homologues; in this text (and often in quotidian usage), they address *Ajq'ija'*. See glossary, Appendix A, page 120.

2. Enacting the Research: Methods

> "So what of research methods? Our argument is that these are *performative*. By this we mean that they have effects; they make differences; they enact realities; and they can help to bring into being what they also discover." —"Enacting the Social" (Law and Urry 2004, 392–93 emphasis in original)

> "The conventional tools which the social sciences have inherited from the European political philosophy of the seventeenth and eighteenth centuries have to be divested of their centrality and paradigmatic clout, for these tools are the direct outcome of a highly unusual reflexive account of highly unusual historical circumstances. At the time it was produced…this account both captured and fashioned the peculiarity of the kind of collective within which the Moderns felt they were bound to live; but it has become obvious, even in the West, that the account is no longer apposite to the multiple worlding states we live in and to the urgency of the impending ecological doom." —"Modes of Being and Forms of Predication" (Descola 2014, 278–79)

2.1 Background and Motivation

The interests that unfolded this ethnographic research project started with my experience living and working in community development in Guatemala, primarily in Maya communities, from 2013-2017. Hoping to develop integrative socio-ecological perspectives on the changes I witnessed in Guatemala during those years in the context of our planetary predicament, I began the master's program in Development, Environment and Cultural Change at the Centre for Development and Environment (SUM) of the University of Oslo (UiO). At UiO, this research also contributes to AdaptationCONNECTS, a research project lead by Karen O'Brien at the department of Sociology and Human Geography, which focuses on integrative research approaches to understanding and enacting transformations to sustainability. My motivation has been to contribute to broader, deeper, and more adequate responses to the metacrisis by exploring modernity and climate change through Maya onto-epistemology.

2.2 Methodology: An Enactive Research Paradigm

In contemporary ethnography, it is widely recognized that the researcher has a role in co-generating knowledge which "travels back and alters the very social worlds it purports to explain" (Pachirat 2018, 18). Law and Urry describe in detail, how social research can crystallize the world it describes. Methods are performative. They "do not simply describe the world as it is, but also enact it" (Law and Urry 2004, 391). Reality is performed through our categories, brought into being in non-arbitrary ways; the concepts that we use to understand worlds are reified, made [more] real, as they are articulated (Ibid.).

In particular, the schism between the social and the natural—a schism, you will recall, I take as central to the ontological crisis of which climate change is symptomatic—is reified in traditional disciplinary methods and approaches to ethnography. For example, Seale writes that ethnography "belongs to the theoretical tradition which argues that the facts of society and culture belong to a different order from those of nature" (2018, 258). However, if my very research inquiry points back towards (and calls into question) this fundamental rift, it follows that I must pay close attention to how, just by going along with what social scientists tend to do, my methods may reinforce the rift even while my stated aims claim to revalorize other ways of worlding (see Descola 2014).

Following Jack Hunter, I adopt something like *ontological flooding*, akin to "removing the flood barriers and letting the damned facts flow." The damned facts are those excluded, banished outside the ontological threshold of modernity (Ibid., 196). Flooding allows us to synthesize and move between multiple realities and the perspectives they unfold, unbracketing non-modern phenomena from the realm of the phenomenological (is it real *for* participants?) so that they can *also* be subjected to ontological investigation (in what other ways might it be real?). In addition, the decision to draw upon an Indigenous ontology towards anthropological theory-building reflects an enactive stance at the level of my analysis.

2.3 Research (Co-)Design, Methods, and Analysis

Research Partnership and Co-design

The design and aims for this project were developed in collaboration with Sotz'il. I identified Sotz'il as a potential research partner because of their work at the intersection of the Maya Cosmovision and climate change, which I had identified as the thematic nexus of this project, and because of their demonstrated enthusiasm for collaborating with me from the outset. Sotz'il's motivation to collaborate with me in this research is multifaceted. As mentioned in section 1.3, research is one of four central branches of Sotz'il's work, and collaborations with Guatemalan universities and foreign researchers help propel their research objectives of rescuing, systematizing, documenting, and sharing Indigenous knowledge. Sotz'il members also share with me the conviction that the Maya Cosmovision and ancestral knowledge-praxis contain valuable contributions for humanity in facing the climate crisis. Strategically, they also see the role of foreign scholarship (including my thesis) as one of bolstering legitimacy and recognition for Kaqchikel onto-epistemologies, thus furthering their aims for political inclusion.

Overview of Methods

Fieldwork for this thesis was conducted over seven weeks in October and November of 2019. In keeping with an ethnographic and participatory approach, the research design was emergent and flexible, with a broad orientation towards exploring the role of the Maya Cosmovision and IK in climate change adaptation. Methods included interviews, workshops, and participant observation. Three participant groups were identified through conversations with Sotz'il members: Sotz'il team members themselves, community leaders engaged in different community-based initiatives which Sotz'il advises, and Maya spiritual guides (*Ajq'ija'*). Semi-structured interviews were conducted with individuals from each group. Two dialogical workshops were held with community leaders and two with spiritual guides; various Sotz'il team members also participated in the four workshops as their schedules permitted. I also engaged in participant observation throughout the seven weeks: working from Sotz'il's office, observing and participating in activities, walking to

the market for lunch at nearby *comedores* (eateries) with team members, and engaging in impromptu conversations. I also accompanied Sotz'il team members on three field site visits to predominantly Kaqchikel communities where Sotz'il supports initiatives. Research inquiries extended into all domains of my life while in Guatemala: during weekend visits to San Juan Comalapa and San Juan la Laguna where I have personal ties, conversations and shared daily life activities with Maya (Kaqchikel and Tz'utujil) friends provided a fresh vantage point in the context of intimate relationships. In addition to recording interviews and workshops, I documented field notes in a journal and voice memos through my phone's audio recorder; I also referenced a variety of documents published by Sotz'il which represent their projects.

Participant Selection

Sotz'il and I identified three primary categories of research participants defined by their community roles and relationships with Sotz'il: Sotz'il team members, community leaders, and Maya spiritual guides or day-keepers (*Ajq'ija'*). Members of these three groups were identified because of the valuable perspectives we believed each of them would share. Participants are anonymized in interview and workshop recordings, transcriptions, and in this text. Their names, pseudonyms, and participation information were recorded in a password-protected document that will be deleted upon completion of the project, according to guidelines from the Norwegian Centre for Research Data. Individuals were also given the opportunity to indicate whether they would like to be recognized by name and/or photograph in a summary report that will be delivered to Sotz'il after completion of this thesis (see below, page 27). Here I describe who these individuals are, and general differences in perspective represented by their distinctive positions.

Sotz'il Members

Sotz'il team members—employees of the organization—are at the heart of this research, representing both the closest informants and co-researchers actively involved in coordinating the data generation activities for this project. I interacted with all team members who worked in the Sotz'il office throughout my field work, and formally interviewed six individuals, including all those involved in research co-design and coordination. A table of these individuals—listed by pseudonym and their

respective positions within the organization, is published in Appendix C. These participants are all Kaqchikel men with secondary and university-level educations, and with years of reflection and practical experience towards fostering Indigenous knowledge recognition and developing approaches of knowledge mutualism. Most have also participated as Indigenous representatives in national and international forums and spaces related to climate change, biodiversity, and Indigenous knowledge. Their views are thus informed by global discourses and an awareness of political processes and realities at local, national, and international levels.

Community Leaders

Individuals identified by Sotz'il as community leaders were invited to participate in two workshops and several interviews for this project; most were leading members of community-level initiatives which Sotz'il supports. Community leaders accounted for five individual interviews and a group interview—some in the office and some on site visits. In addition, approximately seventeen people participated in one or both workshops for community leaders. The perspectives of this research group reflected lived experiences of cultural and environmental changes from mostly rural Kaqchikel communities. They also reflected community leaders' experiences within small community-based organizations that seek to address issues of livelihoods and environmental sustainability. Approximately two-thirds were men.

Spiritual guides

Sotz'il collaborates closely with several Maya *Ajq'ija'.* The *Ajq'ij*[16] is an ancestral position of authority that can be translated as "day counter," and refers to the role of maintaining the count of time via the Maya sacred calendar (Sac Coyoy 2007, 2–3). Ajq'ija' are also charged with maintaining formal knowledge of Maya philosophy and traditional practices. The guides' roles at Sotz'il transcend the divisions between spiritual and intellectual authority that are common in modern institutions. Ajq'ija' conduct Maya ceremonies and provide spiritual counsel to Sotz'il, yet they are also engaged as leading experts in Kaqchikel knowledge—as Maya scientists. Thus, they play a critical role in Sotz'il's aims of integrating Maya knowledge, principles, and practices in their work. Among participants, the guides possess the highest level of

[16] *Ajq'ij* is singular; *Ajq'ija'* is plural.

authority for maintain formal knowledge of the Maya Cosmovision; their expertise touches the realms of energy, dreams, and ancestors: domains the Ajq'ija' are uniquely positioned to access and interpret for others. Thirteen Ajq'ija' contributed to this project—eight women and five men. I conducted in-depth individual interviews with two of them. Eleven of these individuals participated in one or both workshops for spiritual guides, and two participated in workshops for community leaders.

Workshops

Principles and methods from Participatory Action Research inspired discussion-based workshops as a data generation method involving groups of participants. These methods were chosen to quickly generate data given time limitations, to engage collective meaning-making processes around issues of change and adaptation, and to gather a variety of Kaqchikel perspectives on the research themes. Two workshops were designed and conducted for community leaders and two for spiritual guides; I served as primary facilitator with support from Sotz'il team members. Flexible structures were used so that dialogues could unfold in a way that allowed participants to express topics that were salient and meaningful for them. For details regarding methods used, see Appendix C.

Interviews

I recorded semi-structured interviews with twelve people. These included interviews with seven Sotz'il team members, and five community leaders; among them, two were also *Ajq'ija'*. I prepared interview guides which I used lightly to guide the interviews through personal, professional, organizational, and thematic conceptual questions, while allowing the conversations to unfold in an open way. Most interviews with Sotz'il members lasted between two and three hours. An abbreviated interview guide was prepared for don Bayron, Sotz'il's Executive Director, to allow for a one-hour interview. The interviews with Ajq'ija'—Tata Pedro and Nana Paulina— each lasted between two and three hours. Interview guides for community leaders included personal, community, project, and thematic conceptual questions. Interview guides are published in Appendix C of this document (in Spanish).

Participant Observation, Site Visits, and other Data

Through participant observation, I immersed myself in Sotz'il's daily office life. I also accompanied Sotz'il members on three field site visits to predominantly Kaqchikel communities where Sotz'il supports initiatives: to visit a group of agricultural producers engaged in local reforestation at El Sitio, an outlying hamlet of Patzún; to see a medicinal public bath project in San Antonio Nejapa, a municipality near Acatenango; and to learn about a medicinal plant project lead by an *Ajq'ij* in San Antonio Aguascalientes, a municipality of Sacatepequez. Analysis draws most directly from data generated from workshops and team member interviews, while field site visits granted me greater background knowledge regarding the types of initiatives community leaders represent, a better understanding of Sotz'il's work at the local level, and a more situated understanding of Kaqchikel peoples' experiences of climate and environmental change within their landscapes.

Data processing, Analysis, and Presentation

When I left Guatemala, salient themes were ripe to guide me in preliminary analysis. My framework and empirical analysis emerged and crystallized over time through the process of writing, which has been an iterative one of moving between this text, literature, longer drafts of analytical writing, and transcriptions of empirical material. I handled empirical material by transcribing all interviews and annotating workshop recordings (verbatim transcriptions were not always possible), jotting down analytical insights along the way. Content was sorted and coded broadly in NVivo 12 to help facilitate easy referencing. In its presentation, I have endeavored to balance theoretical analysis with narrative vignettes, to absorb the reader in detailed depictions of the social world—an approach typical to ethnographic writing and appropriate for a case study whose relevance is to be found as much in its specificity as in its generalizability, and in the art and science of constructing an interpretive link between the two (Geertz 1973; Pachirat 2018, 149).

2.4 Ethics, Tensions, and Positionality

Personal Data Protection and Ethical Considerations

This project underwent an approval process via the Norwegian Centre for Research Data (NSD), who reviewed the project plan according to their guiding framework for ensuring participant privacy, informed consent, and secure treatment of data. While the NSD process was supportive overall, it brought up some questions due to the way Sotz'il's role blended the line between informants and co-researchers, and the difficulties of applying a framework developed to protect individuals to research oriented around collective knowledge. Under guidance from NSD, all participants in this project have been anonymized. Anonymization raised questions in relationship to Sotz'il, as the guidelines offered by NSD assume participants are informants, rather than co-researchers who deserve recognition for their contributions. Sotz'il and I decided that the important matter was that all participants have the opportunity to be recognized, if they so choose, by name in the report that will be written in Spanish for participants. Sotz'il members were also informed that although they would take pseudonyms, it may be possible for an interested person to identify individuals from this text based on their roles at Sotz'il. As their anonymity was not important to them for this project, they were all comfortable with this. There was also the issue of who would be processing the data. NSD guidelines are designed to protect research participants' data, under a framework of rights to privacy—Western in its emphasis on the individual as the possessor of knowledge. However, this framework posed difficulties in the context of exploring (collective) Indigenous knowledge, and in the intention to avoid an extractive approach (Klenk et al. 2017). In other words, interview and workshop recordings contained (in part) collective IK, and participants participated under the explicit understanding that they were contributing to a Sotz'il research project, based on the trust they have with Sotz'il. So it was problematic to be required to protect the information *from* Sotz'il. Thus, Sotz'il was made a joint data controller, but I was advised to only share anonymous data with them so as to avoid a legal requirement that they have a contract with the University of Oslo. Sotz'il agreed to this arrangement. In the interest of transparency, I have also given Sotz'il members the opportunity to review all direct quotes by themselves which are translated and reproduced in this text.

Beyond the data protection considerations driven by the NSD, I also consider this project to be ethical in that it seeks to contribute to discourse around transformative change in light of the global challenge of climate change. However, it has been important to consider the ethical murkiness of asking Maya people to contribute their wisdom to confront global challenges, when they themselves have suffered (and continue to suffer) from long histories of exploitation and repression by powerful actors and institutions who benefit from the processes that drive climate change and ecological destruction (Whyte, Caldwell, and Schaefer 2018; Warren 1998). The extent to which Maya knowledge is primarily for Maya communities, and whether it can be drawn upon ethically to address global challenges, was a tension which arose in relations with participants, among whom I encountered a range of perspectives. There was also the uncomfortable (for me) perception expressed by some participants that the objective of the research was for a North American to extract Indigenous knowledge to help her fulfill her master's degree. In response, I sought to present the project honestly and transparently, acknowledging that I benefit from the endeavor, but emphasizing what I hoped were the shared intentions of working together to give visibility to Maya wisdom and its contributions for humanity and for Mother Earth. When challenges arose, I sought to give power to participants to shape the course of our dialogues in ways that were meaningful to them. In reciprocity, I also committed to developing a second product of this research will be a summary report written in Spanish to be shared with Sotz'il and other participants. The content will be developed collaboratively in alignment with Sotz'il's goals of documenting and systematizing Indigenous knowledges and returning them to Maya communities. These comments are not meant to imply that I have resolved the many complex challenges of working across uneven power relationships towards decolonizing self and research relations (Gram-Hanssen, Schafenacker, and Bentz 2021), but rather to highlight a few of the ways I have engaged the process, reflected, and responded.

Subjectivities, Positionalities: Who I am in *Guate*

Who I am in *Guate* emerges in a web of relationships to people, place, and patterns of power—at the cross-section of my subjectivities and my positionalities. These are closely tied to how I am situated as a (North American) foreigner and a highly (Western-)educated person—aspects of my embodied circumstance that have allowed me to inhabit spaces from which many Maya have been excluded, and to

have access to resources and opportunities which they often do not. In many ways, I have benefited from the standing which has enabled my ability to conduct this research, even while in some ways it has created distance between myself and participants. Other aspects of my identity have also influenced how this research has emerged. For example, the gendered (female) aspect of my subjectivity was something I found myself actively managing and reflecting upon in an organizational environment mostly dominated by masculinity. I also find that my own experiences navigating ambiguous and sometimes overlapping identities as a person of Middle Eastern and White American bicultural heritage, contributed to my interest in Sotz'il members' way of moving between multiple worlds and perspectives. In addition, my training as an anthropologist, and five years of living in Maya communities and in other unfamiliar contexts, have contributed to my sense of being positioned in edge spaces. Finally, I am also positioned ontologically: for this research, I have reflected on how my embeddedness within modern ontology has both enabled and constrained my ways of seeing, and has shaped my experience and inquiries.

Research Limitations

This research does not attempt to be broadly representative of Kaqchikel perceptions of socio-ecological change, climate change, nor to present an unbiased perspective on Sotz'il's work. Collaborating with Sotz'il as a gatekeeper has provided research access, and also impacts the research. The individuals represented here are connected with a Mayanist (e.g., associated with the Maya movement) organization that seeks to work within existing socio-political structures to affect change. Perspectives of more explicitly activist Mayanist organizations on the one hand, and on the other hand, of Maya who do not identify with the movement at all, are underrepresented. The limited time that I had to conduct fieldwork and my own inability to speak Kaqchikel are also limiting factors. While I do not doubt that intensive study of Kaqchikel would reveal much deeper insights into a Maya world, this project's exploration of contemporary change processes and how Maya negotiate modern spaces and processes, has been fruitfully engaged in Spanish, especially because most research participants are fully fluent in Spanish. My hope is that despite the limitations of this project, it opens inquiries to be developed by further research, and offers an analytical framework in service of a deeper-than-usual approach.

3. Enactment, from the Edges: Analytical Framework

> "Although it is commonly said, these days, that worlds are constructed, it is not known who are their architects and we still have very little idea about what materials are used in building them." — *Beyond Nature and Culture* (Descola 2013, 11)

> "The spiritual celebration of life and of existence in its abundance, the alimentation of life and of existence, is given in each act of our human life. This celebration is the culminating moment of existential relationship with the Whole." — *Maya Cosmovision, Abundance of Life* (Cochoy Alva 2006, 21)[17]

A common tenet among new ontological approaches in anthropology is the idea that in order to grapple more honestly and deeply with radical alterity, one must seek to not automatically start from modern assumptions of thought, but to develop a more fundamental level of analysis for understanding Indigenous or "non-modern" peoples and their ways of worlding (see Descola 2014, 273). Thus, the argument goes, we might be able to see ourselves (the "Moderns") more clearly and to destabilize ontological assumptions that have (among other things) set the crises of the Anthropocene in motion (Viveiros de Castro 2015, 6). Theorists within this wave are experimenting with ways to rethink the dualisms that mark post-Enlightenment thought and its world: epistemology/ontology, subject/object, natural/social, human/other-than-human, Western/non-Western "other." Some scholars have sought to show that while such dualisms are not absent in Indigenous and non-modern ontologies, they are carved and conceived of differently (Viveiros de Castro 2004b; Descola 2014; Course 2010). Anthropologists of this wave are also finding novel ways to draw upon concepts from native ontologies as inspiration for anthropological theory-building (Paleček and Risjord 2013, 6). Viveiros de Castro's Amerindian perspectivism is one of the most widely influential and original examples of such an

[17] My translation from the Spanish text *Cosmovision Maya, Plenitud de la Vida*: "*La celebración espiritual de la vida y de la existencia en su plenitud, la alimentación de la vida y de la existencia, se dan en cada acto de nuestra vida humana. Esta celebración es el momento culmen de relación existencial con la totalidad.*"

approach, of taking Indigenous onto-epistemologies seriously by treating them not only as objects of study but as valid contributions towards the human pursuit of wisdom and understanding in their own right. Such an approach also permits the theorist to inhabit an edge space that might help her to see the patterns of modernity more clearly.

This is the spirit in which I developed the following analytical framework, which finds inspiration from the Maya Cosmovision as articulated by my co-researchers and in contemporary texts by Maya authors. The framework began to emerge as a way to help me bring attention to knowledges, practices, and worlds, whilst clarifying relationships between them. But it needed to do more than help me understand how worlds are constituted: it also needed to help elucidate the dynamic and charged relationships among multiple worlds: how a Kaqchikel world under constant change responds and adapts to the unique pressures of this global moment, how power shapes worlds and their intra-relationships, and how worlds intersect as people move within and among them. Finally, it needed to support me in moving towards a deeper understanding of how to bring multiple worlds to bear on questions of transformations in a warming world. The analytical framework delineated in this first section of the chapter brings attention to ontologies, epistemologies, methodologies, and axiologies as components in the constitution of worlds, in multiple renderings of climate change, and in the enactment of the Maya Cosmovision. In the second section of the chapter, I explore the collisions, intra-actions (Barad 2007, 170), and overlapping edges of worlds, relating to Marisol de la Cadena's way of conceiving partial connections (2010) and to Dussel's transmodernity (2012), to address the way multiple worlds relate and interact, and the ontological politics at play (de la Cadena 2010). My intention is not to create a meta-ontology in which a duality between modernity and the non-modern is treated as a metaphysical fact—to do so would be to re-enact the notion of a pre-given singular reality (Blaser 2014, 5–6; Murray 2019). Rather, the metaphors here that sketch how worlds cohere and collide are offered in a spirit of play, to be used inasmuch as they serve to understand what I observed and the conversations I had during fieldwork, and to crack open the imaginal and the possible in the hopes of widening solution spaces for sustainability.

3.1 How Worlds Cohere: A Multi-dimensional Cosmo-vision

Constellations of Knowledges, Worlds, Praxis, and Values

Launching my framework from the academic conversation on knowledge integration, I begin with epistemologies, using Berkes' definition of traditional ecological knowledge (TEK). Berkes sees TEK as a "cumulative body of knowledge, practice, and belief" (Berkes 2008, 7). It is transmitted intergenerationally, evolving through time in adaptive relationship to the land. TEK can be information, but also refers to *ways* of knowing, embodied in traditional practices (Berkes 2008, 7–8). The concept of TEK or Indigenous knowledges (IK) is important for understanding Sotz'il's adaptive strategies, as I will show in chapter six. However, for the purposes of my analytical framework, and as it is used throughout this text, I use epistemologies to refer broadly to human sensing and storying within relations among entities that compose our worlds. In this research, it points broadly to participants' perspectives beyond (but inclusive of) its narrow definition as ancestral knowledge.

While Berkes' focus is mainly epistemic, his emphasis on knowledge as a process and on practice points us towards an enactive quality of knowledge, thereby begging methodological and ontological questions. So I might take Berkes framing of TEK and make explicit what is implicit, to move towards a broader framework that may be more adequate for my purposes. Thus, I delineate three points of constellation: epistemologies, ontologies, and methodologies. I use *ontologies* to refer to specific configurations of reality and of experience, realized in mutual resonance with human perceptions and actions. As discussed in the last chapter, ontologies are realities brought into being, in ways both constrained and enabled by conditions and relations. Thus, phenomena and entities outside the ontological limits of modernity—such as the way water retreats from human conflict (see chapter five), or the spirit Guardian of a hill (see chapter four)—are latent from the standpoint of humans, and are realized materially (that is, in a real way)[18] through collective storying and practices.

[18] One might conclude that I am replicating an unexamined tenet of a modern naturalistic ontology which equates the material and the real. For the Maya, the real includes energetic and ancestral dimensions across time and space. However, I consider these aspects also to be "material" in the sense

In my framework, *methodologies* refers to the practices that enact worlds. As I suggest in my methods chapter, research methods have contributed to the enactment of this thesis, but I am not using the category exclusively to discuss *research* methods. Here, I am using methodology to talk generally about all practices that enact onto-epistemologies. My conception relates to Annemarie Mol's emphasis on the practices that enact atherosclerosis. In her book, *The body multiple: ontology in medical practice* (2002), Mol demonstrates how physicians enact atherosclerosis of the lower limbs as *multiple* via distinct diagnostic practices. For the vascular surgeon, atherosclerosis is pulsations felt in the patient's feet and their expression of pain when walking; for the pathologist, it is the thickening of the vessel walls under the microscope; for the technician it is low blood pressure in the limbs as measured in the lab. While these expressions of the disease are ontologically multiple, they are made to coordinate into a coherent experience: an atherosclerosis that for *most* intents and purposes can be treated as singular. For the purpose of making sense of my research findings, methodologies refers specifically to practices that are shaded with ancestral meanings, considered by the Kaqchikel to be enactive in maintaining order and balance amongst entities in the cosmos. For example, Kaqchikel *Ajq'ija'*[19] use fire ceremonies, among other techniques, to communicate with *nahuales*, ancestral energies that order and imbue time through the articulation of the *Cholq'ij*, the sacred calendar. However, ancestral practices also happen outside of the ceremonial containers held by Ajq'ija'; they include offerings given to the land before harvest, and asking permission of the forest before collecting wood. I contend that such practices bring a Maya world into being and help sustain it, an argument in harmony with Maya philosophy and with the perspectives of research participants, as I elaborate in chapter five.

In its components, my framework resonates with those from several Indigenous scholars developing decolonizing research paradigms from their own onto-epistemic

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of manifest, although they are subtle rather than gross materialities. When I speak of things *mattering* throughout this text (e.g. pages 78-79), I have in mind this broader notion of mattering that includes the possibility of influence between gross and subtle realms, and across subjective and objective dimensions. I consider all of these realms to be ontological, in the sense that we can choose to interrogate their reality-status and include them (or not) in the categories we consider as real.

[19] Plural of *Ajq'ij*.

traditions (e.g. Ahenakew 2016; Martin 2003; Wilson 2001; Hart 2010). For example, in her indigenist research framework, Aboriginal scholar Karen Booran Mirraboopa Martin identifies knowledges, worlds, and practices as processes which are expressed as "ways of knowing, being, and doing" (2003, 208). She describes these processes as: "first, establishing through law what is known about the Entities; second, establishing relations amongst Entities; and third, enacting ways for maintaining these relations," (Ibid., 208) where Entities are spirits of the landscape which are woven together with humans and the land in relationships of reciprocity.[20] In developing an Indigenous research paradigm for his work with Cree people, Michael Anthony Hart (2010) identifies ontology, epistemology, methodology, and axiology as key dimensions of a framework, building upon the work of Wilson (2001) and other Indigenous scholars. These frameworks are paradigmatic in that they seek to go "beyond merely assuming an Indigenous perspective on…non-Indigenous paradigms," towards developing research from the grounds of radical Indigenous difference (Wilson 2001, 176).

My framework also draws upon Esbjörn-Hargens' Integral Enactment Theory (IET), which posits pluralism across epistemological, methodological, and ontological domains. These domains can also be conceived (respectively) as subject, method, and object; or as the Who, the How, and the What (2010) of Integral enactment, in which the theory itself is also enactive, e.g. can activate and enable certain potentials in the world (Ibid., 156). In IET, ontology, epistemology, and methodology are entangled (Esbjörn-Hargens 2010). Thus, ways of knowing and ways of being are not really separate; they co-constitute one another. Wilber, on whose theoretical work Esbjörn-Hargens builds, puts it this way:

> Knowing and being, epistemology and methodology and ontology, are all mutually interwoven and inseparable processes, different dimensions of one underlying Wholeness, and they register "truth" through a process of

[20] "We believe that country is not only the Land and People, but is also the Entities of Waterways, Animals, Plants, Climate, Skies and Spirits. Within this, one Entity should not be raised above another, as these live in close relationship with one another. So People are no more or less important than the other Entities" (Martin 2003, 207). Martin is an Australian Aboriginal scholar; the ontology she describes resonates with that of the Maya in its relationality and in its conception of everything as alive.

> felt mutual resonance, not isolated mental "representation." They are not previously separate, isolated dimensions that are brought together to ground or represent one another, or are otherwise brought into relationship with one other, they are more like the north and south poles of a single magnet, setting up a vibratory field pattern of which each is an inseparable moment (2017, 360–61).

Karen Barad's agential realism echoes this co-constitutive configuration of onto-(methodo)-epistemologies:

> Practices of knowing and being are not isolable; they are mutually implicated. We know because we are of the world. We are part of the world in its differential becoming. The separation of epistemology from ontology is a reverberation of a metaphysics that assumes an inherent difference between human and nonhuman, subject and object, mind and body, matter and discourse. Onto-epistem-ology—the study of practices of knowing in being—is probably a better way to think about the kind of understandings that we need to come to terms with how specific intra-actions matter" (2007, 185).

In Barad's terms, the elements of my framework are related in terms not of their interactions, but more precisely of their "intra-actions," a term she coins to denote "the mutual constitution of entangled agencies" (Ibid., 33)—a relationship between dualities that carries throughout this text and harmonizes with Maya notions of complementarity (see chapter six). In congruence with these theorists, I imagine knowledges, worlds, and practices as dimensions of a Whole, a model that seeks to soften the stark subject/object, nature/culture division wrought by naturalism, and to make room for dynamic configurations arising from "other" ways of knowing and being in the world. At the same time, it avoids collapsing ontologies and epistemologies, resulting in a form of idealism in which "ideas generate realities" (Graeber 2015, 21), a problem I find in some of the new ontological approaches in anthropology if taken to their logical conclusion. Rather more subtly, onto-epistemologies reflect the entanglement and co-constituency of these dimensions, with methodologies bringing the Whole into being via enactment.

The constellation of ontology-epistemology-methodology can also be used to understand the enactment of climate change as a *multiple object*, performed via

different perspectives and practices (Esbjörn-Hargens 2010). For a climatologist, it may be 'cycles of drought' via the practice of comparing tree rings; whereas for a Kenyan farmer it may be 'a difficult year for my family' via the practice of assessing crop yields (Ibid., 147). Yet, both ontological multiplicity and singularity may be enacted through their corresponding epistemologies or worldviews. Thus, while understanding climate change as a multiple object can help to more adequately grapple with its complexities, there may still be value in enactments of a *singular* climate change—Esbjörn-Hargens gives the example of Bill Mckibben's 350.org campaign, which aims to mobilize global activism through the single concept of a threshold level (350 parts per million) of carbon in the air (Ibid., 163). I will return to this point of creative tension between plural and generalizing climate framings in chapter six, where I explore the enactment of climate change adaptation from a position of intra-secting, e.g. mutually entangled and constitutive, worlds. To borrow Mol's aphorism, climate change (like atherosclerosis) is a case of "more than one—but less than many" (2002, 55).

So far, these components from literature all proved vital to helping me make sense of my findings in a way that resonated with how research participants themselves conceived of their changing worlds. But there is one more dimension to the Whole which I found necessary to name in order to think the constitution of worlds more precisely, as described in workshops and interviews. To hold to our naming pattern, I call it *axiologies*. The term is less pervasive in the social science literatures that I reviewed than the other components mentioned here, although a few Indigenous scholars have named axiology as a central aspect of Indigenous difference (e.g. Hart 2010, Wilson 2008, as cited in Ahenakew, 2016, 333). Mostly though, this dimension arose not from literature, but from conversations with research participants.[21] As I will show in chapter five, Kaqchikel participants emphasized the importance of ancestral practices and knowledges in the maintenance of their cultural world, but they often voiced another critical component, which they framed as Maya values. To an extent, these values were articulated as essential principles that define

[21] That said, in a related vein, Barad's agential realism proposes an "*ethico-onto-epistem-ology*—an appreciation of the intertwining of ethics, knowing, and being...because the becoming of the world is a deeply ethical matter" (2007, 185). Clearly, there is a close relationship between values and ethics, although they are not identical.

Maya culture (see Salazar Tetzagüic 2001). Upon closer examination, principles such as respect for life seemed to also refer to something more dynamic and agentic, to a quality of being. That is to say, axiologies refers to attitudes or interior aspects of experience which have direct enactive implications. Defined as such, axiologies could be encompassed by epistemologies in my framework, as part of the subjective or interior dimension (Esbjörn-Hargens' "Who") of enactment. However, in seeking to harmonize this framework with the Maya Cosmovision, I have chosen to name axiologies separately. The distinction is appropriate inasmuch as linking epistemologies (associated with mental knowledge) to subjectivities broadly evokes a Cartesian conception in which the seat of selfhood is the rational mind. Yet for the Maya, energetic dimensions of selfhood are emphasized, and thereby, the values, intentions, attitudes, and energetic quality of one's being, *matter* ontologically. Thus, axiologies relates to epistemologies as a component of human interior experience, and it shares the enactive quality attributed to practices.

The Maya Cosmovision

Although the closest semantic equivalent to cosmo-vision is world-view (Cano Contreras, Page Pliego, and Estrada Lugo 2018), the Maya Cosmovision is much more than a perspective on the world. It is most like a description of this entire (axio-methodo-)onto-epistemological entanglement. The Maya Cosmovision is not only a perspective on the cosmos, it is a world that is lived into being; e.g. it is not simply a knowledge system, but a reality. As Nobel Prize-winning Maya peace activist Rigoberta Menchú explains, "The spirituality of our ancestors cannot completely be written, theorized, or conceptualized; fundamentally it is a form of sensing, a form of being, it is a mode of life that is constructed with the path of days, of time, and throughout the entire existence of a living being, including the human being" (Cochoy Alva 2006, 13).[22] The Maya Cosmovision weaves worldview, world, knowledge-praxis and values in a web of mutual (intra-)becoming. Thus, the framework delineated here finds harmony with Maya thought and allows me to work with the Maya Cosmovision in a way that aligns more closely with how it is held by Maya lineage holders. Its coherence both with the perspectives voiced by research participants and with expressions of the Maya Cosmovision from texts by other

[22] Excerpted from the prologue to the document; translated from Spanish by myself.

Maya find their convergence in what I call *Maya enactivism*, which I will delineate in chapter five.

Now, I will sketch contours of the Maya Cosmovision—an introduction not meant to be comprehensive, but rather to highlight concepts that will be key to understanding the themes explored further in my empirical chapters, especially those elements that are most at odds with a naturalist ontology. The Maya Cosmovision reflects a complexly ordered and coherent universe in which time and space are alive and patterned, represented by a grand system of overlapping calendars and other methods of coordination which elaborate relationships across both physical and energetic realms. The sacred calendar, which is called the *Cholq'ij* by the Kaqchikel,[23] consists of a matrix created by twenty *nahuales* or foundational energies across thirteen numbers (one through thirteen). In general, one might think of the twenty nahuales as indicating the *qualities* of the energy of each day while the thirteen numbers indicate the *quantity* or intensity of the energy, although technically the numbers also have qualities; odd numbers, for example, are said to represent less stable energies than even numbers.[24] This matrix is coordinated as a sacred calendar with thirteen months of twenty nahual days. Each nahual is associated with an animal or other natural element/s and qualities; the *nahuales* also form a typology system indicating the vocational and temperamental proclivities for a person born on that day. The particular energetic stamp of the day, based on its nahual-number combination, also indicates the particular ceremonial practices that are appropriate for that day. One day, for example, may be good for asking for a healthy harvest, whereas another is good for seeking healing, whereas another day might be apt for giving thanks for material abundance (Stanzione 2006). Through these sacred ceremonies and other ritualistic practices, Maya people bind themselves in sacred reciprocity with all of the elements of the cosmos, and feed the life energies manifest in the natural world and

[23] It is also *Cholq'ij* in K'iche', literally this means to count or to order (*chol*) days (*q'ij*) (Sac Coyoy 2007, 2). It is *tzolk'in* for the Yucatec Maya, and *tachb'al q'ii* for the Ixil (Cano Contreras, Page Pliego, and Estrada Lugo 2018, 7).

[24] Tata Pedro, interview November 15, 2019.

time itself so that all may be sustained.[25] In addition to the Cholq'ij sacred calendar; the Maya also have developed a solar calendar, the *haab*, similar to the Gregorian calendar, of 360 days (eighteen months of twenty days) plus five sacred interstitial days that form a nineteenth month called the *wayeb*. The two calendars are intermeshed and re-synchronize every fifty-two (solar) years (Stanzione 2006, 2).

Everything that is alive has its vital life essence, and everything is alive—humans, animals, plants, water, stones, the air, even Earth herself. Thus, in the Maya Cosmovision, everything has its *nahual*, an energetic companion that defines its particular identity, qualities, and destiny. As a unit of time, a day has its nahual, but so do plants and animals (according to species) and humans (according to the day of their birth). The nahual directs one's life and determines the role or mission which one is meant to embody.[26] In addition to nahual, the terms *dueño*, *guardian*, and *k'ux* are used somewhat interchangeably in this text—and by research participants—to refer to the vital life force of each being. Dueño literally means owner or master; as this implies, dueños require respect and deference. Guardian (same in English and Spanish) alludes to the protective nature of the entity, like a guardian angel.[27] The term *k'ux* in Kaqchikel pervades the language describing self and its various states (Hill and Fischer 1999). Most often associated with *heart*, a more precise translation for k'ux would be *essence* or *center* (Pedro 11/8). In this sense, k'ux is associated with the body's navel and umbilical cord (Ibid.; see also Hill and Fischer 1999). It also ties to the role of the human to maintain cosmic equilibrium; as 'center,' k'ux indicates a state of balance and stability. A plethora of phrases in Kaqchikel describe states through a description of one's k'ux: for example, to have a sweet or honeyed k'ux is to be happy, whereas to be sad is to have the k'ux be biting (Hill and Fischer

[25] See: the *Popol Vuh* K'iche' origin story, in which humans are created to invoke, sustain, and nourish their creators (Goetz, Morley, and Recino 1954, 6); Nancy Farriss' account of Maya maintenance of the cosmic order during the colonial era (1984, chapter 10); Cochoy Alva 2006, 45; Lucero 2018; and Stanzione 2006, 2.

[26] One's destiny is also influenced by other *nahuales* that form one's *cruz Maya* (Maya cross), in degrees graded by their energy numbers (1-13), and by the nahual that is the *cargador*, or carrier, of the year of one's birth.

[27] The comparison is Tata Pedro's via personal communication October 29, 2020, who himself framed it in so many words as a translational equivocation (not a direct equivalence) with the Catholic concept.

1999, 322). Profound, longer-term states of imbalance can also be described as movements of k'ux (Ibid., 324). One's k'ux can also depart. It can happen because of a *susto*, a shock or fright, caused by a sudden accident or violent attack. If not properly treated by a competent healer who calls the k'ux back, it can take the form of a chronic illness. When one's k'ux departs because one feels devalued or unappreciated; the resulting state is *xuxutuj ri k'ux*, a state that can cause depression and problems in life, to which I will return in chapter five. These various ways of describing life essences and their movements reflect an animated world in which all elements hang together in a dynamic system that seeks balance. These terms also reveal the dual nature and reciprocal relationship of the nahual with the physical being: both need the other's attention and care to maintain harmony.

So, I have laid out these four basic elements and explored the relationship between them in the cohering of a world: epistemology, ontology, methodology, and axiology. Whereas I embed this text in a conversation on ontological pluralism, as delineated here, all of these dimensions are multiple and correlate with one another (Esbjörn-Hargens 2010), and describe processes that bring worlds continuously into being, in each moment. I will use them in shaping the stories that emerged from my fieldwork and in drawing insights from them. But just these components alone, and the multiple worlds they help us begin to fathom, are not enough quite yet—in fact, they address some deep philosophical questions but leave others unanswered as to the nature of ontological intra-action vis á vis the climate crisis.

3.2 How Worlds Collide: Intra-actions at Frothy Edges

This section focuses on collisions and convergences among multiple worlds that are "more than one—but less than many" (Mol 2002, 55). While an ontologically plural framing can enable dwelling in radical alterity to help reveal the many ways there are to be human, I suggest that there is *also* value in dwelling in the spaces of overlap. It is obvious that Maya participants (for example) do not inhabit a completely separate and disconnected world from my own. Rather (and perhaps increasingly amidst today's accelerations), multiple patternings intersect in a field of relationships that are charged with power. Patterns of modernity carry an especially heavy hegemonic

weight, at least in part due to their projection of singularity onto the world (Law 2011). In this section, I explore partial connections from several angles. I sketch a picture of historical intersections and interdependencies in Latin America, drawing on what has emerged as the modernity/coloniality research program, which paints subaltern worlds at the edges of modernity. Drawing on Dussel's concept of transmodernity, I depict edges not (only) as peripheral places, but as frothy zones of intra-action and generativity. Through Marisol de la Cadena's partial connections, I relate these metaphors to the discourse on multiple ontologies and to conceiving of what indigeneity in Latin America means today. Finally, I employ Viveiros de Castros concept of "equivocation" to acknowledge what is lost in processes of translation between worlds. My aim is three-fold. First, this framework supports an exploration of how aspects of Indigenous worlds are rendered invisible in the struggle for ontological, epistemological, and political recognition (see chapter four). Second, it helps theorize how (Indigenous and non-Indigenous) actors can draw upon and engage multiple onto-epistemological patternings for developing more generative approaches to enacting sustainable lifeways in a warming world (see chapter six). Finally, frothy edges are used recursively throughout my empirical chapters, as a place of partial onto-epistemic connections from which to engage in analysis.

The Latin American modernity/coloniality research program builds on thought traditions with origins in Latin America, like dependency theory, liberation theology, and participatory action research, to take a perspective on modern world history explicitly from the vantage point of Latin America (Dussel 2012; Escobar 2007; Mignolo 2012; Quijano 2007). These theorists seek to highlight the key role which Latin America (as the first but not the only colonial periphery of European imperialism) played in the emergence of modernity—a role often eluded in Eurocentric narratives. Yet, Dussel (2012) marks the beginning of modernity with the Spanish invasion of the Americas and sees the subsequently emerging colonial capitalist world system as vital to the development of the modern world. Modernity needed coloniality to come into being (Ibid., Escobar 2007). In this re-telling, Indigenous and Latin American cultures are situated on the periphery of a modern imperialist (European, and later, North American) core. Indigeneity and modernity are thereby co-constitutive; Indigenous worlds have subsisted in the shadows, being

shaped by modernity while exerting their own agentic counter-influence (e.g. MacNeill 2014). From the vantage point of the colonial edges, it is revealed that the Indigenous, colonized, subaltern "other" shaped modernity just as much as Europeans did. Theorists in this vein emphasize and renovate "subaltern" (Latin American and Indigenous) epistemologies for their unique capacities to transcend modernity by elaborating positions from its "exteriority" (Mignolo 2012) and to deconstruct the "coloniality of power" by which subaltern knowledges and identities are subordinated (Quijano 2007). Thus, the universalizing singularity of the modern world is characterized by a history of violence and repression of subaltern "others," but *not* by total erasure of the their rich onto-epistemic legacies.

To say that Latin American indigeneity has shaped Western modernity is not to say that indigeneity is "modern" per se. The cultures that were colonized by Europe are pre-modern in that they are older than modernity. While they are not equivalent to modernity, they have evolved alongside and in relationship with modern social and mental structures, including expressions of critical and rational consciousness. For Dussel, they cannot be said to be post-modern, since he characterizes postmodernity as a critique of modernity that has emerged from within the Western. Yet, they are capable of posing decolonial critiques of modernity and of transcending it through the affirmation of their own positive identities. In light of this ambiguous and shifting relationship to modernity, Dussel proposes the term *transmodern* to describe the unique position of postcolonial communities and their evolving cultural legacies:

> The dialogue, then, between the critical cultural innovators is neither modern nor post-modern, but rather in a strict sense "trans-modern," because, as we have shown, the creative force does not come from the interior of Modernity, but rather from its exteriority, or better yet from its exterior "borderlands." This exteriority is not pure negativity. It is the positivity rooted in a tradition distinct from the Modern" (2012, 50).

Treating indigeneity as a transmodern phenomenon allows it to be seen as not-modern, but it is defined not by the negation of modernity but by its own positive distinct traditions. Yet, it is situated in relationship to modernity, within a global narrative of human development. Radical alterity does not preclude partial connections.

Spatial metaphors in the modernity/coloniality conversation build on dependency theory's depiction of the European "centre" or "core" versus the colonized "peripheries" (Bull 2015, 5; Dussel 2012, 32). Descriptions of subaltern worlds' positions of relationship to modernity are replete with words like "boundaries," "peripheral," and "fringes." Dussel and Mignolo (following Gloria Anzaldúa) use "frontier" and "borders" to speak of creative "bicultural" zones (Dussel 2012, 47; Mignolo 2012). I embrace this image but choose "edges" in part because of their socionatural relevance—edges might represent multispecies minglings (see A. Tsing 2012) and assemblages which include earth beings, traversing nature-culture and physical-spiritual ruptures. Humans imagine and enact borders on the earth, but edges happen anywhere life-patternings intersect. For me, such words and the discourse around them bring forth a regenerative, creative quality—a distinct twist on the diminishing language of peripherality. I recall "the edge effect" in ecology: life and vitality flourish where ecosystems make contact; species from both environments interact with one another and with a third set of species unique to the transition zone (Hemenway 2009, 45–47). The ecology metaphor illustrates Dussel's depiction of intercultural dialogue, but it is imperfect inasmuch as dialogue between subaltern groups and an imperial modernity has not been one of power symmetry but largely one of domination and exploitation. Dussel nevertheless envisions that actors in Latin America—including Indigenous and other oppressed groups—may engage with and take the best of modernity, even while critically decolonizing and renovating their own traditions. Intercultural dialogue, he stresses, must also take place transversally between subaltern groups from the global South (2012).

The space of overlapping onto-epistemic ecosystems and of intercultural dialogue, is one of partial connections. Following Marilyn Strathern, de la Cadena uses the metaphor to paint the relationship between worlds in mind-bending provocations:

> Through the lens of partial connections, indigeneity in the Andes—and I would venture in Latin America—can be conceptualized as a complex formation, a historic-political articulation of more than one, but less than two, socionatural worlds. As a historical formation, Andean indigeneity did not disappear into Christianity first, or citizenship (through mestizaje) later; but…it was not impervious to them either, for doing so would have meant to be impervious to history. Neither Indigenous nor mestizo, it is

> an Indigenous-mestizo aggregate that we are talking about: less than two, not the sum of its parts (therefore not the "third" result of a mixture) and indeed not one—let alone a pure one. Without closure, you can also call it "mestizo-Indigenous" for the order has no teleology. Moreover, its naming may change, for its shape is fractal: as fragments with no clear edge, "Indigenous-mestizos" are always a part of the other, their separation is impossible. Thus seen, albeit hard to our logic, indigeneity has always been part of modernity and also different, therefore never modernist. Partially connected Indigenous-mestizos are, like fractals, self-similar even though, depending on how you look at them, they also appear to be different (de la Cadena 2010, 347–48).

Here I begin to encounter the limits of spatial images to understand the relationships between and among worlds. Dussel's transmodernity places indigeneity at the frothy edges of modernity, in ambiguous relationship to pre- and post-modernity. Erstwhile, de la Cadena's partially-connected worlds are somehow more than one and also less than many. The core-periphery metaphor of transmodernity emphasizes Indigenous thought as an alternative; yet within a broader arc that includes multiple intra-acting ontologies. And partial connections paint a space of imbrication, of overlap. Moreover, this is not a straightforward Venn diagram with an overlapping area but a more dynamic configuration in which each ontological configuration may be conceived as containing the other—a fluid or fractal arrangement of mutually constitutive unfoldings which I will refer to as intra-penetration. In a way, modernity might "contain" indigeneity—as no place is untouched by the globalized capitalist materialist modern world. Conceptually, modernity contains indigeneity when scholars use Western mental frameworks to explain or understand the Indigenous "other," or to discriminate Indigenous knowledge which can be corroborated by Western methodologies from "just" Indigenous beliefs. While some things are revealed in such an instance, others are rendered invisible, just as earth beings are rendered invisible in modern political discourse (de la Cadena 2010). Conversely, in a less familiar move, a Maya world could be said to "contain" modernity. I might interpret global change processes characteristic of modernity, through the logic of the Maya Cosmovision. In this case, while some things are doubtless rendered invisible, I am really interested in what is revealed, and how these revelations can agitate and supplement modern ways of knowing.

I use these images of frothy edges and partial connections in two ways. First, I use them to understand Sotz'il's process of weaving knowledges and moving between multiple spaces in their way of enacting climate change adaptation. Partial connections can be characterized by ontological conflicts in which the intra-actions between worlds are understood in terms of power, and in which Maya onto-epistemology is rendered excessive (see chapter four). They can also be characterized as frothy edges in which agentic subaltern actors (like Sotz'il members) inhabit and move between multiple ways of being and seeing (see chapter six). Further, throughout my analytical chapters I attempt to look "from" the partial connections—to employ concepts from the Maya Cosmovision to inspire new ways of looking. Yet inasmuch as the analyses presented in the following chapters draw on Maya thought for inspiration, they can also be said to be "equivocations." An equivocation is not an error, and not simply a different perspective on the same thing, but rather, the rendering of ontological multiplicity in a way in which it can be meaningfully compared (Viveiros de Castro 2004a). Equivocations point to what is lost in partial connections—the incommensurability that makes "less than many" still somehow "more than one." Yet, there is also something to gain, I sense, in the constructive process of putting Maya thought and academic discourses in relationship, in drawing out and amplifying the imbrications, as I have attempted to do throughout this text. There is enrichment in the overlap.

To summarize, this section of the framework seeks to situate Indigenous onto-epistemologies in a broader arc, which we can paint imperfectly as unfolding through and beyond modernity—*and* to contend that they propose alternatives that make their wisdom and experiences relevant to what is perhaps the most important question of our era: how might we transcend modernity to enact more just and regenerative ways of life? I move between the bird's eye view soaring over the landscape and the rich, frothy edges of the marshlands where the imbrication provides a unique vantage point to enact possibilities that might transcend exhausted patternings.

4. The Guardian at the Threshold

> "The idea of ontological politics needs the transformative magic of talks, rituals, modes of palaver, ways of thinking-feeling with, which reworld our ruins and open them to partial connections with other worlds. This is also the only legacy we can leave to the next generation, what can perhaps help them make a difference between living in the ruins and just surviving." —"The Challenge of Ontological Politics" (Stengers 2018, 109)

In this first empirical chapter, I practice seeing from frothy edges of ontological collision in order to look critically at the assumptions from which dominant discourses arise. Here I ask: *What might dwelling in a Maya story of a modern development project reveal about conflict between asymmetrical worlds and the trembling foundations of modernity?* This chapter uses an empirical vignette to illustrate my theoretical framework and to contribute to the overarching questions of this research project regarding climate change and the Maya Cosmovision in several ways. Through the Maya version of the story of Chimaltenango's *libramiento*, a beltway intended to facilitate the flow of traffic through the city, this chapter introduces how Maya people enact a living world—how through practices, knowledge, and values, the Maya Cosmovision and its elements are sustained or diminished—processes which will be further unpacked in the following chapter. It shows how Maya worldmaking is rendered invisible in state-lead modern development processes, in a power-charged field of relations in which a singular dominant ontology weighs heavily and defines the bounds of "reasonable politics," and it imagines "another cosmopolitics" in which explanations from subaltern onto-epistemologies can be included to yield richer explanations. Finally, it dwells within the Maya version of the libramiento story to turn the gaze back upon the modern metacrisis, of which climate change is both a symptom and increasingly, a context. Seeing from this version of the story reveals trembling fault lines, a nature-culture rift that animates both the underlying drivers of climate change, and the insufficiency of dominant techno-managerial approaches to adaptation. As such, this chapter demonstrates my ontological-enactive analytical approach, in which I draw upon the Maya Cosmovision for inspiration in the pursuit of novel ways of understanding. It also illustrates the context for the Maya struggle for onto-epistemic recognition and

sketches the conceptual landscape for a deeper treatment of climate change and adaptation in subsequent chapters.

4.1 The Road to Deliverance and the Guardian at the Threshold

Deliverance in a Liminal Land

Chimaltenango, the central location of my research, is an industrial city scarcely forty kilometers west of the capital city. The municipality is etched into Guatemalan consciousness as a transit space. Virtually all goods from the capital city's factories or the country's eastern ports must pass through Chimaltenango's single highway to arrive anywhere in the western part of the country. Thousands of Guatemalans traverse its roadway daily, enduring the dangers and indignities of public transit to garner wages in the capital city. Human bodies flow in the other direction too, passing through to get from Guatemala City to rural places in the Western highlands, or to Quetzaltenango, Guatemala's second-largest metropolitan area. Absent traffic, one could hypothetically glide through in twenty minutes. More often than not, one will sit for an hour or two, packed in between semis trucking wares from the capital, aggressive buses, and cars, air filled with diesel fumes and noise pollution.

As a place of passage at the intersection of urban and rural life, *Chimal*, as it is dubbed, is a frothy edge zone, ontologically. While the region is historically Kaqchikel, urbanization processes and population changes go hand-in-hand with increasing *ladinoization*, a model of cultural assimilation (see Rodriguez Guaján 1996) that can as much be understood through the lens of asymmetrical ontological edges, for ladinoization or ontological *mestizaje* more visibly replicates a Euro-Western onto-epistemology than Maya indigeneity. The complex intersection of translocal forces has re-wrought the community. As in most highland Maya communities, families once worked their small plots of land for subsistence. Over the years, though, the town has exploded in population and native *Chimaltecos* (people from Chimal) have sold their plots to newcomers, many of whom only sleep in Chimal and commute to the capital for work. Chimaltecos have experienced these changes as soaring rates of crime, corruption, and crowding. Don Jorge, a Sotz'il team member who has lived in Chimal since his birth in 1961, describes how he and

his friends used to roam the sparsely-populated town at any hour without fear. Now, by eight at night one cannot walk on the streets with confidence, commented don Jorge, adding with a wry laugh that there are so many vehicles on the roads that if one is not careful, "*se lo pasan jalando*," they drag you along as they go by (10/17).

Midst this frothy zone, a long-awaited state-lead construction project promised some relief for *Chimaltecos*. On October 16, 2018, in proud exultation of a modernist development vision, then-president Jimmy Morales inaugurated the first phase of a new four-lane highway connecting Guatemala City to the western side of the country. Morales congratulated the engineers and CONASA, the construction company, for completing the first half of the roadway, praising their professionalism and "highest standards" of quality. "It's not easy to make highways in a territory like Guatemala," he added, gesticulating capriciously, "mountain here, mountain there, volcano over there, river here, cliff over there" (Telediario 2018, my translation). Morales' speech extoled the ambition of developmental schemes to conquer an inanimate and troublesome landscape, with a touch of dark comedy in its foreshadowing of soon-to-be apparent deficiencies in the roadway's allegedly impeccable architecture.

The full opening of the new roadway some months later marked a momentous shift in the life of *Chimaltecos* and the thousands of Guatemalans who traverse the city daily to earn their sustenance. *Libramiento* means *freeway* or *deliverance*. The latter, more literal, translation strikes me as appropriate in connotating the emancipatory promise of freedom the roadway represented for local residents and commuters alike. When the libramiento opened, Chimaltenango was transformed. Normally, semi-trucks and other vehicles jam the streets of the city at all hours of the day and night, seeking alternatives to the slow-moving traffic of the main highway. Leonel, another Sotz'il colleague from Chimal, told me that all of a sudden, the roads of the town had been clear. I imagine that many Chimaltecos, inhabitants of that permeable edge-zone so accustomed to absorbing flows of traffic, noise, and human bodies, might have exhaled for a moment, feeling in some sense that their community was restored to them.

Yet, three weeks prior to my arrival for fieldwork in October 2019, a landslide had debilitated the barely-opened new roadway. The normal state of affairs in

Chimaltenango resumed, all roadways promptly re-saturating with passers-through. Subsequent studies showed evidence of gross negligence in its construction and design (Cosenza 2019), and investigations by the Guatemalan Public Ministry and the Anti-Corruption Prosecutor's Office have revealed that the project was used to syphon funds to the construction company at the helm of the project (Coronado 2020). As of the time of writing this in early 2021, repeated landslides have kept the roadway in a constant state of disrepair. The *libramiento* thus appears to represent a familiar story in Guatemala, one that lies in stark contrast to its promise of deliverance: a story of powerful actors manipulating political and economic machinery towards personal enrichment, at the expense of the majority of the Guatemalan public.

Figure: A glance at the near-vertical cuts through the earth with no structural reinforcement is enough to visualize how unsound the roadway is (the outer cement layer does little more than provide minor erosion control). It also illustrates the dramatic extent to which the earth has been carved away through what for many Maya is a living landscape. Source: Prensa Libre, Victor Chamalé.

The *Libramiento* and Maya Worldmaking

It is true that the story of the *libramiento* is one of poor engineering, of political corruption, of greed, and of devaluation of the lives of thousands of Guatemalans who traverse the roadway regularly. Yet there exists a parallel interpretation, one not found in the various news stories from Guatemalan periodicals which are published online. Rather, it was shared by Kaqchikel research participants. In this story, a construction company financed by the state quite literally attempts to pave over a

Maya world. Much like in the Andes, where earth beings are relevant political actors in Indigenous ontologies and are rendered excessive in the dominant narrative (de la Cadena 2010), the living, energetic dimension of a hill is an actor in this version of the libramiento story.

One day, Leonel and I were discussing Sotz'il's work researching areas of Indigenous knowledge relevant to climate change, like when observation or monitoring of the natural world—cloud formations, for example—are used to predict earthquakes or pending weather patterns like rains or drought (see Batzín 2019). But, Leonel told me, often government and international organizations "*no lo toman en cuenta*;" they don't take Indigenous knowledge into account. When I asked him how they confront not having their knowledge taken into account, he shared the following:

> It's really difficult and complicated for this to change…because even like with what's happening now with the *libramiento*, [with the] landslides, the instruction is always to pay something to the hill. But pay the hill doesn't mean give it money or something…[it means] to ask permission from nature, because you're going to cut the hill in two, you're going to cut trees, animals, so…just like people negotiate with each other, there is also a negotiation with nature, with the energy that's there. But that's never taken into account, right? If this were taken into account, maybe what happened there wouldn't have happened…. Some workers died because no one has made an offering or asked permission of the hill to do the work, and now that it's done, there are landslides and all that, but it's for the same reason, right?...(Now) there are a bunch of landslides and everything, but apart from it being a job that wasn't done well, they never dialogued with it. Because here it's said that every hill has its *dueño* (10/14, 4A).

Recall that the hill's *dueño* is its energetic life force, which must be maintained in a dense web of relations which include human intentions and practices. Non-modern events, like a hill seeking restitution via landslides and taking human lives, align with epistemologies that outline the logic of the Maya world. Maya worldmaking entails practices of invocation, of offering gratitude to and asking permission and protection from ancestral energies that animate the landscape. These practices reflect a value

system of reverence for life, and are enacted to sustain vital essences as they enliven the physical manifest world. Through knowledge that recounts how the essences of a living landscape are fed and maintained, an onto-epistemology, the Maya Cosmovision, is enacted and sustained.

By the logic of the Cosmovision, the Guardian seeks its *reclamo,* its reclamation or grievance, because *no one has asked permission to destroy the hill*, and listened for a response. From the perspective of Maya worldmaking, the error is not in the destruction of the hill as such, but in the neglect to treat the hill as a sentient agent in the story, with a say in how things unfold. From the perspective of Maya worldmaking, a key step in the process—something that might be equivocated as consultation with a key stakeholder for free and informed consent—was neglected from the highway construction. It was an omission of tragic consequence.

4.2 (Yet Another) Cosmopolitics

The *libramiento* story might be considered one of ontological divergence, as a case in which the modern political and development paradigm refuses to (or cannot) accommodate that which exceeds it. Recall that Leonel brought up the libramiento as an example of how Indigenous knowledge is not recognized; it is seen as unreasonable because it lies outside of the explanatory frameworks of a modern ontology. Leonel's narrative emphasizes the importance of being in dialogue with nature. Yet "nature" is multiple (Descola 2008). To the construction company and the Morales administration, it is a disruption, brute matter to be dominated by "good" engineering. For Leonel and for many other Maya it is what it is to the state but also exceeds it: it is sentient, willful, and in relationship with humans; thus the injunction to "ask permission," and to "negotiate with…the energy that's there." Here, we have a case of more than one and less than many, in what I call a hill.

A parallel analysis might be made to Marisol de la Cadena's ethnography in which resistance to a mining project in Cuzco is fueled not only by environmental and social concerns, but by considerations for Ausangate, an earth-being and a mountain presiding over the area where the project seeks concessions. De la Cadena discovers that the "single view" she shares with her friend Nazario, an activist and *pampamisayoq* ("ritual specialist" who interacts with the living landscape), is "also

more than one" (2010, 338). Nazario shares her concern that a mining project would affect local livelihoods, but also contends that it would anger Ausangate, who may seek retribution by taking human lives. Peru's former president Alan Garcia found himself fending off territorial disputes that were making earth-beings nationally prominent by dismissing Indigenous protestors' "irrationality" and "retro-grade primitivism" (quoted in in de la Cadena 2015b, 276). Erstwhile, sympathetic factions on the left called for more "tolerance" of "Indigenous religions." However, neither the neo-liberal conservatives nor the multicultural allies were able to think beyond the ontological limits of modernity to consider earth-beings as real (Ibid., 277-278). As in the case of Ausangate, environmental conflicts between Indigenous peoples and the state are sometimes most accurately understood as *ontological* conflicts in which the nature of what is at stake (like a hill) is multiple—different for Indigenous people than for the state or corporations at the helm of construction or extraction projects. Like a political ecology approach, a political *ontology* approach reveals that power is at the heart of the conflict, but reckons that the hegemony of a materialist ontology and where it delineates the domain of the reasonable are as much at play as all the usual suspects (Blaser 2013a).

What is called for is a pluriversal politics, a cosmopolitics (the term is from Stengers 2005) in which different worlds are connected, "all with the possibility of becoming legitimate adversaries" (de la Cadena 2010, 361). De la Cadena's vision is not to rush towards the creation of commonalities, but rather to make visible the ontological conflicts that are already present but concealed by the hegemony of a politics based in the "common world" as it has been carved in the traditions of the West. Mario Blaser offers another cosmopolitical elaboration in his ethnography about conflicting visions of caring for what Euro-Canadians call caribou and what the Innu people call *atîku* (an equivocation), in which he grapples with the conceptual problem posed by a conflict in which the very nature of what is at stake is multiple. Blaser suggests that "another cosmopolitics" might foreground ontological difference, just as Viveiros de Castro's "translation as a process of controlled equivocation" (2004a) entails that what must be foregrounded in the process of translation is precisely the difference. No common referent need be established, as the object in question is acknowledged to be ontologically multiple. Thus, another cosmopolitics might start from ontological difference. It might be exemplified by an intervention by Canadian

wildlife managers to codify and legitimize Innu hunting protocols, so that practices of caring for caribou and for *atîku* might reinforce one another without making either subordinate to the other. In this case, what is established is not common ground, but "homonymic" actions wherein both sets of practices are not made to be the same but rather, coaxed into mutual symbiosis (Blaser 2016, 565).

In Peru, Bolivia, and Ecuador, Indigenous ontologies have disrupted politics-as-usual, so that Earth-beings are influential enough that heads of states are compelled to dismiss them (Blaser 2013a; 2013b; de la Cadena 2010); yet in Chimaltenango, the Maya equivocations that correspond to earth-beings remain largely invisible, known to Maya people but not factors on the national stage. I might imagine a cosmopolitics in which Maya onto-epistemology is more adequately accounted for: in which, for example, *Ajq'ija'* are commissioned to negotiate with ancestral energies on behalf of the state. This cosmopolitics, constructed on deliberate national efforts towards healing and reconciliation, and a willingness to substantively acknowledge and address power asymmetries, might in my imagination lead towards both greater space for Maya participation and a more vibrant *mestizo* Guatemalan identity which is able to embrace the rich contributions of its Maya heritage more deeply—as ontology and not just folklore. Yet despite state overtures to a pluricultural society ("Acuerdo de Paz Firme y Duradera" 1996) and a spirited Maya movement, as long as the state fails so egregiously to even meet the ethical demands of *modern* liberal political ideals, it seems this cosmopolitical vision remains a non-starter. Investigations, legal proceedings, and public outrage surrounding the tragic debacle remain within the ontological limits of what is "reasonable," focusing on corruption, money laundering, and poor engineering (Nómada 2019; Pérez 2019).

Yet while I cannot dismantle the barriers to another Guatemalan cosmopolitics, I can seek to enact a form of onto-epistemic recognition and inclusion recursively, in my mode of analysis. In this case, I am elaborating yet another cosmopolitics, one not of only ontological divergence (e.g. de la Cadena 2010) nor precisely of homonymic symbiosis (e.g. Blaser 2016), but which I conceive of as layering, where the explanations from frothy edges yield a richer and more complex account of the story at hand. As Leonel alludes ("apart from it being a job that wasn't well done"), the story of the *libramiento* as one of the Guardian's retaliation for not being consulted,

need not preclude it from being a story of political graft or of poor engineering. It can be all of these stories at once. In this cosmopolitics, the hill where the libramiento is built is a multiple object (Esbjörn-Hargens 2010) across multiple worlds.

Because this cosmopolitics conceives of onto-epistemologies as fluid and enacted, the possibilities for framing the relationships among them are unconstrained. Even in their alterity, I suggest it might be of service to imagine Indigenous Cosmovisions to lie a bit closer at hand than often rendered by my anthropological interlocutors. De la Cadena reflects, "I would not be able to translate myself into Nazario's ontology, nor know with him that Ausangate's ire is dangerous," but that she would still "side with him…to defend in his way, in my way and in the way that may emerge as ours the place where Nazario lives (de la Cadena 2010, 362). Yet, her agnosticism may curtail a deeper effort to come into contact with "the way that may emerge as ours." In sketching the ontological rift as fundamentally untraversable, ontological queries remain (ironically) bracketed. But while ontologies are multiple, they are not arbitrary. The Guardian may be real or unreal, or perhaps he is real in a sense and not real in some other sense (Murray 2019). But these are ontological questions, and if so, there must be meaningful ways to engage in their discernment. Otherwise, ontology is just another word for epistemology;[28] perspectives are conflated with realities (see Graeber 2015). So, while the Guardian will never be to me what it is to Leonel, I do not believe it is simply the case that I *cannot* know him to be real.

The distinction I make here is important regarding an ontologically plural approach to climate change interventions and knowledges, because it seeks to substantively recognize the contributions of subaltern epistemologies embedded in their own ontologies, while also helping to bridge the rift created between global approaches dominated by the natural sciences and calls for plurality emerging across Indigenous activism and the critical social sciences (e.g. Rodriguez Guaján 1996; Goldman, Turner, and Daly 2018). It potentiates a space where addressing planetary goals depends as much on amplifying partial connections in the construction of some unifying concepts, as on expanding space for plurality. I will elaborate on this topic

[28] "Ontology is Just Another Word for Culture " was a motion tabled at the 2008 Meeting of the Group for Debates in Anthropological Theory (Carrithers et al. 2010), and the phrase has become a playful trope among interlocutors, begetting many variants (e.g. Graeber 2015; Todd 2016).

in chapter six. For now, suffice it to say that my interest in opening up the space of cosmopolitics is not only to allow for creative tensions, but also to engage in honest interrogation that may enable forms of more inclusive, complex, and ethical truth-telling. Admittedly I am biased, with an inkling that our world is more alive than we Moderns tend to conceive it. But at the very least, I would suggest that seeing the world as alive can help us to enact more generative and life-affirming realities. If onto-epistemologies are enacted, it follows that I can playfully seek out frothy edges as a way of seeing what is revealed, even if my way of dwelling within and looking from the Maya Cosmovision is equivocational vis á vis Maya collaborators. Thus, I seek to explore how the Maya Cosmovision intra-sects with and bring its patterning to bear on contemporary global change processes, even as it remains unrecognized and unacknowledged in the public eye.

4.3 Trembling Fault Lines

So, what can we see when we dwell and look from within *this* story of the *libramiento*, the version in which the Guardian of the hill has been offended and responds in kind? The Guardian is a figure on the ontological edge who infringes upon the bounds of the reasonable as defined by modernity. The fault line of modernity is a nature-culture divide that is increasingly untenable, maintained only under considerable strain as the world warms. Peering through the widening rupture is the *dueño*, with dominion over its place and the responsibility to protect life. Its claim is exemplified in the constant landslides that have debilitated the road, akin to the capriciousness of climate impacts in a warming, living world. The Guardian is an inconvenient figure, for he or she is not easily made sense of given the assumptions that "nature" is inert, and is better left unnoticed from the standpoint of the construction company and the Guatemalan state. Recall then-president Morales' praise for the engineers who, with impeccable standards, tamed the Guatemalan terrain, beset with "a mountain here, mountain there, volcano over there" (Telediario 2018). How inconvenient, this living, obtrusive landscape.

Climate change and compounding socio-ecological crises draw attention to the increasingly apparent limitations of a modern onto-epistemology, calling us towards the edges of modern ways of knowing and towards what seems unknowable and

unexplainable. As de la Cadena expounds, the existence of earth-beings challenge the normal ontological configurations on which "reasonable politics" were built, the separation between nature and humanity (2010, 342; see also Blaser 2013a; 2013b). "The environment" (in all its multiplicity) does not belong in the domain of reasonable politics. Now, the affront to this division intrudes radically from multiple fronts. For the Anthropocene poses a reversal of the Cartesian order of things, the assumption that humanity's built worlds rise above an untouched and intact nature (Lövbrand et al. 2015). And here, I arrive from an exploration of the *libramiento* and the Guardian at the threshold, to something which this research is centrally about. For as the tremors of the nature-culture rift are felt more and more viscerally, explanations and solutions arising solely from the domain of modernity are more plainly inadequate (Leduc 2014). Guatemala notwithstanding, perhaps this is why nonhuman actors have more forcefully entered the political stage across Latin America, along with alternatives to modern development informed by Indigenous visions of *el buen vivir*, of how to live in a way that promotes well-being for both human and non-human life (Gudynas 2011; Sankey and Munck 2016). In such cases, Blaser explains that when what detractors decry as 'a cataract of words' from an Indigenous language, "starts to appear on the public political stage, it might be an indication that the corset that dominant categories impose upon radical differences might be exploding at the seams" (Blaser 2013b, 558). The corset exploding at the seams, the tremors along the fault lines of modernity, and the inadequacies of dominant categories to reckon with their disruptions: the changing climate is a symptom of this deeper ontological instability.

Just as in the realm of politics, attempts to maintain these trembling divisions are enacted as the fault lines of modernity are replicated in dominant techno-managerial approaches to tame a changing climate (Nightingale et al. 2020). These approaches seek to manage climate change as if it were an issue which might be controlled and solved solely with technical interventions, drawing predominantly upon knowledge from the natural and environmental sciences, as if we humans and our social worlds were not fully embedded within and constitutive of a warming world. When appropriated to serve the limited visions of such approaches, Indigenous knowledges in adaptation work may be narrowly useful, but do not necessarily provide the more transformative openings that they can offer as part of non-modern onto-epistemo-

methodo-axiological constellations (Ibid). Since climate change is driven by human activities, technical approaches that ignore human behaviors, politics, and worldviews are deeply insufficient (O'Brien 2018). Given the very definition of the Anthropocene, the unexamined and deeply embedded assumption that we (humans) are separate from nature is increasingly untenable—if it ever was tenable (Goldman, Turner, and Daly 2018, 8). Thus, some authors translate to the field of adaptation a slew of well-elaborated critiques around the problems of development, questioning whether a "post-adaptation turn" is called for, similar to the post-development turn that has brought to light the many ways that development projects reinforce colonial power relations and structures (S. Eriksen et al. 2021).

Seen from this light, the Maya version of the story points towards a different carving up of the nature-culture rift, one in which a landscape is both alive and agentic. The felt tremors of the modern world call forth a cosmopolitics in which non-modern constellations are entertained for the possibilities they offer around what it might look like to carve up the world differently—both epistemologically, in our minds and dominant cultural narratives, and ontologically, in our ways of relating with and shaping elements of the world. The stor(y/ies) of the *libramiento* reveal a context of ontological conflict (see Blaser 2013a), a power-charged landscape in which Sotz'il's efforts seek recognition for a world felt to be under existential threat. Recognizing that world is not only an act of reconciliation towards a subordinated people, it can also provide a richer perspective on complex phenomena that deal with the intra-section of multiple ontologies, and to prod our thinking and praxis to be both as deeply unsettling and as life-affirming as what is called for in this moment of metacrisis, in which life on Earth is under increasing peril. Unresolved questions about the nature of a living world might be honestly interrogated, rather than bracketed out. Finally, the story of the libramiento reveals that the Maya Cosmovision is relevant to contemporary issues of ecological destruction. If it brings insights to bear on the story of a highway construction that traverses an urban area, it may bring a valuable vantage point to other socionatural change processes, and indeed, to climate change itself. To this possibility I devote the following chapters.

5. Climate Change and the Maya Cosmovision: The Heart of the Earth in Retreat

> "Our grandfathers and grandmothers taught that it is not only humans who exist upon the face of the earth. Plants, animals, mountains, wind, water, and fire are also alive. They have their heart. Therefore, we should respect them; and if we do not, then problems will come to us." —"Maya Knowledge and Wisdom" (García Ixmatá 2010, 219)

This chapter presents findings and discussion around the second research question: *What is climate change through the onto-epistemological configuration of the Maya Cosmovision?* It explores how climate change (a multiple object) is enacted uniquely via the onto-epistemological patterning of a Maya world. An ontological approach is taken not to reify a fixed notion of Maya perspectives or of what constitutes a Maya world (see Mercier 2019), but is fitting because of the coherence I discovered among participant perspectives and experiences.[29] Thus, a Maya onto-epistemology and the Maya Cosmovision are treated as enacted realities that research participants perform and maintain through the convergence of practices, knowledge, and values. Moreover, the research question and design does not attempt to present a view of climate change that is representative of Kaqchikel or Maya perspectives. Rather, in this section I attempt to see climate change *from* an enacted Maya onto-epistemology, based on what research participants shared, and to use this as a way of building a more complex and layered understanding of climate change, and of

[29] Admidst an anthropology dominated by constructivist notions of identity, Fischer (1999) is also challenged to think through the coherence he discovers in his ethnographic work examining the Maya movement, based primarily in Kaqchikel communities; he offers the concept of "cultural logic" as a way of analyzing dynamics of both continuity and generativity. On the other side of the spectrum of ethnographic experience, see Graeber (2015), who suggests that an ontological analysis would not serve because of the great incongruities among informants' perspectives. In the same vein, commenting on an ethnography among American Evangelicals, Bialecki (2016) observes "that in some places, there may not be 'ontologies' – that there has not been enough sedimentation or regularization to create either discourse, or the concepts, or the experiences, that pass for ontology."

unsettling modern assumptions that are reaching their limitations in the Anthropocene.

In section 5.1, three empirical themes are presented, organized by the dimensions of my analytical framework as presented in section 3.1: the first focuses on knowledges and practices (epistemology - methodology), the second on values (axiology), and the third on realities (ontology). First, climate change is understood by participants as driven by human behavior, and specifically by the loss of traditional Maya practices, passed through the generations in the form of lived knowledge. Second, these changing practices reflect changing values, namely the deterioration of a sense of reverence for a world that is alive. Third, climate change is the diminishment of a Maya world, and may be understood through the Kaqchikel concept of *xuxutuj ri k'ux*. This concept demonstrates the material, enactive implications of human attitudes and behavior in maintaining harmony with other elements of the cosmos and describes how lack of reverential attention to our planet impacts her in a way that can be understood as Mother Earth's *k'ux*—equivocated as heart or essence—in retreat. Although I have presented these themes separately and sequentially for clarity, I have left empirical examples in longer quotations that often mention multiple related strands—how practices, for example, demonstrate an axiology of respect, are codified in Maya epistemology, and impact elements of the natural environment. Presenting these longer references demonstrates how from a Maya view, the dimensions mentioned above are inextricable.

In the second section, my discussion, I first weave together the sections of data to show how knowledge-praxis, values, and realities co-constitute the Maya Cosmovision via what I refer to as *Maya enactivism,* a Maya form of causality in which Maya practices and values maintain a world in harmony. Through this lens, climate change can be understood as the erosion of a living world in correspondence with the diminishment of Maya knowledge, practices, and values. Second, I propose several takeaways that emerge from this vision of climate change, lessons which may serve to help think beyond the limitations of modernity in climate research and interventions.

5.1 Empirical themes: Sustaining the Heart of the Earth

Maya Knowledge-praxis: *Ya no se hace eso*

Throughout my fieldwork, workshops and interviews touched on the question of how participants perceive their worlds to be changing. Taking climate change to be a multiple object with many meanings (Esbjörn-Hargens 2010; Hochachka 2019; Hulme 2009), I explained to participants that I was interested in climate change, but directed conversations so that participants could freely and broadly discuss the socio-ecological change processes that were most present in their experience. Indeed, participants described many changes in their communities: from changing rainfall patterns, to deforestation and increased plastic pollution in rural communities, to population growth and increased crime in Chimaltenango; and I found that participants understood these change processes as connected. Participants linked climatic and environmental changes to human activity—but not narrowly only to behaviors that lead to carbon emissions. Rather, environmental changes were linked broadly to the erosion of traditional practices and lifeways.

Practices in this section refer not to all human activities, nor only to practices that are explicitly tied to the self-conscious performance of Maya spirituality, but to all practices that hold ancestral meanings. These traditional practices included things like holding a festival and making offerings before planting seeds for the season, or collecting and eating wild greens, or observing the sky and elements of the surrounding landscape for indications of coming weather. They also included practices of asking permission from the guardians of natural elements before, for example, taking wood from the forest, breaking the earth for planting seeds, or destroying a hill to construct a highway (as in chapter four).

In participants' conversations with me and in workshops, many lamented that these practices are now being lost. The refrain that I heard time and again was a sadly imparted "*ahora ya no se hace eso*," this is no longer done anymore. The following passages from workshops and interviews illustrate that changes in Kaqchikel knowledge-praxis are framed in the language of loss. In a workshop with community

leaders, several participants commented on how their parents and grandparents always picked up every grain of corn or edible seed that fell:

> It's what my grandfather used to do, my deceased father, just like that, picking up all the grains that had been left behind. But regrettably, today in our country, we don't care for [seeds], we waste a lot of them, not like before. And this we should recover again, all [that] has been lost, because we are seeing that before it was like that, if you saw a grain of corn, you picked it up; a bean, you picked it up. But now it's not the same as before (Gerardo 10/28, 5A).

An elderly man unveils the meaning of the practice of letting no seed or grain go to waste:

> Every seed, every plant, is a [grain of] hope for the people. If we didn't have the culture of respecting seeds, perhaps we would have no identity. One time, a co-worker told me...he saw a man picking up grains of corn that had fallen there, in the bus station [in the capital]. And he told me: 'There is so much poverty! That a man, poor thing, goes picking up grains; no doubt they are going to serve him for a meal.' And it wasn't that. Simply, our ancestors always indicated that one must respect the seed. And no doubt it saddened the man, it made him feel pity, that the corn was thrown there; he picked it up so that it wouldn't be trampled. It was something very intimate, very spiritual—not a question of hunger (Miguel 10/28, 5B).

In the first quote, don Gerardo laments the deterioration of the practice through the generations. The second quote illustrates, in the form of a story, how important the practice of collecting seeds is for Maya people. It is intimate and spiritual. Yet the story is also about a misunderstanding. In the context of an urban transit zone, a site of clashing ontologies, don Miguel's colleague misinterprets the practice. Thus, the storyteller takes the opportunity to iterate with pride that what while an observer mistakes Maya practices as acts of poverty, they are imbued with intention and run much deeper than they appear; Miguel is aware that as ancestral knowledge-praxis, they are sources of meaning and collective identity.

Such ancestral practices, in a Maya view, are essential for maintaining harmony among the elements of the cosmos that humans depend on to survive. Nana Paulina, Ajq'ij and Maya medical specialist from San Antonio Aguas Calientes, explained:

> The grandparents, our ancestors, what they did...we've lost now, and this is why the environment is damaged. Because our ancestors fed these energies. They tried to give them life, to give them energy, because they knew that from these same energies, they made requests.... So the ancestors made offerings. Thank you Mother Earth for the crops, thank you, because you are giving us a way to breath.... Nature is the complement of our very selves.... But what are we doing? Damaging. The grandparents...cared for, protected, because they knew they depended on it... But we have forgotten this (11/5 5C).

Nana Paulina's explanation highlights that Maya ancestors cared for the elements of their landscapes out of a deep understanding that we are part of Mother Earth and that we also depend on the water, the fish, and the harvests for our own sustenance. Maya sense attests to the need for humans to attune to and care for our environments for our own survival as well as for maintaining equilibrium of the Whole.

I link these changing practices to the epistemological component of my framework, because as many Indigenous and non-Indigenous scholars have noted, Indigenous knowledges are not just mental knowledge but praxis, lived knowledge encoded in actions that maintain relations with the non-human world (Berkes 2008; Kimmerer 2013; Martin 2003). Practices such as the collection of certain native plants for eating or for medicinal purposes are clearly linked to Indigenous knowledge that is passed through the generations. As Leonel described to a community group we visited, "Traditional knowledge is nothing more than the knowledges my grandfather left me—the practices my grandfather has left me" (11/9, 5D). Moreover, practices link to "epistemology" in the broader sense as human perspective-taking and meaning-making; as this section shows, the traditional practices participants referred to, are not just any "action," but those actions which are imbued with ancestral meanings and the construction and maintenance of Maya identities and worldmaking.

Maya Axiology: Reverence for a Living World

Repeatedly, research collaborators used the same word to describe the attitude that engenders these traditional practices: *respeto*, respect. I came to understand their use of the word as something which perhaps translates more precisely to reverence. It is a deferential axiology based on the profound adoration of all that is alive and of all that is sacred, which is all that is. It is an attitude of care—both in the sense of care as nurturance and of care as concern. It is an attitude of humility; it recognizes that the human is embedded in a set of relations, that we depend on the grain of corn, on water, and on the wisdom of our ancestors, and that we sustain these elements so that they in turn can sustain us. This passage from my interview with don Jorge captures the connection between respect, the (living) subjectivity of all parts of nature, and human interdependence with the non-human elements of the cosmos.

> The Cosmovision is the whole. The Cosmovision is not a part or another part, there is no division, it is everything that exists around us. And ... everything that exists around us, according to [Maya] spirituality, ... has life. ... In one way or another [everything] contributes to the well-being of the human being. ... The human being cannot be without nature. ... That's why thanks is given for what one has, there are always offerings, ceremonies, ... for all we have around us. ... Why is it that, where Indigenous communities are, there are always [natural] resources? Because we see [nature] in the same way as our own lives! So that's why ... my father ... asks for permission to cut down a tree. ... He lets trees grow on his land, and when they're big, they fall down, or he cuts them down, and there he has his firewood. But always with respect for nature, respect for nature is part of the Cosmovision (10/17, 5E).

Conversations with don Julio emphasized the embodiment of these attitudes of respect, and how deeply such a reverential attitude has been held as a norm in Maya communities. When asked if he grew up with the practice of leaving offerings and asking for permission before entering the forest, he told me:

> Yes. But not in a way like, how do I put it, very religious. But more as a practice, as an attitude. Just as I mentioned earlier about how one takes the corn, and makes a sound like this, like *wuh*! [*makes blowing sound*]. They do this not only in [my hometown of] San Martín, they do it in

> different places. They take the [corn] dough and [do] the same; they take water and [do] the same; they take the firewood, the same. It's like that. It's an attitude like taking off one's hat, and looking towards where the sun rises, and reflecting like that, very—without religion. It's just an attitude. Direct. Yes. That. And everything that happened, it is assumed that it is the will of a Supreme Being. ... One must respect and [have] this attitude of not destroying. … That, in a way ... marks one in one's own unfolding (10/15, 5F).

The practice he describes of making a blowing sound on the water, firewood, or dough, is done when picking it up, as a way of "not frightening the heart of the element you're taking." In another conversation, don Julio emphasized the extent to which reverential attitudes were inculcated in him from an early age, and pervaded his childhood. A hat should be left upside down so that it may rest, he said, even an artifact like a hat is sentient and requires care and attention. And of course, the seeds: the seeds cry when no one collects them.[30]

Several participants commented that the loss of traditional Maya values and attitudes are reflected in changing human behaviors which drive climate change. In a workshop, Franklin, another Sotz'il colleague, noted:

> The name "climate change" is attributed...to the alteration of these cycles of climate change on the planet...but this change has been...because of human activities.... I consider [human] values to be of big influence, [and] the loss of culture has affected this type of situation…it has potentiated it (10/29, 5G).

When asked what climate change is from the Maya Cosmovision, Tata Pedro, *Ajq'ij* and Sotz'il's Spiritual Advisor, said it's "the common [explanation, the one] that everyone says. But if we look at it from [Maya] philosophy, it's the loss of values." He went on to explain that a "fundamental" value from the Maya Cosmovision is respect: "We have to respect everything because everything has life" (11/8, 5H). Thus, climate change reflects a loss of Maya values and specifically, the erosion of attitudes of respect.

[30] Don Julio, personal communication 7/21, 2020; and 8/3, 2020.

Maya Ontology: The Heart of the Earth in Retreat

Finally, in Maya ontology, reverential practices help sustain harmonious relations among all the elements of the cosmos. Like the *dueño* of the hill where the *libramiento* was built, which responded to human destruction in kind, the essences of non-human elements respond to human intentions. In Kaqchikel thought, when a being has not been valued or attended to, its *k'ux*—heart or essence—responds by leaving. This state is described as *xuxutuj ri k'ux*. The concept illuminates the role of the human in maintaining balance amongst the elements of the cosmos, and how everything possesses life, including interiority and agency. Through the concept of *xuxutuj ri k'ux*, I come to an understanding of climate change that is harmonious with a Maya ontology. The data from this section is presented under the section on Maya ontology because it demonstrates that for research participants, changing practices and attitudes have impacts that are real on entangled physical and energetic planes of existence. Here I share empirical examples.

In a Maya view, practices of care accord with the tenet that everything is alive and responds to the energy that is directed towards it—when they are not cared for, what is referred to as their *nahual, guardian,* or *k'ux* responds in kind, as we have already seen with the case of the hill cut by the *libramiento* in chapter four. As an example, I present what seems from a modern mindset like a peculiar behavior of water. Several research participants mentioned that sources of water in Maya communities are known to dry up in rebuttal to human altercations in their vicinity. Don Julio articulates this observed behavior of water, relating it to Maya axiology and epistemology:

> Water pertains to the mineral kingdom in Western knowledge, and [it] does not have life. But in this world we find that water is not classified in kingdoms in that way, and water has life. [*Exemplifying a response*:] "Yes, but it's belief." [Then] how do [you] explain, when people speak to water, and the water corresponds? For the Indigenous it makes sense, here is a spring and here people fight…the water leaves. … It's not an isolated case. We've analyzed [various] cases. … Water has life, has personality, has energy. … If it doesn't have life, it can be mistreated. But if this element has life, I am going to respect it (10/16, 5I).

For don Julio, who is an environmental engineer with a proclivity for empirical analysis, it's a question of evidence. The premise from Maya epistemology that water is sentient explains what they have observed better than the Western presupposition that water is inert. For Maya, water, like the hill where the libramiento was built, has its *guardian* or *nahual* which requires care and responds to human intentions and energetic qualities. Nana Regina, an elderly Ajq'ij from Sumpango, Sacatepequéz, recounts the following story. About forty years ago, the Community Mayor approached her asking for help because the water had dried up from—had *left*— the local spring. Nana Regina, in the process of formation as Ajq'ij at the time, found out that people had been fighting there and that a water jug had been broken. She asked Tata Cristobal, an Ajq'ij from Tecpan, to perform a ceremony for them:

> I said, all of the people have to participate. They have to have marimba, to have a party. … Then [Tata Cristobal] pulled me aside and said, 'Look, you are on the path to receiving your *barra* [to become an Ajq'ij]; come help me.' And we were there at night digging out the cave, … there we did the ceremony. They made two big pots of *pulique* [chicken stew] and *tamalitos* [corn dumplings]. The Catholics were there, the Evangelicals [were there, and] those who weren't anything [were there]. … And [a] *huge* party … was [celebrated] all night, even the Evangelicals ended up dancing! … And on the third day, the water came. … From there, the water springs now. … But yes, we see … that everything … in nature has its nahual (11/11 5J).

Even water has its *nahual*, and must be attended to. Nana Regina stresses that the success of the endeavor relied on *everyone* participating: the force of coherent and collective human intention was needed to call the water's nahual back.

This state of *xuxutuj ri k'ux* was also discussed by the guides to explain the diminishment of certain native plant species that are observed to be disappearing from nearby communities.[31] While their decline can be related to habitat loss,

[31] The *membrillo* in San Bartolome Milpas Altas, the *apazote*, and "various trees" were mentioned. In the case of the *apazote*, a participant recounted that foreigners from Japan discovered its properties as a natural antibiotic and took the plant, while the locals did not appreciate it. According to her, an

drought, and warming—explanatory factors that "make sense" from a modern ontology—they can also be tied to a decline in Maya practices of harvesting and using them, and a direct response to humans' lack of appreciation for the plant. It is as if, one participant described, the plant feels unappreciated and becomes depressed. The recommendation is to hold a ceremony to call the *k'ux* back (10/29).

Xuxutuj ri k'ux is a state that can affect humans as well. Such is the case of Adelia, a spiritual guide who attended the first workshop with guides. Since the age of six, Adelia has had "revelations"—visions in dreams and otherwise, of things that would come to pass. Someone—sometimes a singular someone, sometimes a plural "they"—would pursue her, showing her things, "*grandes maravillas*," [32] and would direct her to light candles—a yellow candle one day, a white one the next.[33] Yet while her dreams proved to be accurate prognostications, Adelia lacked guidance from an Ajq'ij to help her channel them, and experienced her gifts as a burden. Her husband told her she was crazy, and her family feared her visions. And as her relationship with her *k'ux* or *nahual*—the life essence that granted her *don*, her gift or mission as an Ajq'ij —was full of affliction, her life had also filled with misfortune. Her son was murdered on her doorstep. She never recovered from the grief. Her husband had an affair, leading to their separation. As Adelia recounted her story, her voice shook; she conveyed the details conveyed piecemeal in a way that lacked coherence, as if her spirit was still not at rest (10/29).

Tata Valerio suggested that the energy that guides Adelia was not attended to or appreciated, so it left, "and from there, the problems [came]." Tata Benicio associates her state of *xuxutuj ri k'ux* with the Western notion of depression, not as an alternative diagnosis, but as a complementary perspective, an underlying cause:

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anciana (elderly woman) from the community observed that the plant's *k'ux* had departed, advising that it be called back ceremonially (see Fischer 1999, 482, for an explanation of the significance of this ritual).

[32] "great marvels" or "great wonders" (10/29).

[33] Candles are used in fire ceremonies for the Kaqchikel and other Maya with a wide variety of meanings; colored candles correspond to the four cardinal directions (Bell 2012, 96–97). Candles are also used in Kaqchikel homes on altars or areas of prayer. Just as in sacred Maya fire ceremonies, fire is a channel for communication with the spiritual realm (Wilfred Son, personal communication).

> The psychologists have another name for it…[when] the sadness [and] the bitterness that [people] feel in their lives [is so much] that they begin to shut down,…there is a sickness, what's it called when people shut themselves in their room and they don't want to feel? (Other voices in group: "depression.") That. That's precisely what it generates, that *xuxtuj ri*…one abandons [and] disconnects from one's own self, from one's energy, from one's nahual…and…isolates oneself so much that one begins to get sick with…depression (10/29 5K).

Not until recently, under the guidance of Nana Lupe, who was helping Adelia to claim and develop her mission as an Ajq'ij, has Adelia realized that her k'ux brings benefits. Tata Benicio tells her that it can be called back, but that Adelia must enter into an agreement with it, must care for it.

As the guides drew parallels from Adelia's state of despair, to water drying up, to native plants disappearing, an interpretation of climate change also emerged through the concept of *xuxutuj ri k'ux*. Tata Benicio explained, "When we look at the earth, [and see] all the mistreatment that the human being has done to it, the earth itself *xuxutuj ri*, [and] climate change is generated." Franklin added that this process happens through the "loss of culture." Nana Lupe commented, "now [Mother Earth] is handing us the bill."

Xuxutuj ri k'ux indicates that not only humans, but all beings possess their own agency and intentions. Tata Benicio explains:

> This is…a difference between the system that dominates in the world and our native peoples, Indigenous peoples, specifically the Maya, that…for us everything has life…everything has its *k'ux*, and when everything has its k'ux, everything has its own thinking, its own way of projecting itself, its own projections for where to go (10/29 5L).

Thus, for many Maya, Mother Earth also possesses intention; she is willful in her response to humankind's wanton and unrelenting destruction. Her heat waves, her droughts, her increasing capriciousness in the form of disasters and floods, are not reflexes of brute matter to human domination, but intentional responses to being treated poorly. Tata Benicio also mentioned that Mother Earth herself "has her own

intelligence for being able to renovate herself," according to her life and age, within the cycles of time.

What I have come to understand from participants referring to cultural changes and changing values they perceive in their communities, is that they see the configuration of practices, attitudes, and knowledge as enactive of a world in harmony. Maya onto-epistemology contains its own theory of causality. Interior dimensions like values and perspectives (and knowledges) are reflected directly in human praxis, and in impacts that ripple across energetic and physical domains—both of which are real, and entangled. When the *k'ux* of a thing departs or deflates, physical consequences ensue. Practices of care and the reverence that imbues them maintain Mother Earth's spirit, and our lack of attention to her generates *xuxutuj ri k'ux*, a state that is linked tightly with climate change.

5.2 Discussion: Climate Change, Maya Enactivism, and Modernity

This discussion unfolds in three parts. In the first, I address the research question: *What is climate change from Maya onto-epistemology?* Through the Kaqchikel concept of *xuxutuj ri k'ux*, the empirical material as presented in this chapter suggests a Maya understanding of climate change as the heart of Earth in retreat. In the second section, I unpack *this* climate change and its coherence with the Maya Cosmovision. In the process I delineate what I call *Maya enactivism*, with a nod to Viveiros de Castro's Amerindian perspectivism; Maya enactivism draws upon Descola's theorization of analogical ontologies, contemporary Maya texts, and perspectives voiced by research participants, to demonstrate the entanglement of values, praxis, knowledges, and a Maya ontology, in illuminating a conception of climate change distinct from the dominant one. Through Maya enactivism, the logic of Maya causality reveals climate change as a world in diminishment, alongside fading practices and values. Finally, in the third section, I suggest implications of Maya enactivism for productively unsettling modern assumptions that are reaching their breaking points in the Anthropocene, and for expanding from the dominant techno-managerial approach to addressing climate change. Four themes from the Maya Cosmovision are suggested as salient: 1) the entanglement of the social and

natural, 2) non-human agency, 3) the ontological impact of subjectivities, and 4) human beings as responsible, but not in control.

Climate Change from a Maya Ontology: More than One

For research participants, climate change is several things. It is the higher heat, longer dry seasons, and delays and fluctuations in the rainy season, felt keenly by the majority of the Maya who depend on subsistence farming. It is also changes in the populations and behaviors of plants, animals, and fungi species. For example, *zompopos* (giant ants) are known to historically appear in May to announce the rainy season, but in recent years have not appeared until June, July, or later. Several participants also associated plastic pollution—a highly tangible issue in Maya communities, many of which do not have municipal trash collection—to climate change. For Sotz'il members, it is also the increase of greenhouse gas emissions, cohering to the dominant definition from Earth System sciences. Climate change is all of these things for research participants, and yet, it was something more as well, linked to what I would typically categorize as social and cultural changes—changing practices and values—as revealed by the data presented in the first part of this chapter. Recall that Tata Pedro said that from the Maya Cosmovision, climate change is the loss of values. Franklin attributed it to culture loss. It is the retreat of the planet's *k'ux* in response to human mistreatment and disrespect.

For me, the connections between these renderings of climate change were not immediately intuitive: it was clear enough that participants agreed with me that the world is warming, and that human behaviors are responsible. But, to borrow a line from de la Cadena, I found that "our shared view was also more than one" (2010, 338). While Sotz'il members clearly understood and accepted the familiar story of human activities driving climate change, they and other participants suggested a more multidimensional kind of causality: an entanglement of culture, values, and the environment whose logic was not immediately apparent to me. Further, I was perplexed as to why climate change was discussed so prominently in terms of *loss*, given the long history of efforts to erase Maya culture since the colonial era, and the modest but unprecedented gains made by Maya activists at cultural revitalization in the last several decades (Arias 2006). My findings show that for research participants, there is a connection between Maya knowledge-praxis, values, and

attitudes, and balance or imbalances among domains of the real, via a Maya view of causality I call *Maya enactivism*, and that climate change is emblematic of their mutual diminishment.

Untangling Knowledge-Praxis, Values, and Ontology: Toward a Theory of Maya Enactivism

In the introduction, I mentioned Viveiros de Castros' Amerindian perspectivism as exemplifying how research with Indigenous ontologies can unsettle deeply-engrained assumptions of a modern ontology. The theory also demonstrates a trend among anthropologists developing ontological approaches to ethnography: adopting concepts from local ontologies towards social theory-building (Paleček and Risjord 2013, 6). Amerindian perspectivism is not only descriptive of an Indigenous ontology, it has contributed to the development of ontological pluralism as a mode of analysis. Remember that in perspectivism, what is blood to the human, is manioc beer to the jaguar. The relationship is identical, but the object is multiple. The unicultural-multinatural configuration of perspectivism is employed by Viveiros de Castro as a lens to understand the comparative endeavor of anthropology itself, that what is being compared might *be* different depending on one's vantage point (2004a). Following Viveiros de Castro in spirit, I look towards an Indigenous ontology for developing and applying what I refer to as *Maya enactivism* as a tool of analysis. Enactivism is developed drawing upon both my fieldwork experience and literature (e.g. Descola 2013; Esbjörn-Hargens 2010; Murray 2019); it is a way of making sense of what I heard from research participants, and a lens with which to turn and look back upon climate change and modernity. Maya enactivism explains the entanglement of knowledge-praxis, values, and ontology; it refers to the idea that through human and non-human agency, the world is actively brought into being in each emerging moment.

Let me begin by returning to Phillipe Descola's fourfold ontological framework, which I mentioned in the introduction, to sketch elemental contours of Maya ontology. While animistic ontologies like those that have inspired perspectivism have been identified across the Americas from the Amazon to the Pacific Northwest (Course 2010, 250), Mesoamerican ontologies are considered to be quite distinct. Recall that in Phillipe Descola's heuristic, Mesoamerican ontologies are analogistic,

distinct from animistic in that *both* nature (or bodies, or physicality) and culture (or spirit, or interiority) are characterized by discontinuities (Descola 2014, 276).[34] The distinction is not intuitive: in both animistic and analogistic ontologies, everything is alive.[35] Yet analogistic ontologies, Descola argues, can be identified by the complexity of their knowledge systems. A world where small discontinuities separate the entities of the universe in both their interior dimensions and their physical manifestations must be ordered and maintained through an intricate and thickly woven web of relationships. Descola maintains:

> only analogical ontologies have managed to systematize these straggling chains of meaning into ordered and interdependent sets that for the most part are designed to be effective practically: ways to cope with misfortune, the orientation of buildings, calendars, predestination, eschatology, divinatory systems, the compatibility of marriage partners, good government—everything is interconnected in a web so dense and so charged with consequence that it becomes impossible to tell whether it is man who reflects the universe or the universe that takes man as its model (2013, 109).

In Descola's typology system, a Maya ontology has more in common with that of China—with its wide breadth of applications from astrology to healing— than with those of many other Amerindian groups. The Maya Cosmovision has spurred a comprehensive and highly coherent system that includes medicine, science, mathematics, divination, and spirituality in one Whole. While Descola's framework is doubtless only one way of conceiving of a Maya ontology, it is illuminating as a basis for understanding both the complexity of the Maya Cosmovision and its knowledge paradigm, what I experienced as its tendencies towards coherence, and its enactive dimensions, as I explore below.

Rather than divided by disciplines, Maya ways of knowing are ordered by archetypal patterns such as the numbers thirteen and twenty (the number of digits on the human body), the symbolically-charged *nahuales*, the four cardinal directions, and

[34] Recall that for Descola, an animistic ontology is characterized by interior continuity and exterior discontinuities, a description that aligns with Viveiros de Castro's unicultural – multinatural sketch.

[35] For this reason, some scholars describe aspects of Mesoamerican cosmology as animistic (see Hill and Fischer 1999, who draw on Alfredo López Austin's research on the ancient Nahua).

complementarities such as male/female, which repeat fractally from the macro to the micro of the cosmos, through time and space. For example, the moon circles the earth thirteen times in a year, and the human body has thirteen joints—through the number thirteen, the human body is bound to the larger cosmos (García, Curruchiche Otzoy, and Taquirá 2009). Likewise, as shown, *xuxutuj ri k'ux* is a pattern that replicates through different manifestations, moving through Adelia, plants, water, and Mother Earth herself, based on the tenet that everything has its *k'ux* or *nahual*. Maya knowledge-keepers build their knowledge intuitively and rationally on these types of analogies and relationships; there is not a discrete body of knowledge handed down from generation to generation, but a paradigm within which knowledges and practices have evolved, diverged, and cohered. For example, Tata Pedro described that he has three maps that he uses to read signals or "movements" from his body; he inherited one from his mentor and developed two over time; they are translated based on correspondences between parts of his body and the Maya calendar; he "triangulates" the information from the three maps. Each *Ajq'ij* has his or her own special techniques for accessing knowledge, be it through dreams, sacred fire ceremonies, or smoking cigars, and not all those who read body signals use the same map (Pedro 11/8). Much like the ways that Western scholarly work develops new approaches to generating knowledge whilst building upon and relating to the history of scholarship in their fields, Maya Ajq'ij develop novel and individualized ways of knowing that nevertheless emerge from a Maya paradigm and its coordinating analogies.

Maya enactivism refers to the way the world is sustained and brought into being in each emerging moment via the active role each element of the cosmos must play. In an analogistic ontology, a plethora of singularities tied together through patterns that replicate across various dimensions of time and space demands great care to maintain equilibrium. The parts must be actively woven to maintain the whole (Prechtel and Carlsen 1988). The document "*Ruxe'e' Maya' K'aslemal*" (Root and Spirit of Maya Knowledge), a text co-authored by a group of Maya *Ajq'ija'* and university students, in consultation with Maya ancestors through the Sacred Fire, states:

> In the Maya Cosmovision all of nature is integrated, ordered, and interrelated. And the self in Maya conception is all of those elements that exist in nature, which is to say, everything in the universe is animated or

> has life. Every being is complemented and completes the rest (García, Curruchiche Otzoy, and Taquirá 2009, 55).[36]

Thus, a Maya world is an emergent gestalt, larger than the sum of its parts, "a vast system whose primary function is the regeneration and continuation of time and of the world" (Prechtel and Carlsen 1988, 123). Another contemporary Maya text, "*Raxalaj Mayab' K'aslemalil*" (Maya Cosmovision, Fullness of Life) describes a world that is fully alive; the emergent, creative pulse of evolution nourishes all entities, including time itself, with life. All things come from a cosmic point of origin and break forth into diverse expressions of life. Each expression of life carries its cosmic origin. Every part contains the totality of the universe (Cochoy Alva 2006, 31).[37] It is a densely woven, dynamic web of intra-becoming, each part both emerging from, and nourishing and maintaining harmony of the whole and of the web of relations via sacred attention to its particular role in the web of life. From their attention to maintaining the cosmic order, the Classic Maya developed practices that fostered conservation and biodiversity, in a process of negotiating and renegotiating relations in their world which continues to the present day (Lucero 2018). This "cosmology of conservation" (Ibid.) demands an attitude of reverence and the continuity of practices of care for a living planet.[38]

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[36] "*En la cosmovisión maya toda la naturaleza se encuentra integrada, ordenada e interrelacionada. Y el ser en la concepción maya son todos aquellos elementos que existen en la naturaleza, es decir, todo lo que hay en el universo es animado o tiene vida. Cada ser se complementa y completa a los demás.*" My translation of the title is based on the Spanish subtitle: *Raíz y Espíritu del Conocimiento Maya*.

[37] My translation of the title is based on the Spanish title: *Cosmovision Maya, Plenitud de la Vida.* This fascinating and moving text frames contemporary global crises through Maya philosophy. Its wisdom is attributed to the Maya people, and expressed via the collaboration of eight Maya (Mam, Kaqchikel, and K'iche') grandchildren: María Faviana Cochoy Alva, Pedro Celestino Yac Noj, Isabel Yaxón, Santiago Tzapinel Cush, María Rosenda Camey Huz, Daniel Domingo López, José Augusto Yac Noj, Carlos Alberto Tamup Canil; it is published by the United Nations Development Programme. All quotations are translated from Spanish by myself.

[38] Regarding how the colonial Maya of the Yucatán peninsula maintained the cosmos through a complex hierarchical system by which heaven and earth were linked in mutual sustenance, and the threat Christianity posed to the cosmic order, see Nancy Farris (1984, chaps. 10–11), and the other references in footnote 25, page 38 of this text.

In a Maya vision, the human being is not set apart from (and above) nature as in a Cartesian ontology, but it does have a special role as a reflective, sense-making, and prayerful creature. In the K'iche' Maya origin story redacted in the *Popul Vuh*, the most influential text of the ancient Maya to have survived the onslaught of the Spanish conquest, the Creators conceive of a being able to speak their names, to invoke, them, and to adore them (Goetz, Morley, and Recino 1954, 5). After several failed iterations, the first fully-human human is conceived from corn. In historical Kaqchikel and Mesoamerican conceptions of self, the role of the individual, embedded in the collective, is to maintain cosmic equilibrium and harmony (Hill and Fischer 1999, 318). *Maya Cosmovision, Fullness of Life* describes the human as the "illuminated being that respects, invokes, gives thanks, and feeds the creative and formative forces of life" (Cochoy Alva 2006, 43). Via an axiology of reverence, and knowledge-praxis of gratitude and remembering, the human performs its role which, in relationship with the roles played by all expressions of life, *enacts* the world: "The spiritual celebration of life and existence in its fullness is given in *each act* of our human life. This celebration is the culminating moment of relational existence with the totality" (Cochoy Alva 2006, 21, emphasis mine).

Thus, through Maya enactivism, I come to understand why participants framed climate change in terms of loss: *climate change is the erosion of a world in relationship to the loss of values and practices that are devoted to its maintenance*. For the Maya, ontological insecurity and rupture is precedented: from the collapse of the Classic Maya, to the Spanish conquest, to the state-sponsored genocide, the Maya have survived multiple apocalypses, and have renegotiated their relations in a changing world (Farriss 1984; Lucero 2018; Viveiros de Castro and Danowski 2018, 192–94). The past several decades have seen the exponential acceleration of various processes of late modernity that drive entangled economic, social, and ecological changes, a phenomena anthropologist Thomas Hylland Eriksen refers to as "overheating" (2016, chap. 1). Global processes intersect with—and often clash with—the particular and local (Ibid., chap. 8). Neoliberal development manifests in, for example, the construction of the *libramiento* in Chimaltenango. Its forces drive entangled socio-ecological changes in Maya lifeways and practices and heightens ontological insecurity in ways too complex and multi-faceted to parse out here. Another salient process manifesting at various scales is the viral growth of

Protestantism across Latin America, which has found its most fervent expression in Guatemala (Bjune 2016). The growth of evangelicalism has led to increased stigmatization of Maya spiritual practice, a factor commented upon repeatedly by research participants as contributing to the erosion of Maya cultural traditions. These factors notwithstanding, an adequate understanding of participants' experience of "culture loss"—and a critical engagement with any problems the concept poses—is beyond my purview. Suffice it to say that Maya enactivism suggests that for research participants, the experience of loss is not only "cultural," but environmental and ontological.

Given climate change and other pressing crises, the Maya authors of *Maya Cosmovision, Fullness of Life* call for humanity to reclaim our role in nurturing all forms of life, suggesting that "today, more than ever, we need to cultivate and enhance these qualities to overcome the crisis and the systematic self-destruction caused by humanity" (Cochoy Alva 2006, 43). Thus, following Maya enactivism, climate change emerges as but a symptom of the widespread neglect to fulfill our unique human role to feed all that feeds us. Our alienation from the land is as much a social and spiritual crisis as it is an environmental one. It is a crisis of fading cultural identities, attitudes, and practices that maintain an ordered and harmonious world. From within Maya onto-epistemology, in fact, divisions between environmental and cultural do not reflect native ontological configurations. Rather, participants configured the narrative of climate change around the relationship between human attitudes, actions, and the harmony or disequilibrium of the world in their care. Thus, for participants in this research, climate change is not understood as primarily an environmental issue. Practices, values, knowledge, and ontology, are reinforced or diminished in correspondence.

Turning our Gaze Back upon Modernity: The Anthropocene through the Lens of Maya Enactivism

The Anthropocene is widely and dominantly characterized as an issue of environmental change —despite the fact that its defining characteristics radically dispel the modern myth of an untouched "natural" world, separate from humans (Lövbrand et al. 2015). As discussed in the previous chapter, the fault lines that run between social and natural worlds—foundational divisions of a naturalist ontology—

are faltering. Yet, dominant approaches to climate change adaptation still treat it as a technical problem, rather than an adaptive challenge with political and personal dimensions (Ibid.; O'Brien and Selboe 2015; O'Brien 2018). A techno-managerial approach follows from a framing of climate change as an issue to be managed by humans, rather than one arising from a socionatural world and recursively pressing upon that world to transform itself. Like the Guardian at the threshold, the Maya notion of climate change that arose from my findings points to an ontological threshold. *This* climate change, climate change as the heart of the earth in retreat, is a climate change that is enacted outside the ontological limits of modernity, and thus, might productively agitate and help crack open the limitations of dominant approaches to addressing planetary crisis. It is thus worth paying attention to multiple climate changes as they arise from different ways of worldmaking. In this section, I present four themes that follow from the findings presented in this section, which are relevant for agitating a modern conception of climate change from the subaltern edges of the Maya Cosmovision. First, the Maya Cosmovision destabilizes a sharp divide between the social and the natural. Second, it grants agency to the earth. Third, subjectivities matter—that is, our attitude and intentions have enactive implications. Fourth, humans are responsible for climate change, but we are not in full control of its unfolding.

I. The Entanglement of the Social and the Ecological

As mentioned, participants spoke in the same breath about multiple entangled change issues. In linking climate change to issues such as the loss of Maya values, practices, and culture, research participants framed climate change as an entangled socio-ecological issue, rather than narrowly as one of environmental change. Likewise, associations were held between climate change and plastics contamination, deforestation ("environmental" issues), but also to changing diets, rising crime rates, and decreasing rates of Kaqchikel language fluency. From these findings, I suggest that an analogical, relational ontology invites a more distributed and entangled framing of change issues. A rigid division between social and natural approaches to research, policy, and praxis in Western traditions has been difficult to transcend despite calls for greater interdisciplinarity and transdisciplinarity in research (e.g. Fazey et al. 2017). I suggest that a Maya view of entangled changes can inspire a more flexible, broader, and deeper approach to climate change adaptation, one which

more readily includes socio-cultural changes as part and parcel of an integrated socionatural world.

II. The Agency of the Earth

Climate change as the heart of Earth in retreat includes the idea that the earth and all of her elements possess intelligence and agency. This notion challenges materialist assumptions of Earth System sciences, and may be among the most challenging for myself and readers of this text to take seriously, so deeply does it run against the grain of a Cartesian worldview. At the same time, Earth (or water, or plant, etc.)-as-agent is not a notion that Western science is equipped to refute, but rather, one which lies outside of its limits to explain or interrogate, with which it has no means to reckon. This Indigenous notion finds resonance with the lively world of distributed agencies conceptualized by social scientists in recent new materialist, posthumanist, and multispecies veins (e.g. Alaimo 2012; D. J. Haraway 2016; A. Tsing 2012), with inspiration from Latour's actor network theory. In harmony with Maya enactivism, such work highlights the possibilities of "working with nature," anticipating long-term environmental changes whilst acknowledging them ultimately to be outside of human control and planning for multispecies communities that allow for non-human life to flourish alongside human life (Jon 397). Quixayá, a Kaqchikel community of San Lucas Tolimán which I visited in December of 2017 (two years prior to this research) comes to mind. Historically, the community had been a coffee plantation in the hands of a wealthy landowner, but community members pooled their resources and, with help from the Catholic church, purchased the land and organized a system of collective management. Little by little, they transformed their aqueous valley into a verdant and productive paradise, drawing integratively on permaculture and Indigenous knowledge-praxis to develop a biodiverse system that includes production of tilapia, watercress, and other agricultural products, as well as recreational swimming areas for tourism. Showing us the pools of growing tilapia, our guide explained how the transformation of the local ecology and the prolific fish production had inspired otters to mysteriously find their way up the river to feed. Community leaders were perplexed as to whether the otters had found their way from the ocean some eighty kilometers away; follow-up investigations confirmed that members of nearby communities about nine kilometers away had seen otters in their river in years past; but they were never known to visit Quixayá. The caretakers had

responded by putting barriers up to protect the tilapia, but maintained a practice of offering the otters a regular allotment of fish into the unbounded river waters, to feed them and honor their fervent journey.[39] This example shows how starting from an appreciation for the embodied intelligence and freedom of the natural world—a world that includes humans and non-humans in systems of sensing and responding—can support transformations (political, social, and ecological) to more generative, abundant, and life-giving systems.

III. How subjectivities matter

Xuxutuj ri k'ux not only links changing practices and environmental changes, it describes a direct energetic link in which the human attitude—the degree to which reverence or respect is present, for example—has a direct impact on the entities among which it is in relationship. Maya notions of self-hood include an energetic domain that possesses certain qualities which are inherent to the individual (whether human or non-human), and others that are more state-based and temporary (Hill and Fischer 1999). Our internal attitudes literally *matter*—have material effects. *Ajq'ija'* employ various techniques to "manage energies"—which may involve, for example, calling the *k'ux* back; however, Tata Pedro explained that Ajq'ija' also must gather on occasion to purify and restore one another's energies, as the work they do to serve their communities takes so much out of them. In an exchange between Western and Maya medical specialists, Mayan healers were perplexed that Western oncologists didn't "understand the first thing about the basic (energy) system of the healer having an effect on the patient" (Berger-González, Gharzouzi, and Renner 2016, 86).[40] Tz'utujil Maya weavers in San Juan la Laguna, who work with botanical dyes, know there to be a direct link between the state of the plant's k'ux and how deeply the color saturates the textile, and for this reason are mindful to cultivate the plant with care and love. Likewise, they speak of how the finished product reflects the mood or heart-state of the weaver as she weaves the textile into being.[41]

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[39] My thanks to Mia Smith for helping to corroborate this information (4/27/21).

[40] One *Ajq'ij* and Maya medical specialist, whom I call Nana Paulina, collaborated both in the research for this thesis and in this cross-paradigmatic study of Maya and Western approaches to cancer treatment.

[41] Amalia Tay, personal communication 5/12/21.

While a deeper and more technical understanding of how the Maya manage energies is beyond the scope of this study, the notion can be instructive in that taken seriously, the idea that one's energy (or intentions, or attitude) matters leads to a much more careful attention to one's own interior state-in-the-moment, and aligns with how some scholars are looking to show how human subjectivities, including beliefs, attitudes, and worldviews, are critical dimensions of the climate crisis (O'Brien 2021; Hedlund-de Witt 2013). For example, Wamsler shows that qualities of mindfulness can expand adaptive capacities (2018), whereas Hochachka posits that subjective qualities such as religious faith, integrity, self-reflexivity, and resilience, and intersubjective practices such as collective prayer and visioning may support more transformative adaptive responses (2021). From an enactive stance, this point calls attention to not only the systemic impact of values, but the direct consequences of the moment-by-moment imbuing of one's attention with respect and care. What we believe, think, and feel *matters*, materially (O'Brien 2020).

IV. Human Responsibility and the Limits of Human Control

The Maya who shared in this research voiced both a deep sense of human responsibility for climate change, and humility regarding the limits of human agency. In the Maya view, there is causality: Earth responds to our lack of attention and respect. At the same time, since humans are but one source of agency in a web of relations, causality does not imply that humans are outside of and in control of the Earth System. In this view of climate change, agency and subjectivity is shared. Humans and non-humans all play active roles in maintaining balance, and environmental 'problems' arise from humanity's neglect of our role in maintaining the cosmic balance. This stance of responsibility and humility strikes me as important given the paradoxical state of the Anthropocene: humans are powerful, a dominant force on the planet—yet we are simultaneously forced to reckon with the limits of our own control, as we grapple with non-linear, uncertain, and complex interactions between multiple Earth System processes, human politics, and value systems. The responsibility to enact changes, and the humility to acknowledge the limits of our potency are called for in developing wise responses (Leduc 2014).

These nuggets point towards the wisdom of reconceiving the human-nature divide, and the urgency of tracing novel lines of relation. The Maya Cosmovision puts

humanity in the narrative of the Anthropocene, much as scholars from the critical social sciences and human dimensions researchers have called for (Lövbrand, et al; Goldman et al). But this is not precisely the narrative of even progressive social sciences, that call for a plurality of social voices and perspectives on/within nature. It is rather, the embedding of the human in a web of relations with shared subjectivities, coordinated along archetypal lines of analogy.

The point here is not that a Maya view of climate change is the correct one, it is that stepping into it playfully might serve to help us take a novel perspective on climate change as an intractable challenge that is as much about how we frame it as it is about how we choose to address it (Hulme 2009; Nightingale et al. 2020). We need to find ways of making object what was subject in the sense of transcending modernity so that we can see it more critically (Kegan and Lahey 2010), and of making subject what was object in the sense of allowing a living more-than-human world to become part of our social imaginary, and of allowing the modern world to be agitated from subaltern edges. It may serve us Moderns to unknow our most basic assumptions about the constellations of reality in our efforts to shift our thinking and being towards a more sustainable and regenerative patterning. In the following chapter, I explore how such an orientation can open solution spaces for sustainability, through the empirical example of Sotz'il's forest calendar.

6. Adaptation in a Cosmology of Transformation

> "[The Maya] lived with the idea that life was defined by uninterrupted change, …in a civilization founded in the belief that human beings prospered through continuous progress that was balanced by time-honored customs and traditions. In that constantly transforming world each age or creation ended when it fell into a specific form of chaos. … The ancestral beings that re-form the world…enable the next age of human civilization to begin again from a higher order that enables them to succeed. In this way, new ideas were integrated with old ones, in a world where nothing was ever lost nor allowed to remain the same." –*Los Nawales: The Ancient Ones: Merchants, Wives, and Lovers: The Creation Story of MaXimón* (Stanzione 2016, 27)

In this chapter, I examine how Sotz'il enacts adaptation from the frothy edges of multiple worlds, addressing the research question: *How might climate change adaptation be enacted via the Maya Cosmovision?* This chapter focuses on Sotz'il's work as an organization. Of the three empirical chapters, it also relates most explicitly to questions regarding the challenges and problems of knowledge integration, and seeks to demonstrate how mutualism between knowledges as embedded in their own ontologies, can lead to richer, more flexible, and more contextually-appropriate responses. The concepts from the second half of chapter three, "How Worlds Collide," are applied in my analysis—Sotz'il is conceived as transmodern, inhabiting partial connections. In the first section, I present Sotz'il's forest calendar, which documents and shares Indigenous knowledge on the forest cycle and seasonal forest activities, as an empirical case to be examined via Dussel's characteristics of transmodernity (2012). In the discussion, I analyze Sotz'il's approach to adaptation through the lens of transmodernity/partial connections/frothy edges, building on the presentation of the forest calendar as an exemplary case. Since this edge-space is conceived as one of intra-penetrating worlds, it is possible to frame the situation via a dynamic formation, one of recursive imbrication (in the language of Viveiros de Castro 2004a, 3) in which Maya and modern worlds might "contain" one another, with each point of the fractal constellation representing a distinct vantage point. I suggest that from a modern container or lens, it is apparent that

Sotz'il faces constraints in their enactment of adaptation as they conform to dominant structures and framings. From this perspective, it is possible to see Sotz'il's enactment of adaptation as conforming to a dominant techno-managerial definition that obscures Maya onto-epistemology, a process that mirrors the politics of *indio permitido* (Hale 2004). However, I argue that from a standpoint from which the Maya Cosmovision contains even the modern aspects of Sotz'il's work, adaptation is a process of transformation towards an emerging future that is rooted in an ancestral past, a notion that can simultaneously accommodate the dominant rendering of adaptation, while harmonizing with Maya cosmology. Thus, Sotz'il's work enacts adaptation multiply, from frothy edges, embedding it in a Maya conception of time and transformation, while not negating the dominant rendering. Adaptation is a strategic equivocation or a multiple object, and through overlapping meanings and ontologies, bridges the yawning gap between epistemic plural fragmentation and universalizing conceptions and approaches.

6.1 Empirical themes: Sotz'il's Forest Calendar

In the grand scheme of planetary climate change mitigation, it is hard to overstate the importance of forests and the role that Indigenous peoples play in their stewardship. A 2017 study on nature-based climate solutions identified reforestation and conservation (avoiding deforestation) as the first and second most important interventions (respectively) to mitigating climate change while also reducing soil erosion, keeping air and water clean, and fostering biodiversity (Griscom et al. 2017). At the same time, at least a quarter of total land area on the planet is managed or occupied by Indigenous peoples (IPBES 2019, 14), including at least 1.2 billion acres of forest (Hawken 2020), which contain in carbon tons the equivalent of about 29 times the annual emissions of all passenger vehicles worldwide (RRI 2015, 11). Drawdown, a research project that seeks to document solutions with the highest potential for combatting climate change, estimates that securing land tenure for Indigenous peoples could save an estimated 8.69-12.93 gigatons of carbon dioxide that might otherwise be released in the atmosphere via deforestation, fossil fuel extraction, and monocropping (Hawken 2020). Thus, Indigenous knowledges about local biomes and ancestral management practices are highly relevant and potentially impactful in any attempt at enacting large-scale land-based mitigation efforts,

especially if efforts can be made to align with needs such as adaptation, addressing local vulnerabilities, and fostering biodiversity conservation and sustainable livelihoods (Brugnach, Craps, and Dewulf 2017). Indigenous peoples' sovereignty over their lands is a key underlying issue, as local ecosystems are often thickly tied to local subsistence and lifeways (Hawken 2020). Hence, there is a need to find ways to strengthen and diffuse Indigenous knowledge-praxis that helps sustain such ways of life, and to maximize their implementation and impact.

Enter the Forest Calendar, produced by Sotz'il in collaboration with the National Forest Institute of Guatemala (INAB). Starting in 2014, the project team collected and systematized knowledge about traditional forest management through fifteen data collection encounters with Indigenous and rural communities in various regions of Guatemala (INAB 2019, 5). The result is a calendar and a twenty-page user guide, a brief document nonetheless dense with technical content. Its purpose is to synthesize Maya traditional forest management and practices with cycles of time, overlaying seasonal activities with moon cycles, the solar calendar, seasonal weather cycles, and the Gregorian calendar. Forest activities include management activities (e.g., seed collection and germination; planting trees; managing pests; pruning) and use activities (e.g. collecting firewood and wood). A snapshot is included in Appendix IV; the full-sized calendar and user guide can be accessed online, where the calendar is more legible.[42]

The calendar reflects fundamental aspects of Maya ontology such as the way that masculine/feminine complementarities replicate across cosmic scales. Here this complementarity is reflected in masculine and feminine tree cycles, delimited by the Vernal Equinox (March 21), which initiates the feminine cycle, and the Autumnal Equinox (September 21), which initiates the masculine cycle. During the feminine cycle, which overlaps mostly with the rainy season, the tree is flowering and certain forest use activities, like collecting firewood, are limited; this gives the forest an annual respite from human interference and allows it to regenerate itself. Knowledge regarding the moon cycle and its influence on plants is also incorporated. The connection is not astrological or energetic (at least not only such), but is explained biophysically: as the moon waxes (from a new to a full moon), sap and vital nutrients

[42] http://www.inab.gob.gt/documentos/serietecnica/. I encourage you to take a look.

are pulled upward; after the full moon, this process is reversed as liquids are drawn back into plants' roots. Some forest activities correspond to lunar phases based on these principles, and generations of observation and experience. The collection of seeds and firewood, for example, are activities best done when the moon is full and the nutrients of the plant are in the branches, leaves, and fruits; cuttings for plant propagation should be done when the moon is waxing (becoming full), because the sap is moving into the branches (INAB 2019). Such knowledge of moon cycles and their application (in agriculture as well as forest management) is common in Maya communities and backed by generations of empirical experimentation.[43]

I use the calendar to exemplify several aspects of Sotz'il's transmodern approach to adaptation, whilst weaving in other examples of Sotz'il initiatives drawn from interviews. These examples demonstrate an ***integrative*** stance to knowledge-praxis; they show a ***transversal*** method of knowledge-praxis diffusion; they showcase Sotz'il's ***strategic adoption*** of alliances, formats, and processes from non-Indigenous dominant culture to widen recognition for Indigenous knowledges and inclusion of Indigenous actors and perspectives; finally, they represent how Sotz'il's work and enactment of adaptation is culture-based and ***embedded in Maya onto-epistemology***. The categories are derived from Dussel's vision of the trans-modern, a novel affirmation of subaltern identities that arise from the non-modern "exterior" whilst adopting aspects of modernity in their articulation. Where Dussel uses the language of culture, I use the concept of onto-epistemology to relate transmodernity to partial connections and to my analytical framework. This last category is the most foundational, preparing the way for a deeper level of analysis in the discussion in the second half of the chapter, and an exploration of how Maya ontology (in particular, Maya renderings of time, change, and complementarity) supports an integrative, transversal, and strategically transmodern approach.

[43]From my cursory research, knowledge of moon cycles and their application in land management and agriculture is not well-documented or explored from Western scientific traditions, although moon cycles are used by Western farmers from a biodynamic tradition (see van Kraalingen 2019, 47). Given what seems to be a dearth of formal knowledge on the topic, its systematization in the forest calendar is a notable contribution and poses opportunities for further research.

For Dussel, the transmodern must begin with the positive affirmation of one's own cultural values, which have been "partly colonized, but…disdained, negated and ignored, rather than annihilated" by the Eurocentric colonial core (Dussel 2012, 42). The transmodern is epistemologically integrative in that while revitalizing and developing its own traditions of thought, it also critically evaluates (on its own terms) and includes contributions from modern thought. It is transversal in that it provokes intercultural dialogue with cultural critics from other subaltern groups and from the dominant culture, without overlooking power relations. It has persisted from the edges of modernity, always in "furtive contact," both shaped by and shaping it (Ibid., 45):

> Thus, the strict concept of the "trans-modern" attempts to indicate the radical novelty of the irruption—as if emerging out of Nothing—from the transformative exteriority of that which is always Distinct, of universal cultures in the process of growth and that assume the challenges of Modernity, and even of European/North American postmodernity, but which respond from another place, another Location. They respond from the perspective of their own cultural experiences, which are distinct from those of Europeans/North Americans, and therefore have the capacity to respond with solutions that would be absolutely impossible for an exclusively modern culture. A future trans-modern culture, a new age of world history—that assumes the positive moments of Modernity ... will have a rich pluriversity and would be the fruit of an authentic intercultural dialogue, that would need to bear clearly in mind existing asymmetries. ... But a post-colonial and peripheral world like that of India, Africa or Latin America in a position of abysmal asymmetry with respect to the metropolitan core of the colonial era, does not for this reason cease to be a creative nucleus of ancient cultural renewal that is decisively distinct from all of the others, with the capacity to propose novel and necessary answers for the anguishing challenges that the Planet throws upon us at the beginning of the twenty-first century (Dussel 2012, 42–43).

Dussel's vision is that from a position "exterior" to modernity, postcolonial peoples (those who have been "peripheral" in the colonial/modern world system) draw upon the wealth of their ancestral heritages, and the privileged perspective their location

on the edges of modernity provides them to take critical views upon both modernity and their own cultures, in order to produce regenerative and novel contributions to contemporary planetary challenges. The forest calendar is a case in point.

Weaving of Knowledges

First, while the forest calendar foregrounds IK, it also reflects a stance of knowledge mutualism. Knowledge mutualism runs throughout Sotz'il's work: the team views Indigenous knowledge (IK) as complementary to Western scientific technical knowledge. For example, an aim of the calendar was to document IK so that it could be applied with knowledge carried by the National Forest Institute's own technicians; thus, five workshops were given to train INAB's technical personnel on its contents (INAB 2019, 5). Sotz'il's team members themselves have Western technical educations in areas such as environmental engineering, which they draw upon alongside traditional knowledge in their work. Leonel described an example of this epistemological-practical flexibility from a community development project that focused on strengthening Indigenous systems of organization for water management:

> I worked for one year in the western part [of Guatemala], in a community where we constructed thirteen greenhouses, and [people] said, "what is cultural about a greenhouse which is something modern and has nothing cultural [about it]?" And we told them that—well, we didn't say this as much as we [just] worked in this way, right, [so] that they [could] take care of their water. They had a spring, and they had a form of distribution [based on] their traditional knowledge. [This was in] San Luis Sibilá, which is part of Totonicapan. Anyway, they had their allotment of water, and they can't obtain more water, they have a certain amount assigned for a certain number of families. …But there [was] a problem. ... As we've talked about [regarding] climate change, they produced less [crops], there was a lot of drought, sometimes a lot of wind, so they would lose their harvest. So they administered their water well and all that, but they [had] loss...in their form of production. So the greenhouses came to strengthen this group to maintain their mode of water conservation.... Why? Because when one is putting a greenhouse here, it means that they are going to use less water to produce their foods [for the family, and] for sale, so, they will still conserve the same model of water conservation. So it's something new, high-tech, that comes to support the

> cultural. So it doesn't mean that a greenhouse is cultural, but yes, it does help to conserve cultural practices (10/14 6A).

The above passage exemplifies an adaptive stance towards climate change that privileges the maintenance of a Maya cultural world, and draws on modern technical knowledge synthetically in the service of that aim. Many research participants shared the perception that Western scientific knowledge is widely recognized as the gold standard, while IK is often dismissed as "just beliefs" or subjugated to Western modes of verification. Sotz'il seeks to turn this relationship on its head, embedding modern knowledge and technologies in Maya values and ontology.

Transversal Diffusion

Second, an aim of the forest calendar and other Sotz'il initiatives is the documentation, systematization, and transversal diffusion of knowledge-praxis between and among Indigenous (and non-Indigenous) communities and groups. Towards this aim, seventeen training workshops have been given to community organizations to diffuse the knowledge codified in the calendar. Three hundred and thirteen people have participated, including speakers of eleven Maya language groups, and Spanish (INAB 2019, 5). Participants include beneficiaries of PINPEP, a government program providing forestry incentives to smallholders, including caretakers of communal lands under traditional systems of Indigenous organization (see Aguilar-Støen 2018).

Consider the following passage from don Julio:

> [Indigenous people] adapt easily, if their [Indigenous] knowledges are strong. But what happens if their [Indigenous] knowledges are weak, we have to bring them instruments, trainings from here to [there], and it will be hard for them to understand…. So the contribution of Indigenous knowledges to the theme of climate change is adaptation. It facilitates the processes of adaptation that are so effective for [Indigenous people]. Sometimes it is thought that no, Indigenous people don't have knowledge, one must teach them how they should adapt. No. One must teach them to strengthen their knowledges…. This doesn't mean they can't use scientific knowledge. It doesn't imply a pure relationship. No, this doesn't exist now. It's like the person who thinks [he] is blue-

> blooded. That...doesn't exist anymore. But the case is that we should be intercultural, but as much as possible, that Indigenous knowledge may predominate for Indigenous people…. That's the contribution. And since these models are effective, the contribution is to put this model here, and if someone wants to, [they can] replicate it. Or to bring criteria from here, experiences from [there], and to take them to other sites (10/16 6B).

This thick commentary highlights the key role IK plays in strengthening adaptive capacities, while elaborating Sotz'il's approach both to transversal knowledge diffusion and to knowledge mutualism. In their diffusion efforts, Sotz'il trained a community group from San José Poaquil (a municipality of Chimaltenango) on the forest calendar. The group forms a *cofradía*, a Maya model of organization with its roots in Catholicism, to manage their communal lands, ensure conservation, and engage in reforestation efforts. Alfredo, a member of the cofradía, told me:

> [The forest calendar] has helped us a lot. ... This year [we] reforested ... nearly six and a half hectares of forest ... in the Montagua farm, and we proceeded according to the forest calendar. And it was very excellent, ... it says in what phase of the moon one should go plant, in what phase of the moon one should remove weeds, and all of that. ... (Me: Are these knowledges that you all knew before?) Partly, yes. But we didn't put them into practice. Now we are putting them into practice. ... Like, [in Poaquil] it's said in what phase of the moon one should harvest wood for firewood, because our ancestors said that to fell a tree, the moon needs to be full or in its waning half. But one should not fell it during a new or waxing half moon, because [the wood] won't smolder. So yes, we've heard these things, but now with this calendar they gave us, one now has a little bit more knowledge (11/6 6C).

Thus, the forest calendar exemplifies Sotz'il's way of strengthening local knowledges given the reality that while such knowledges are ancestral, they are preserved and applied unevenly across Maya communities.

Strategically (Trans)Modern

Third, the calendar exemplifies Sotz'il's strategic adoption of modern institutional formats and partnerships to maximize recognition and diffusion of traditional knowledge-praxis. For example, the calendar is a partnership with the National

Forest Institute, and the names of international and regional partners printed on the document include German Cooperation and the Fund for the Development of Indigenous Peoples of Latin America and the Caribbean. The calendar is emblematic: on my first day in the office, don Julio handed me a stack of publications by Sotz'il, each one printed largely with the logos of various international funding organizations and civil society alliances. Certificates from USAID-funded organizational development trainings and posters from other collaborative projects decorate Sotz'il's office walls. Such alliances position Sotz'il and the Maya knowledge they represent for greater legitimacy. By presenting the calendar in Spanish and formatting it so that Maya and lunar calendar systems are presented within the Gregorian calendar, Indigenous knowledge is translated to Western formats. Textualizing Indigenous knowledges in itself is a way of presenting it for recognition within dominant culture, as Western culture privileges sight as the sense for obtaining information (Wainwright and Russell 2010).

Sotz'il's engagement in national and international climate processes also demonstrates their aim of fostering inclusion of Indigenous actors and perspectives in dominant institutional spaces. Leonel explained how Sotz'il and others had advocated and gained inclusion for Indigenous voices in the process of formulating and approving Guatemala's Climate Change Action Plan, *Plan de Acción Nacional de Cambio Climático* (PANCC), which was approved on September 5, 2013 (IUCN 2013). Through the *Mesa Indígena para el Cambio Climático* (Indigenous Table for Climate Change), Sotz'il participated directly in formulating the law, helped include other Indigenous actors, and socialized the law among other Indigenous groups before its approval. Sotz'il has also participated in spaces created to promote Indigenous participation within the UN Climate Change Conference (COP), and in the UN Convention on Biological Diversity. They've also participated in processes related to REDD+, an international scheme for incentivizing reforestation and forest conservation practices, which has been controversial among Indigenous stakeholders (Aguilar-Støen 2017, 97–98). Given criticism they've received from other Indigenous groups, don Julio shared the perspective that Sotz'il is neither in favor nor against REDD+, but sees itself as serving the beneficial role of helping to define safeguards to protect the rights of Indigenous peoples within Guatemala who choose to participate; they also seek to educate community groups about the program, so

they can make informed decisions whether to participate (Julio 10/16). Their decision to participate as a facilitator is reflective of Sotz'il's broader strategy and approach to change. Leonel encapsulated it when, in describing how they seek inclusion and representation in national processes, he told me, "we don't go and fight with the government, we go and propose."[44] Sotz'il does not seek to disrupt or replace dominant spaces where modernity reigns, they seek to utilize existing mechanisms of modern institutions and put them in the service of bolstering rights and inclusion for Indigenous peoples and promoting Maya pathways for development, conservation, and adaptation.

Sotz'il members are like Dussel's "critical intellectual" who "should be someone located 'between'… the two cultures (their own culture and Modern culture). This is really the issue of the 'border' (the 'frontier') between two cultures as a locus for 'critical thought'" (Dussel 2012, 47). Yet Sotz'il colleagues do not just confine themselves to the edge spaces of modernity, but find themselves moving between worlds—in the communities, at the national level, and in international spaces, between different values, epistemes, and world-configurations. In the partial connections between worlds are frothy edges and spaces of dialogue. In moving between these worlds, Sotz'il members draw upon and create overlap among multiple worlds and multiple ways of knowing. Sotz'il members perform fire ceremonies to express gratitude to their ancestors and to seek guidance on navigating their own organizational journey; they advocate for language that is inclusive of Indigenous peoples in national policy; they speak in one breath of natural resources and in another of the *k'ux* or life-essence of all elements. They conceive of climate change through multiple frames and discourses—as a problem of excess carbon through the language of Earth System science, and as a symptom of lack of attentive reverence to a living, sacred Mother Earth. Sotz'il is amodern in the aspects of its work and world that lie beyond modernity's ontological limits, and yet very much occupies, is shaped by, and contributes to shaping modern political and discursive spaces.

[44] "*No vamos y peleamos con el gobierno, sino, vamos y le proponemos*" (11/6).

Onto-epistemologically Embedded

Finally, the forest calendar epitomizes Sotz'il's orientation towards positively affirming and valorizing Maya cultural traditions and knowledge-praxis. As Leonel put it when I asked him what sets them apart, "[Our] projects have to take up the [Indigenous] cultural component, … we can't leave that theme out. We don't work on just adaptation, or just mitigation…[our projects] have to take up traditional knowledges."[45] While framed in the language of culture, I suggest that this is also a matter of Sotz'il's work emerging from Maya onto-epistemology, the Maya Cosmovision. The calendar is embedded in Maya knowledge-praxis (what to do when and how in the forest), Maya ontology (cycles of time and space as reflected in the calendar), and Maya values of respect and care for all forms of life. Tata Pedro explained,

> Maya science, the Maya Cosmovision, Maya knowledge, corresponds to a natural order. Returning to the forest calendar, the forest has its own dynamic. The forest has its cycles. According to this investigation [conducted to develop the forest calendar], in the rural area of the west [in Guatemala], they don't see it as equinoxes and solstices, the movement of the sun, they see it through the forest, as masculine and feminine cycles. When the trees are maturing and drop seeds, that's when the feminine cycle begins. One must not enter the forest because one crushes the seed, and it atrophies. … One must not enter when it germinates…, they are very small plants, we don't manage to differentiate between common ground cover and little trees, and we crush them. So, it's almost a sacred space. [The people] respect. …Then comes the masculine cycle which began just now, the twenty-first of September, [and] finishes the twenty-first of March. Then we can enter. Why? Because the plant is already a little bigger. Now we can say, "That's a little tree, don't smash it." So, now the forest can be utilized—wood, firewood, all that is [provided by the forest]. …So, these are norms that are respected (11/8 6D).

[45] "*Siempre los proyectos tienen que llevar el componente cultural Indígena, no podemos omitir ese tema. Solo adaptación no trabajamos. O solo mitigación, no trabajamos. Tiene que llevar los conocimientos tradicionales*" (10/14).

The forest calendar also relates to a rendering of adaptation that relates to the Maya Cosmovision in the way in which ancestral knowledge is a resource in responding productively to present circumstances and to prepare for the future. This adaptation is embedded in Maya historicity and a Maya understanding of time and the complementarity of continuity and change. Don Julio explained how Maya people have a long history of adapting in relationship with other elements of their environments over time—mentioning how, for example, they have also adapted their seeds to environmental changes. He related an anecdote from a Kaqchikel elder who taught how native seeds carry the memories of thousands of years of climatic variations—the seeds' ancestors have survived cold weather, hot weather, rainy seasons and drought, and the native seed—in contrast to the genetically-modified one—carries adaptive capacities. Moreover, the seed has a relationship with the human beings who have cultivated it across generations of human and plant procreation and propagation. And likewise, those humans carry memories that strengthen their adaptive capacities—if they are able to keep that knowledge alive. As don Julio explained in the passage quoted on pages 87-88, where Indigenous knowledge has been conserved, people are more able to adapt to environmental changes in their ways of managing the elements in their territory. Don Bayron, Sotz'il's director, put it concisely when speaking to the role of the Maya calendar in climate change adaptation: "to plan the future, we have to look to the past."[46]

Tata Benicio sums up how Maya adaptation reflects this history of responsive endurance, referencing the collapse of Maya city-states like Tikal during the Classic period:

> If there's a persistence in our way of seeing things, it's because at the end of the day, we are a people that has had a vast historical trajectory, it's made it so that [the Maya people] have experience in the world, not just as the experience of a specific group, but as *adaptation in the world*. For example, why was it that Tikal and all those places disappeared? It's supposed that it had to do with a change in climate from that time. So what happened? [The people] had to immigrate, to die, to move, to displace themselves to other spaces, but afterwards, they returned, or they

[46] "*Para planificar el futuro, tenemos que ver el pasado*" (10/25).

> [stayed] in the other spaces. But we've always invoked, and from this we still have all the knowledge that we still work with in this moment. So we are an authentic people, we are a people that have their own specialty, their own form of looking at life…and we also have our own proposals for how to mitigate and adapt to climate change. (6E 10/29, emphasis added)

Maya adaptation implies that knowledge and realities evolve and change, and that one must remain responsive to the changing present while preserving the lessons of the past. Don Edwin, a founding member of Sotz'il who serves on the Board of Directors, explained this idea through the Kaqchikel concept of *kab'awil:*

> There is a principle in Maya culture, which is kab'awil, that all of reality should be seen from different angles. Not just from one side. The *Popol Vuh* says that one should not look only ahead, but also behind and to the sides. This means that all of reality is in flux. …The truth is the reflection of reality, but each individual has a different reality according to their moment [in time] and their [location in] space. This is the principle of not being static, but somewhat flexible, so that the new may substitute the old—but with a relationship of continuity. This is the principle of double vision (6F 11/18).

Kab'awil reveals much more than a Maya notion of continuity and change. Don Edwin relates the principle deftly across domains that seem distinct: the relationship between perspectives and realities (or epistemologies and ontologies) is like the relationship between past and future and the contingent, changing nature of reality. Don Julio explained that the term conveys the idea of co-emergent dualities: archetypal poles of existence that replicate throughout space and time: day and night, life and death, masculine and feminine, good and evil, ontologies and epistemologies, and past and future co-exist in relationships of complementarities.[47] As I will return to later on in this chapter, the principle of double vision provides the basis for a deeper understanding of Sotz'il's enactment of adaptation, and how it manages to cohere with dominant definitions from a resolutely Maya starting point.

[47] Don Julio 4/2/21, personal communication—the examples are mine.

6.2 Discussion: An Intra-Ontological Exploration of Adaptation

I have framed the forest calendar as an empirical elaboration of Sotz'il's transmodern approach to climate change adaptation. In this discussion, I relate this transmodern configuring of adaptation to scholarly conversations on knowledge integration and ontological pluralism. As described in section 3.2, the onto-epistemological framing employed for this analysis conceives of transmodernity as an edge space of overlapping partially connected worlds, a frothy place of intra-ontological generativity. Here, I elaborate a tension between singular and plural renderings of adaptation, and the challenge of coordinating multiplicity. Then, I engage two ways of tracing the overlap of partial connections. First, I look at the situation from the perspective of indigeneity being "contained" (and constrained) by modern processes and politics, relating these constraints to the concept of *indio permitido* (Hale 2004), which references the tensions and limitations faced by Indigenous actors operating within the spaces of national and transnational participation which they have opened for themselves in multicultural and neoliberal environment. From this vantage point, it is revealed how neoliberal structural realities have constrained Sotz'il's possibilities for climate change adaptation and obscure the aspects of their worldmaking that lie outside the domain of reasonable politics. Yet, while it is necessary to critique dominant approaches for what they conceal, the work remains to reveal and include those concealments. To this end, I flip the arrangement of the configuration, bringing attention to a perspective that might be easy to overlook. I suggest that from a Maya standpoint, Sotz'il's enactment is not solely a matter of negotiating trade-offs, but a manifestation of adaptation from a Maya cosmology of transformation, understood via the principle of *kab'awil* or double vision. From here, adaptation is rendered in a way that is able to cohere with universalizing singular conceptions without precluding its onto-epistemic underpinnings. A fruitful possibility is glimpsed of a higher-order cosmopolitics—one that is able to make use of global processes and framings while retaining space for divergences, contingencies, and multiplicities.

A Cosmopolitics of Plurality and the Problem of Global Coordination

Climate research engages in the ongoing process of composing a common world. Dominant research methods tend to enact a world that is singular, Euclidian, and of global scale, one in which "entities of different sizes [are] contained within discrete and very often homogenous social spaces" (Law and Urry 2004, 398). In her ethnography at a meeting of scientists and policy makers, Anna Tsing gains insight into how this plays out among climate modelers. "*The global scale takes precedence*," Tsing discovers, "*because it is the scale of the model*" (2005, 103; emphasis in original). Modelers debate how to nest data reflecting the local scale within global models, proposing a myriad of strategies for dealing with problems of scale, but always from the assumption that smaller scales should fit neatly inside the larger models without posing any issues of compatibility (Ibid., 104).

A singular, universal notion of adaptation based on this singular enactment of climate change at the global scale, has a way of concealing a multiplicity of human knowledges and experiences—and the ways these multiplicities can clash and diverge. Goldman, Turner, and Daly (2017) describe how the *plurality* of common terms like adaptation, resilience, and vulnerability from the human dimensions of climate change literature, is glossed as the words travel across various social sites, becoming cracks of epistemic fragmentation, and creating a "gap" between the generalized, abstract, and malleable concepts and the multiple and sometimes contradictory ways in which climate change and is experienced locally (Ibid., 5). Like climate change, adaptation is a fluid object which shifts shape and meaning as it travels, a boundary object which facilitates acceptance across actors with divergent interpretations (Ibid., 4), and an ontologically multiple object which emerges in relationship with different ways of experiencing and making meaning of it (Esbjörn-Hargens 2010).

Given this situation, among critical scholars contributing to human dimensions of climate change research, there is increasing attention towards the ontological politics of adaptation, and the need to acknowledge a plurality of framings, reflecting diverse experiences and of worldmaking practices (S. Eriksen et al. 2021; Goldman, Turner, and Daly 2018; Klenk et al. 2017; Nightingale et al. 2020). At the same time, questions and tensions remain regarding how to align and coordinate local

experiences and Indigenous knowledges with the dominant biophysical sciences—particularly when said experiences contradict data from scientific modeling (e.g. Klenk et al. 2017, 9). While calls for plurality seek to rectify the ways that dominant framings of climate change and adaptation often conceal the politics of climate knowledge production, they may fail to articulate clear alternatives for utilizing existing political machinery to facilitate global, coordinated responses, and to cohere a multiplicity of actors with distinct goals, experiences, and perspectives (Carolan 2004). In her ethnography, Tsing discovers that climate modelers carry a policy-driven agenda to "bring diplomats to the negotiating table" (Ibid., 105), to galvanize policy makers towards developing "global standards and structures of management [to] promote survival" (Ibid., 103). While the model conceals divergent interests and perspectives, it also carries forth the aspiration to coordinate multiplicity in the interest of unified, planetary efforts. Carolan (2004) contends that complex, ontologically multiple environmental conflicts need not require fragmentation. In the presence of social bridges built on trust, multiplicity can be drawn into coordinated coherence.

Climate change is more than one and less than many. Or, it might just as soon be said that it is both one and many: the multiple object can include the singular enactment (Esbjörn-Hargens 2010, 149). Singular, universalizing notions are inherently reductive of complex objects like climate change and adaptation—yet they can serve a strategic purpose, in certain instances, towards coordinating complexity and diversity, productively. The aspiration to open possible enactments both for singularity and multiplicity echoes the conversation on cosmopolitics from chapter four, a conversation in which we are asked to pause a moment, to slow down reasoning in order to clearly take stock of the deeper ontological differences at play before composing a common world. Following Carolan (2004), I contend that the global ramifications of climate change demand that compose a common world we must. Yet the path forward presents numerous tensions and questions. I seek to present a surprising empirical discovery that indicates one generative possibility: that in the case of Sotz'il's work and the forest calendar, conceptually locating the dominant modern framing of "adaptation" *within* a Maya container helps cohere its multiple renderings. First, I illustrate the tensions between clashes of scale and of ontologies through Sotz'il's work, framing this critical perspective in relation to my

analytical framework as a way of looking that views the Maya enactment of adaptation as "contained"—and constrained—by modernity. The story of the forest calendar and Sotz'il's enactment of adaptation would be incomplete without this critical perspective. Yet I contend that while this perspective is valid, it conceals realities that are revealed by looking the other way around, a view that might be easy to overlook. In this case, a *productive vector* (in the language of Blaser 2016, 565) is found not in submitting Maya adaptation to a Western scientific benchmark, but on the contrary, in situating modern adaptation within a Maya cosmology of transformation.

When Modernity Contains the Maya: Adaptation within Limitations, Negotiations, and Constraints

First, I would like to look at Sotz'il's way of enacting transmodern adaptation via the forest calendar and other initiatives, in a way that foregrounds the constraints which Sotz'il navigates while engaging in dominant national and international climate processes and discourses. In this section, I apply an imaginary of local, national, and international scales to describe how the constraining dynamics of *indio permitido* are at play in Sotz'il's work. These scales are conceived of as nested, in alignment with the singular ontology described in the former section. As Tsing notes, "The globe is a node for the expression of universal logic. Scale-making, in turn, is a foundational move in establishing the neutrality and universalism of Nature; only if observations are compatible and collapsible across scales can they be properly described by a universal logic." (A. L. Tsing 2005, 88). Thus, in this section I deliberately build upon the working assumptions of naturalism, an analysis in which the Maya is contained by modernity. While limited, the notion of nested scales is helpful here. In the next section, I will turn the configuration on its head.

As mentioned, transnational climate processes have advanced a universalizing and depoliticized definition of adaptation, elaborated by the IPCC as "the process of adjustment to actual or expected climate and its effects" (2014, 118). Much of Sotz'il's way of speaking of their work in climate change adaptation aligns with this at once narrow and generalizing rendering of adaptation. When I asked what they consider to be the contribution of Maya knowledge to climate change adaptation, Sotz'il members emphasized ancestral techniques such as observing signals from

nature like cloud formations, lunar movements, and animal behaviors, to help prognosticate weather-related disasters; and traditional agricultural practices such as seed selection, biological pest control, and soil conservation practices. These are also the Indigenous contributions to climate change adaptation that Sotz'il highlights in the chapter on Indigenous knowledge (Batzín 2019) which they contributed to the Universidad de la Valle Guatemala's first report on the Evaluation of Knowledge about Climate Change in Guatemala, a document which was an input to the IPCC (Julio 10/16).

Critiques abound of a common, narrow rendering of adaptation that aims to be one-size-fits-all, depoliticized, and technical, occluding context-based approaches and an ethics aware of asymmetries (S. Eriksen et al. 2021; Goldman, Turner, and Daly 2018; Klenk et al. 2017; Nightingale et al. 2020). The IPCC definition emphasizes adjustments to climate change while neglecting to call into question the reasons for it—from broader political structures that exacerbate vulnerabilities (S. Eriksen et al. 2021), to the deeper values and beliefs that underpin these structures (O'Brien 2012). Techno-managerial adaptation can also lead towards approaches to knowledge integration that are "extractive" in the sense that they disembed IKs from their onto-epistemic contexts in order to fit coherently within the dominant knowledge regime (Klenk et al. 2017). Sotz'il's emphasis on technical contributions from ancestral knowledge may thereby obscure a great deal of the deeper significance of these practices, while leaving unchallenged political realities that maintain Maya people in positions of high vulnerability to climate change (see S. Eriksen et al. 2021).

One might draw a parallel between the constraints that cause Sotz'il to adhere to a narrow and depoliticized rendering of adaptation, with the limits imposed by dominant development processes (S. Eriksen et al. 2021). Charles Hale's (2004) concept of *indio permitido* or "authorized Indian" denotes the spaces and roles which a multicultural state and international funding organizations will tolerate for Indigenous actors, and highlights how a neoliberal political environment has simultaneously created space for Indigenous organizing under the banner of multiculturalism, while curbing more radical forms of activism. In an ethnography concerning another Maya organization in Guatemala, *El Centro Pluricultural,* Tim Macneill shows how dynamics of *indio permitido* are at play in the ways that

international funding mechanisms and discourses enable the organization's work at cultural revitalization, whilst precluding any participation in direct political activism that would challenge dominant politico-economic structures (2014). Similarly, Sotz'il leverages international funding mechanisms and discourses that promote Indigenous rights in their work, whilst working within established national and transnational processes. The forest calendar, which represents a multi-level project with international funding, a partnership with the National Forest Institute, and local-level data generation and diffusion, is presented in a depoliticized way that conforms to said constraints. Its existence and diffusion do not, for example, challenge patterns of highly unequal land ownership in Guatemala, nor do they address how land grabs by wealthy actors threaten Indigenous land sovereignty (Aguilar-Støen 2016).

To begin with, the constraints of *indio permitido* illuminate the challenges faced by Sotz'il members as Indigenous representatives in national and international climate processes. In national spaces, a perceived conflict between an overriding national identity and Indigenous representation within the state (Friedman 1999) is used to conceal Indigenous concerns. Don Julio observes:

> From my understanding … in the [national] spaces I've been in … they facilitate some spaces for us, but it's not that they appreciate us. They don't *want* us to be in these spaces; they see us as…a necessary evil. …Because often in national spaces, all of a sudden a document will appear. …[*exemplifying a dialogue:*]
> "We're going to present this document," and so on. … So the question is: "And where are the Indigenous [people] there?"
> "No, because in Guatemala, we are all Guatemalan, so everyone is reflected here." *What do you mean everyone?*
> "But here Western culture predominates."
> "Yes, but why differentiate them?...this is why we are divided; we have to create unity."
> So there are arguments. …Out of ten situations…I would say maximum [there will be] one case in which they included something about Indigenous [people]. …In the documents, in a section…where they put "context," …they can start by saying, Guatemala is a pluricultural country, which has so many people and so many languages, etc. … but no, it doesn't happen.

> …Almost every time we make…the same observations…: that they don't include the pluricultural nature of Guatemala, that they don't include Indigenous knowledges, or that they forget about Indigenous languages, or that they take information to certain areas…but forget that they have to translate or that they have to look for mechanisms to guarantee participation. And sometimes, in the documents appears: develop this "with cultural pertinence." And that's it, like we took care of the Indigenous [people], …and [they] leave it at that. This is what I've seen (6G 10/16).

This passage is reflective of a nationally prevalent ideology of assimilation in which Maya culture is viewed as "backward" and must be abandoned by Indigenous people to become modern and enjoy success (e.g., Rodriguez Guaján 1996, 77)—specifically, showing how such ideologies are leveraged to conceal the majority Indigenous presence in Guatemala. Such ideas are not only discursive, but reflect in tactics as well. For example, as part of the *Mesa Indígena de Cambio Climático,* Sotz'il also participated in an environmental impact report for the incoming presidential administration of 2016. Don Julio describes how the Indigenous representatives were divided amongst the working groups, and that their proposals ended up "diluted" among all of the themes of the report. "*Pasa a menudo*," he added: "This happens often" (10/16).

Present for don Julio have also been the more subtle indignities and discomforts of encountering deeply-engrained racialized attitudes. He shared at length regarding the exclusionary treatment Sotz'il members receive among Ladino Guatemalans in such spaces, reflecting on his discomfort at feeling unwanted and at what he described as paternalistic treatment, saying, "sometimes they look at one like a young child."[48] He offers this example:

> There's another character there that thinks he is of a very high level; he is Ladino. …He takes the liberty of criticizing those who come. "Look, please, if you're going to send me Indigenous representatives, don't send me so-and-so. …no, send me that one," at his whim. …he's done it in public, and it's *bad.* …There are people like that. We go to the [rural] regions, and we're like fish in

[48] "a veces lo ven a uno como niño menor" (Ibid).

> the sea, because [we're among] our own people, …but when we go to the capital, one feels a lot more…this environment, in which … they look at one like …like, something *folkloric*, I don't know how to say it. … The exclusion always exists (6H 10/16).

Such dynamics do not reflect clear-cut racial divisions: don Julio mentions Ladinos who are supportive of their participation, as well as other Indigenous people who avoid the topic and seek to assimilate. Yet racist and exclusionary treatment exists, and although not easily mapped in political analyses, it creates dynamics which are no doubt consequential in curbing Indigenous aspirations for political involvement.

Don Julio describes the environment in international climate processes as more supportive of participation, but constrained in different ways. He mentions that ILO Convention No. 169 and global Indigenous movements have bolstered Indigenous involvement, especially in spaces dedicated to climate change and biodiversity. However, in gatherings like the COP, mechanisms for decision-making are highly formalized, and Sotz'il members are often relegated to symposiums that are reserved for dialogues among Indigenous representatives but do not hold decision-making power. When they are invited to participate in the official delegations, they are explicitly directed by other Guatemalan representatives to conform to predetermined narratives—their only recurse to influence the discourse in such spaces is by negotiating with delegates prior to official dialogues to try to convince them to include minor aspects of their proposals, or specific language. Again evoking the indignities of their position, don Julio described pointedly, "they muzzle us" (10/16).

The nature of their unique positionality and transmodern approach to change also places Sotz'il in a position in which tensions in relationship with other Maya perspectives and approaches can arise. While Franklin saw Sotz'il's participation in the first evaluation report as a noteworthy achievement for bolstering recognition for the role of IKs in combatting climate change, he cited as a challenge that some communities wish not to share their knowledges. Referencing their process of collecting information for the chapter they authored, he mentioned that, "some

community organizations don't much like that Sotz'il takes these type of actions."[49] As mentioned, Sotz'il has also received criticism from other Indigenous groups for their participation in REDD+ (Julio 10/16). Divergent interests among Maya are to be expected, but also evoke the observation that some scholars have made, that the space for Indigenous participation opened by multiculturalism is a force of fragmentation. Hale comments that neoliberal reforms "empower some while marginalizing the majority," and Friedman describes that the acceleration of globalization has "led to the formation of global elite representatives of various groups" which he depicts as "implicated in a field of tension, between their very rooted places of origin and the inordinate power of global funds to incorporate them into the global cocktail circuit." Sotz'il navigates this space of ambiguity in which, as representatives of the Maya who are immersed in translocal institutional processes, their positionality is distinct from that of the Maya majority. This critique of non-representativity has also been leveled against the Maya movement for its leadership by Maya intellectuals, urbanites, and Maya who work closely with tourists—by those who, like Sotz'il, occupy edges (Bastos 2012). Yet, these arguments should not imply problematically that Sotz'il members are not "authentic" Maya representatives (see Li 2000). This would be an exclusionary and self-defeating claim, as any Maya representative would automatically be made illegitimate by the very nature of their participation. Furthermore, the assertion ironically echoes essentialist ideas of identity, charges of which have often accompanied such critiques (e.g. McNeish 2008). These observations also should not obscure Sotz'il's commitment to empowering community organizations, their work facilitating space for other Indigenous representatives, and their role as conduits of information both from and to community-based groups; nor should it call into question the basis of Sotz'il's work in Maya onto-epistemology. They only depict the complexities that color the frothy territory which Sotz'il members navigate.

Furthermore, while all of the aforementioned constraints and ambiguities of Sotz'il's position are real enough, Sotz'il has made achievements through persistent efforts and negotiations. John-Andrew McNeish argues that the constraints imposed upon

[49] "*Algunas organizaciones comunitarias no les parece mucho que Sotz'il haga este tipo de acciones*" (10/16).

the *indio permitido* as articulated by Hale are not the end of the story, pointing to the ways that novel strategies and organizing propelled at the local level have placed pressure on the Guatemalan government to more meaningfully account for popular and Indigenous concerns regarding the impacts of neoliberal policies (2008). Much like *El Centro Pluricultural,* Sotz'il facilitates activism indirectly via their work strengthening a network of local organizations, some of which are engaged in their own political struggles at the grassroots level. The *cofradía* from Poaquil is a case in point: Sotz'il worked with the group to support them in reforestation, but also accompanied them during phases of their decade-long legal battle to reclaim communal land rights, a struggle for the title to the land which they engaged with against both the Catholic church and their own municipal government, whom the cofradía feared would sell licenses to deforest the land (Guillermo 11/6). The struggle culminated in the constitutional court, where the cofradía as community representative was finally affirmed legal rights to the land (Kemp 2016).[50] Such examples—easy to overlook because they are not direct impacts of Sotz'il's work, but rather, unfoldings within their larger networks, point to the way that Sotz'il's work across multiple scales, along with other efforts among Indigenous civil society, might add up to be a force more challenging to the neoliberal environment which bolsters techno-managerial depoliticized adaptation approaches while enabling Indigenous land dispossession and deforestation, than immediately meets the eye.

What's more, Sotz'il cites achievements at the national and international level. In the context of talking about the COP and other international spaces, don Julio mentioned, "It's been a challenge,…we've been able to advocate for certain proposals, but it's not that easy. It might just be a word or two, or a [single] idea that makes it."[51] Persistent efforts resulted in the inclusion of a community consultation process and a map of actors that includes Indigenous groups in Guatemala's REDD+ Readiness Preparation Proposal. Sotz'il provided leadership as part of the *Mesa Indígena de Cambio Climático* and were able to include certain "Indigenous themes"

[50] The original legal complaint from 2006 is published online: https://movimientos.org/es/cloc/show_text.php3%3Fkey%3D7751.

[51] "*Ha sido un reto, pero en algun momento, se ha logrado... incidir en algunas propuestas, pero no es tan fácil. Puede que sea una palabra, dos palabras, una idea, nada más dentro de las propuestas*" (10/16).

in the national Climate Change Action Plan (PANCC), leading a process to socialize the law for approval among Indigenous groups before its approval (10/14 Leonel). Don Julio credits a combination of pressure from above (international agreements and requirements like the World Bank's policy for Indigenous inclusion) and below (persistent advocacy by Sotz'il and other Indigenous groups); their director's willingness to rub shoulders and negotiate with people in positions of power; and the support and consideration of certain allies at the national level, such as the professor who invited them to contribute to the report on the Evaluation of Knowledge about Climate Change in Guatemala. And of course, international funding resources Sotz'il's work at all levels.

I would suggest, therefore, that the hybridity and ambiguity in which Sotz'il operates allows them to exercise a type of agency that is uniquely enabled by their constant position in a liminal state.[52] This is once again a case of generativity at the frothy edges, where Sotz'il has access through the partial connections to influence multiple spaces and to utilize multiple modes of operating. What is happening therefore might be described as a coordinating of forces across divergent scales towards change in the arenas where it is most possible. Internationally, Sotz'il's role is mainly discursive; they contribute to the global dialogue on Indigenous rights and knowledges and its effects on monetary flows (see MacNeill 2014). Nationally, Sotz'il leverages the synergies between international and Maya discourses to put pressure on the state to grant certain inclusions. These wins are also mostly discursive, like the language which the *Mesa Indigena de Cambio Climatico* was able to add to Guatemala's Climate Change Action Plan. However, they should not be discounted. By increasing the gap between Guatemala's discourse and its conduct towards Indigenous peoples and knowledges, issues of concern to the Maya are legitimized, arguably making it more difficult for the state to conceal them.

However, to more deeply understand the possibilities that Sotz'il's work evokes, it is necessary now to shift the vantage point on this discussion. As in the case of the Guardian, what is concealed by all of the above constraints is ontological as well as political, narrowing Sotz'il's (discursive and applied) enactment of adaptation in such spaces through the constraints of the *indio permitido*. Yet, the openings that

[52] My gratitude to Mariel Cristina Aguilar-Støen for this observation.

Sotz'il advances are also potentially ontological. Whereas dominant processes and discourses obscure dimensions of Maya ontology that exceed modern conceptions of the reasonable and the real, that which exceeds the modern is not stripped from Sotz'il's work—it only remains invisible to those who would not see it. Imagine the hypothetical case of an environmental engineer from the National Forest Institute, who might learn and apply the technical knowledge from the forest calendar without seeing its reflection of an ontology in which the forest is alive. It is tempting to frame Sotz'il's willingness to adopt modern technologies, discourses, and processes, as being in conflict with Maya onto-epistemology, as a trade-off that is perhaps strategic for the larger aim of cultural revitalization, but nonetheless a form of compromise. While this interpretation is not wholly wrong, I would suggest it is limited. From another standpoint, Sotz'il's treatment of climate change adaptation is able to conform to dominant conceptions and constraints—and to exceed them.

When the Maya Contains Modernity: Adaptation in a Cosmology of Transformation

From the perspective of the Maya Cosmovision, Sotz'il's vision of adaptation can accommodate the technical definition posed by the IPCC, yet is simultaneously enacted from Maya onto-epistemology. As Tata Benicio expressed in the statement quoted on pages 92-93, Maya adaptation derives from a social identity that is rooted in Maya history, which can be narrated as one in which the Maya have endured and persisted through multiple apocalypses—from the collapse of the Classical Maya, to the Spanish invasion, to the state-sponsored genocide. Throughout all these ruptures and dispossessions, the Maya have persisted, transforming themselves and their societies in response to changing circumstances (Chivalán Carrillo and Posocco 2020; Viveiros de Castro and Danowski 2018). Behind the narrative of Maya endurance is a view of time in which the present is characterized by both continuity and change, in complementary relationship. In this section, I underline the Principle of Double Vision, *kab'awil*—a pattern of complementarity that unfolds throughout the analogical matrix of the Maya cosmos—as a concept to help understand Sotz'il's transmodern enactment of adaptation. Meaning "Double vision" or "Double gaze," kab'awil is a Maya civilizational concept whose meanings have traveled and shape-shifted across time and space since as early as the preclassic period (Chacón 2018). Gloria Elizabeth Chacón (Ibid.) depicts it as a multivalent term that in its many

guises connects society with the cosmos. As it pervades time, kab'awil describes a world in a constant process of transformation, in which the future emerges from a generative present that is deeply rooted in the past, thus providing the basis for a transformative rendering of adaptation. In relationship to perspective-taking, it invites an integrative or multiplying stance in which indigeneity and modernity are brought more clearly into an intimate and entangled relationship, exemplified by Sotz'il members' capacities to dwell in overlapping edges. The Principle of Double Vision also underlies the entanglement of ontology and epistemology, and other inextricable and complementary relations, providing a glimpse at an alternative to the Western forms of duality that underpin modernity. From an edge space of duplication that includes both the Maya Cosmovision and a modern rendering, Sotz'il enacts adaptation as a multiple object or a strategic equivocation, thereby dwelling in the creative tension at the site of onto-epistemic fragmentation, enacting a synthesis that for most intents and purposes is made to cohere.

As don Edwin described it (reference page 93), *kab'awil* describes a universe in flux and calls for the responsiveness and flexibility to substitute the new for the old in a relationship of continuity. His statement illuminates Sotz'il's enactment of adaptation vis á vis Maya time, rendered as cyclical and enmeshed, the warp of the cosmic tapestry. Carlsen and Prechtel (1991) suggest that for the Tz'utujil Maya of Santiago, Atitlán, a central religious nexus is transformation and the regeneration of life—a theme depicted as *Jalox-K'exoj*, a tree or maize plant at the center of the world. The authors trace this icon and its symbolism to the Maya Classic period at the site of Palenque in Mexico and to the Popol Vuh, an ancient K'iche' Maya text. They show how Jalox-K'exoj "provided a mechanism to integrate intrusive elements into Atiteco culture, converting them to a form acceptable to the local Maya population." This central concept, the authors suggest, has instilled Maya social systems with adaptive capacities, and helps explain both the incorporation of certain post-invasion (Catholic) elements and imagery, and the refusal of the Maya to cooperate in the "imposition of cultural amnesia" (Ibid., 39). Fischer (1999) draws on contemporary ethnographic work in Kaqchikel communities to depict a Maya paradigm in which the individual is bound to the vitalistic forces of the cosmos through the *k'ux*, which, like the Jalox-K'exoj is associated with the axis mundi. This paradigm, Fischer suggests, is an underlying framework of continuity that

nevertheless has accommodated change over time. Likewise, Lucero (2018) shows how ancient Maya practices focused on the renewal of the world via a cyclical, spiral view of time that connected past, present, and future.

Seen from this conception of time, the millennial knowledge-praxis of the Maya are a resource for adaptation. Like native seeds (see page 92), they carry the lessons of history not as static ways of being in an unchanging landscape, but as a constant renegotiation of the human role within a dynamic field of relations (e.g. Lucero 2018). Kab'awil is a decolonizing concept, not only because of its basis in Maya epistemology, but because by asserting continuity, it resists assimilationist ideologies based on notions of progress as conceived within linear time, which seek to create a rupture between the living Maya and their past (Chacón 2018, 18). Yet simultaneous to its insistence on continuity with the past, is the imperative for renewal and transformation. Change is incessant, as life manifests itself in every moment in time and in every location in space.[53] The cosmic system, including time itself, is maintained via knowledge-praxis that promotes the regenerativity of the entire emergent gestalt (Prechtel and Carlsen 1988, 123), provoking creative response to ruptures and intrusions. An understanding of time that includes both continuity and change, then, can help frame Sotz'il's transmodern adaptation, and their incorporation of modern discourse, technology, and institutional formats within their onto-epistemologically embedded approach.

The concept as it is articulated by don Edwin also relates to the perspectival flexibility that is characteristic of a transmodern approach to adaptation (see also Gram-Hanssen 2019). It implies that distinct perspectives correlate to distinct overlapping and dynamic but entangled realities, like the relationship between ontology and epistemology that is sketched by Maya enactivism. In Maya ontology the position of one's perspective is seen primarily via coordinates in time and space. One's embodied standpoint is partial, and both realities and perspectives, ontologies and epistemologies, are contingent and evolving. This understanding of situatedness (D. Haraway 1988) brings forth a greater appreciation for perspectival flexibility, especially in relationship to the liminality of Maya positions and perspectives. Writes

[53] "*En cada instante del tiempo, en cada espacio del Universo, la vida brota incesantemente*"— "In each instant in time, in every space of the universe, life sprouts incessantly" (Cochoy Alva 2006, 52).

Chacon, “Like [W. E. B. Du Bois’s] double consciousness, border thinking, interstitial spaces, and *nepantla* among other theoretical concepts that name in-betweenness, kab’awil facilitates multiple negotiations” (Chacón 2018, 20). These comparisons may strike one as particularly post-modern (feminist, deconstructionist, or postcolonial), for this is a case of kab’awil applying recursively as an evolutionary concept to its own unfolding, to do the critical and conceptual work of creating decolonizing possibilities given the position of the Maya in relationship to contemporary forms of dispossession wrought by the progressively unfolding forces of coloniality (Ibid., 14; Chivalán Carrillo and Posocco 2020).

However, the nature of past and future is not the sole object of our attention, nor the nature of ontologies (realities) and epistemologies (perspectives), but, more fundamentally, the *relationship of complementarity* between these and other foundational poles of existence. This relationship arises from an analogical ontology, radiating fractally across the manifest dimensions of the Maya cosmos. Many of the ontological scholars have concerned themselves with the transcendence of modern dualisms (see Escobar 2020, xiii; Viveiros de Castro 2004b), divisions I have suggested are key to the climate crisis. Yet, what we find in the concept of *kab’awil* does not reflect an ontology that is non-dual *per se*. It includes dualities bound in reciprocal (and cyclical) relationship—dualisms wrought as complementarities rather than binaries (Chacón 2018, 13–14). And importantly, it holds them simultaneously within an inherent Totality. Writes Damián Upún Sipac, “Kab’awil (God) is the universe and in the universe duality is manifest. Kab’awil is everything, it is time, space, movement. Therefore, time is Kab’awil; this is why there are good days and bad days; because Kab’awil signifies two faces, two forms, two opposing energies” (1999, 21). Kab’awil thus bridges the dual and the non-dual. It potentiates unity in diversity, the more than one and less than many, the coherence of singular and plural, the possibility of a world of many worlds (Cadena and Blaser 2018).

I would suggest, then, that kab’awil reveals the basis for Sotz’il’s transmodern enactment of adaptation, pointing towards a higher-order cosmopolitics, one that is able to make use of global (universalizing) processes and framings while retaining space for divergences, contingencies, and multiplicities. From this vantage point, the weaving of knowledges and the strategic adoption of modern institutional, textual,

and political forms are not compromises—in fact, an interpretation of them as such may reveal the imposition of a totalizing narrative of modern hegemony that explains a great deal, but also obscures aspects of the situation. Via kab'awil, the relationship between indigeneity and modernity might be understood not only as one of domination and resistance, but also as one of complementarity, of co-constitutive relationality; for the Maya Cosmovision accommodates intrusions. Adaptation is deliberately "multiplied" from the partial connections, allowed to be uniquely Maya and still cooperative with the dominant enactment. Adaptation becomes (along with natural resource management, resilience, and even Indigenous knowledge) a sort of strategic equivocation, but with a twist. For Viveiros de Castro develops the idea of "equivocations" to understand what is lost in translation when what is being compared across ontologies is not two perspectives on the same thing, but a fixed perspective onto different things, a multiple object as it were. In Viveiros de Castro's usage, the objects reside in different places, in different worlds. However, my time with Sotz'il is not an encounter of radical alterity—at least not only such. In fact, it is a case of frothy edges, of overlap, where alterity and commonality mutually encounter one another and find themselves in symbiotic mutuality. Sotz'il fills the onto-epistemic gap between the generalized and the localized enactments, and harmonizes them. In this sense, my research with Sotz'il is more like Mol's research in a Dutch hospital, where multiple atherosclerosis are "made to cohere," than it is like Viveiros de Castro's encounter of incommensurable ontological difference among Amerindians (Mol 2002; Viveiros de Castro 2004a).

This takes the discussion back to Sotz'il's forest calendar and the way that it demonstrates a transmodern stance, one which is embedded in a cosmology of transformation, allowing Sotz'il to be highly adaptable across spaces and scales, and nonetheless enacting adaptation in a way that is rooted in a socio-ecological, onto-epistemic, and historical context. Maya adaptation comes from a strong sense of collective identity and draws upon ancestral knowledges which tie Maya people to specific ecologies, practices, and values. Yet as current circumstances challenge these places and contexts, it is understood that they are undergoing their own processes of change and adaptation. Sotz'il facilitates the strengthening of adaptive capacities of Maya communities to the accelerating forces of modernity, through the retention of memories of older ways of being—not to preserve a static vision of

cultural identity, but to engage in their own processes of cultural innovation and evolution—while deliberately incorporating modern patterns inasmuch as they strengthen adaptive capacities. For this reason, Sotz'il embodies flexibility and an integrative mindset, both in the intercultural synthesis of knowledges, and in the orientation towards knowledge-sharing across Maya communities. Like the seed which carries multiple ways of being in its memories, where there's overlap, one might activate new possibilities from generative onto-epistemic edges.

7. Enacting a Living World: Conclusion

> "By trying to feed the Holy in Nature the fruit of beauty from the tree of memory of our Indigenous Souls, grown in the composted failures of our past need to conquer, watered by the tears of cultural grief, we might become ancestors worth descending from and possibly grow a place of hope for a time beyond our own."
> —*The Unlikely Peace at Cuchumaquic: The Parallel Lives of People as Plants: Keeping the Seeds Alive*

In exploring climate change and adaptation from the Maya Cosmovision, I have attempted to bridge two scholarly conversations that intersect with the human dimensions of climate change literature. One deals with epistemological pluralism; the other deals with ontological pluralism. Several scholars (e.g. S. Eriksen et al. 2021; Goldman, Turner, and Daly 2018; Klenk et al. 2017) have pointed to the potential fruit of bridging these conversations. Nightingale, et al. (2020) write:

> Taking ontological plurality as a starting point, and querying the tenets of how the climate problem is framed, opens our imagination to seeing climate change as interlinked problems that permeate different scales and entangle socionatures in new ways. This ontological move drives us to look for research starting points not only in indigenous or local ways of knowing, but in the frictions and problematic politics that arise as different knowledges are brought to bear. …This kind of co-production [can] drive us towards a plural approach to knowledge, using multiple perspectives and thinking about gaps in our understanding as opportunities for imagination, querying assumptions, posing new questions, using uneven power relations to challenge hegemonies, and embracing uncertainty.

This thesis responds to such emerging calls for ontological pluralism as an aperture in coordinating knowledge contributions towards ethical and (more) adequate responses for the climate challenge. As I draw this thesis to a close, I would like to pose what I see as key concerns across these two conversations, and to what end I have sought to validate and to build a bridge between them. These challenges are

unresolved and ongoing, and yet I hope to have offered through this text some empirical examples and theoretical tools to point thinking and praxis in fruitful directions.

In the knowledge integration conversation, a great deal of attention is placed on questions of how to coordinate and integrate knowledges from different sources. Authors have provided frameworks for cross-validation (Tengö et al. 2014) or offered methodologies for co-production across knowledge systems (Berger-González, Gharzouzi, and Renner 2016). The aim is to place knowledges in relationship to one another to interrogate what is true in the service of developing more comprehensive ways of knowing. In the ontological conversation, a great deal of attention is placed on the need to make visible and call into question modern assumptions and to put greater attention on the politics and residual coloniality of knowledge production. At the risk of being grossly reductionistic about two very broad and diverse fields of inquiry in order to make my point as clear as possible: what the epistemological integrationists offer and demonstrate is a kind of *ontological commitment* that takes seriously the discernment of truth and of seeking to understand as clearly as possible what climate change is at multiple scales of experience and through different forms of representation. It is willing to ask what is really real, and in what sense. On the other hand, what the ontological pluralists offer and call for is a kind of *epistemic humility* that can reveal, call into question, and destabilize taken-for-granted aspects of modern structures and mentalities in the service of developing transformative alternatives. It is willing to ask what is not being seen, and to admit to not knowing (see again the quote above by Nightingale et al).[54]

I have sought to help bridge what is valuable in these two stances with a theoretical framework that unites and entangles ontologies and epistemologies. The question of how to integrate epistemologies alone, without recognition of their co-constitutive entanglement with ontologies, risks assuming a naturalist ontology (or "Universal Science," see Blaser 2016, 549–50) with a monopoly on the truth, and submitting

[54] The play between *epistemic humility* and *ontological commitment* are from Murray's (2019) "post-metaphysical thinking," a text which helped me think through many of the deeper philosophical questions that this research sparked, like how to unite ontologies and epistemologies.

other knowledges to that framework. In its blindness to the ways that knowledges shape realities, it can unwittingly continue to enact a world of modern patternings which drive and exacerbate climate change. The ontological conversation helps shine a light on these blind spots. Yet ontologies alone, without epistemologies, risks conflating perspectives and realities in a way that potentially fragments worlds into untraversable spaces of radical alterity, foregoing the possibility for critical discernment and mutual enrichment across ontological patternings. The analyst-practitioner carries the ethical imperative to attend carefully (and with great *care*) to both sides of this issue.

The point of departure for this thesis (at least from my ontological interlocutors) is the contention that the ground of partial connection, of frothy edges, might be a more productive starting point from which to engage a shared existential and planetary (albeit multiple) crisis like climate change, than the grounds of ontological fragmentation and incommensurability. The very tricky work demanded by the present planetary crisis is that we are being pressed upon to both destabilize modernity, and to construct a transmodern world (of many worlds)—at the same time. Towards this end, I have offered one empirical (and cosmopolitical) possibility: an example in which a Latin American Cosmovision provides the grounds for an integrative and transformative approach to climate change adaptation.

The imperative to unite *epistemic humility* and *ontological groundedness* points to the current limits of Western research methodologies. Our modes of knowing and interrogating reality deeply replicate the rift between the social and the natural, the epistemological and the ontological (Descola 2014). Part of the problem is that we are seeking to answer ontological questions with epistemological methods. I encountered this limitation in my work: a Sotz'il member would describe to me evidence of non-modern beings or activities, and punctuate the conversation with *hay que investigarlo* – we must investigate this! I, for one, was not equipped to investigate such questions, armed only with semi-structured interviews and workshop methodologies. Sotz'il exemplifies that innovative and integrative research can be driven and lead by Indigenous scholar-practitioners trained across knowledge paradigms. Multispecies ethnographies and transdisciplinary, integrative, and action-

oriented research also point towards methodological frontiers that might help address these limitations (Fazey et al. 2017; A. Tsing 2012).

If we enact worlds, we have some influence, in the limitless possibilities for the directions of their unfolding. All of our human stories and systems are consequential. Those constructed on a flat, dead world create an oppressive weight towards deadness and flatness. How then, might we imagine adaptation enacted from an attitude of reverence for a living world? And is it possible to enact this world not in opposition to a global dominant structure, but to leverage and build upon that very structure to enact a more vital world of many worlds? The cosmopolitical possibilities towards more life-affirming ways of being are limited only by our imaginations (Blaser 2016, 565): partial connections, homonymic actions, higher-order levels of coordination, spaces of critical dialogue and co-production, and multi-scalar solution building, might all be useful ways of imagining and enacting fruitful relationships. For all its multiplicity, climate change puts a great deal of pressure upon our one shared world, highlighting the need for global and universal efforts alongside locally, culturally and ontologically-embedded ones (Carolan 2004; Esbjörn-Hargens 2010). I suggest that Indigenous and modern onto-epistemologies are not inherently incommensurate—or at least not merely so. Humans are capable of synthesizing, flexibly moving between, and dwelling in their intra-actions to address sustainability challenges in ways equitable, lasting, and just. Recognition for non-modern ways of seeing and being may come about by seeking to broaden the world we share so that is more inclusive—and this process should always be seen as provisional. While we should never stop asking what we are not seeing and what we are not yet able to think, we might find we can, like Sotz'il members, enact mutualisms between multiple ways of knowing-being—and that the path beyond existential metacrisis demands it.

Concluding Thoughts

I began by painting the predicament in which humanity finds itself, lurching towards planetary destruction, and finding that the very means, tools, and concepts at our collective disposal are saturated by the same patternings that lie at the root of the metacrisis. I suggested that situating in an Indigenous world might provide an alternative starting point, a place to stand from which to see with relative clarity, the

particular forms of normalized and legitimized insanity that are driving unfathomable loss of life and situations of increasing precarity for human peoples everywhere, albeit with risks unevenly distributed. My own experiment in ontological flooding, an attempt to immerse myself in the Maya Cosmovision, translates only minimally to words on a page. I have reached towards something with concepts and seen that the truth is quickly overtaken by the play of connecting puzzle pieces of representation. I stray from the "data," from my friends, from this living, abundant world I cannot help but shrink with words. To understand enactment is in part to watch this reification process, to marvel, to laugh, and also to know it must be done. Yet perhaps the more essential contribution of this text is something that lies closer at hand, that is both simpler—less conceptualized—and more intimate than the points delineated above. It sits closer to the heart, revealed in relationships with friends, with plants, and with the landscapes of one's own upbringing.

Don Julio grew up in a community with marked racial divisions, in conditions of extreme poverty; his childhood was deeply marked by the losses and disruption of warfare. From a young age, he migrated to the Southern Coast for seasonal coffee and sugar harvests, backbreaking work he performed for pennies, a meager income that he cherished, because he had earned it. Yet what was most present in the way he talked about his upbringing, was the magic of the landscape in the rural hamlet that was his home. His voice filled with nostalgia when he described the stories of its living beings, the intimacy he felt with the rivers, forests, and land formations that grew him up. A kindred investigative spirit, he shared with me astounding stories, projecting a sense of wonder and curiosity I also share, about evidence he had witnessed of non-material beings and metaphysical happenings. For don Julio, the question of how one might possibly widen the lens of investigation enough to draw upon ancient, new, and integrative ways of verifying and understanding such happenings is clearly alive, in his attunement to the mysteries of life and deep desire to understand. He embodies the contours of Maya axiology described herein. The pennies, the seeds, one's every action, every word, and innermost attitudes—for don Julio, it all *matters*. It demands and deserves one's utmost care.

Back in the States, where life is set up to maximize material excess and disembodied forms of work, the lessons I have absorbed from don Julio and other Maya friends

move in and out of my awareness. It is easy to forget. I planted a *milpa* system[55] which did not do very well—the corn stunted and dried, the tomatoes were plagued by some inexplicable disease, and many of the plants suffered in the sweltering Southern California summer, hotter than it had been throughout my childhood. I tried to let it be real for me that the plants suffered, to let myself feel my own responsibility for not tending to them as they had needed, my days spent instead in front of the computer, reading and writing, transcribing interviews. Some seeds—the amaranth, *chile chiltepe*[56], and tomatillos—were native Guatemalan varieties, seeds that had been cultivated and saved across generations and then purchased online and planted in soils far from their ancestral lands, in a climate they do not remember, and without the stories and practices that have sustained them, and which they in turn have sustained. Other seeds came from the local nursery, and I planted them all together, creating an edge—frothy and confused—making available what water and organic compost I could, hoping they could find a way to *convivir*, to live together, to form a new Whole, and to nourish life.

And so it goes, worlds cultivated, permeated by intra-action, in the search to patch together some mode of thrivability amidst the unrest. The enactment of a flat, inert world has, thank Mother Earth, not cohered well with the inexorable thrust of life, a thrust which demands us to take account. It is of existential concern that we do. Unable to grasp climate change from within the patterns of the Modern mind, we might look towards edges where people have gone on resolutely remembering themselves as part of a living Earth. Maya adaptation points us towards a way of being and knowing that arises from a recognition of the sanctity of life. It is a sanctity of life that knows no boundaries, that is blind to the binaries that divide humans from one another; to the divisions that wrought a colonial world, an extractivist world, a world of stark inequalities; and also to the boundaries that we have forged between human and non-human realms. It is a sanctity of life that sees these divides as not-two. As complementary. As more than one and less than many. A sanctity of life that breathes us, that binds us, that sustains us—and that needs us, to be sustained.

[55] Traditional form of diversified Maya agriculture, typified by maize, beans, squash, and other crops.

[56] The chiltepin pepper is a very small spicy chili pepper, common in Guatemala.

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A main idea of this thesis is that we bring our worlds into being. It is just as true that we bring one another into being. Deep, reverential gratitude is the only logical response to such a premise. While writing has in some ways felt like a solitary experience, many folks were present in a web of relations that have sustained me and helped bring this text into being.

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experiences with such openness and vitality, and I thoroughly enjoyed every conversation we shared. I have been humbled by his trust in me.

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gratitude for proofreading the final draft. My thirst for learning comes from a lifetime of exposure to his library, and I went on finding treasures there (e.g. *The Body Multiple*) throughout this process. Isabel Magnus is the kind of friend that reads a draft of your literature review (nixed from the final text) and tells you that cobwebs whispered through her as something long forgotten shifted back into position. Imagine how it feels to receive that. I need say nothing more. Thanks to the Tay family and the Sotz Son family, both of whom provided family and a feeling of home to revitalize me on weekend visits through the lonely weeks of fieldwork.

I learned first-hand from life in Maya communities, how expressions of heartfelt gratitude bind us to one another in relationships of reciprocal nourishment, long before I realized that the ritualistic giving of thanks was in the Maya Cosmovision as a way of regenerating the world. Doing an interview or a workshop is an act of receiving an expression of someone's world, and it amazes me when someone chooses to trust me by sharing openly about their life. I feel humbled and grateful to have had the opportunity to explore my research inquiries with each and every person who participated, and am deeply indebted to those who have shared their ancestral wisdom with me and have given me permission to draw upon it in writing this thesis. While the thesis may have my name on it, the knowledge of the Maya belongs to the Maya people, and this text also belongs to them. To the *abuelos Mayas*—I am grateful and honored to have received a manifestation of your wisdom through your grandchildren, and although this text is my own interpretation and understanding, I hope that it reflects truthfulness. I ask forgiveness for any missteps I may have taken.

This *granito de maíz*—this little grain of corn—is for all of those who astutely keep on tending to the spark of life.

Thank you, and *please*:

Keep going.

Appendix A: Glossary

This glossary serves as a reference for Spanish (in black) and Kaqchikel (in white) words used in this text. In the body of the text, they are defined only in their first occurrence, and italicized in their first occurrence of each paragraph.

Aj q'ij: Most often translated as day-keeper, Maya spiritual guide or Maya priest, an ancestral (and contemporary) Maya authority figure with the role of maintaining the count of time or of days through the 260-day Maya ritual or sacred calendar, the *Cholq'ij.* Sotz'il members also speak of Ajq'ija'as Maya *scientists*, reflecting their roles as knowledge-holders and experts. In Kaqchikel, K'iche', and other Maya languages, *Aj* is a prefix indicating the title of a person serving a particular role; whereas *q'ij* refers literally to sun or day, and is associated with time (Sac Coyoy 2007, 2–3).

Aj q'ija': Plural of Ajq'ij in Kaqchikel.

Chimalteco: A person from Chimaltenango.

Cholq'ij: The Maya sacred calendar, coordinated as a matrix of thirteen months of twenty *nahual* days each. The twenty *nahuales* indicate qualities of the energy of each day while the thirteen numbers indicate the intensity of the energy. The particular energetic stamp of the day, based on its nahual-number combination, also indicates the particular ceremonial practices that are appropriate for that day. One day, for example, may be good for asking for a healthy harvest, whereas another is good for seeking healing, whereas another day might be apt for giving thanks for material abundance (Stanzione 2006). It is *Cholq'ij* in both Kaqchikel and K'iche', literally this means to count or to order (*chol*) days (*q'ij*) (Sac Coyoy 2007, 2). It is *tzolk'in* for the Yucatec Maya, and *tachb'al q'ii* for the Ixil Maya (Cano Contreras, Page Pliego, and Estrada Lugo 2018, 7).

don / doña: Spanish titles, like Mr. or Mrs., commonly used in Guatemala to address married or older people. They are followed by their first name.

dueño: Literally *owner*, and used interchangeably in this text with *nahual* and *k'ux* as words descriptive of a being's life energy or essence.

Kaqchikel: The name of a Maya language and people group, whose primary region is in the highlands of central Guatemala (in the departments of Sololá, Chimaltenango, Sacatepéquez, and Guatemala). They are estimated to be the fourth-

largest Maya group with more than 1 million speakers (Instituto Nacional de Estadistica Guatemala 2018).

kab'awil: "Double vision" or "double gaze," kab'awil is a multivalent Maya term (same in Kaqchikel and K'iche') whose meaning has evolved since the preclassic era (Chacón 2018). It refers both to the totality of the universe and to archetypal complementarities that manifest throughout it, including a concept of time that incorporates both continuity and change.

k'ux: Key to Kaqchikel notions of selfhood. Often translated as "heart," "essence," or "center," it refers to the energetic dimension of selfhood. Used somewhat interchangeably with *nahual*, *guardian*, and *dueño*.

Ladino / ladinoization: Ladino/a is a term that has come to be more or less synonymous with mestizo in Guatemala, referring to a person of mixed Indigenous/European descent, or a person of Indigenous descent who is Spanish-speaking. Ladinoization refers to the cultural process by which social identities change from Maya to Ladino Guatemalan. Because of their fluidity, these are considered to be socio-cultural rather than ethnic categories.

libramiento: Literally: deliverance. Refers to a beltway. In this text, it refers to the new part of the highway through Chimaltenango that has been plagued with landslides and corruption scandals.

mestizo / mestizaje: A person of mixed Indigenous/European descent / the fact of cultural mixing.

nahual: Ancestral entities that inhabit and protect all beings of the cosmos, and represent their vital life energy. The *Cholq'ij* sacred calendar denotes twenty nahuales which cycle through the count of days, each with their own range of meanings and ceremonial significances. The *nahuales* are also associated with animals

Nana / Tata: Literally "grandmother" (nana) and "grandfather" (tata) in Kaqchikel and other Maya languages, the terms are used to address respected and elderly individuals in Maya communities. In this text, as is common in contemporary Maya communities, they are used as titles of respect for *Ajq'ija'*, preceding the individual's first name (García Ixmatá 2010, 226).

Appendix B: Translations Note and Original Quotations in Spanish

Note on Translations

Here are a few orienting notes regarding how I present translations, quotations, and words in Spanish or Kaqchikel. Throughout this text, all quotations from research participants are translated from Spanish. In my translations, I aim to retain the meaning of participants' words whilst limiting disruptions and confusions for the reader. In the translation from Spanish to English, from verbal to textual speech, and from communication-in-conversation to verbal snippets in the context of empirical analysis, much is lost and transformed (Loubere 2017; Wainwright and Russell 2010). Many of the particularities of speech in Guatemala—rising intonations to emphasize distance or extremes, replaying dialogue in stories, and repeating what others have said for emphasis and rapport, for instance—can be lost in the translation to written text, and to English. Spanish is not a first language for some who participated in this research, meaning that for some, the words I heard and recorded in Spanish were already a sort of translation—I have surely missed nuances which I would have picked up on if I spoke Kaqchikel. For speakers who are not fully fluent in Spanish, my translations sometimes attempt to smooth over mistakes, such as inconsistencies in tense, to not distract from the intended message. In all cases, I have removed filler words and repetitions common to spoken speech unless they aid the flow of the written text—the most common, *pues*, is not really translatable anyway. I use ellipses in the text (…) to mark all but the slightest omissions. My familiarity conversing with Maya Guatemalans and the review of two Spanish-speaking advisors with research experience in Guatemala were helpful in the translation process. While even the best translations are approximations, some are certainly better than others, and any shortcomings in this text are my own.

Quotations from participants are cited with the participant's pseudonym and the date which the quotation was recorded. All dates are from 2019 unless otherwise noted. So, for example, "(Leonel 10/29)" would be the citation for a statement from Leonel from October 29, 2019. For transparency and so that Spanish-speaking readers might benefit from nuances that are lost in translation, I provide the original quotations in

Spanish. Longer quotations are compiled in this appendix below whilst shorter quotations are printed in footnotes. Those that are published in this appendix can be referenced by a code which begins with the chapter number and is then ordered by letter alphabetically. For example, "(Leonel 10/29 7A)" would be the citation for the first quotation from chapter seven, with "(Julio 11/3 7B)" being the second quotation from chapter seven, and so forth.

Chapter 4:

4A. Leonel, October 14, 2019:

> Es bien difícil y complicado hacer que esto cambie, verdad, porque incluso para lo que esta pasando ahora en el paso, en el paso que hicieron, en el libramiento, y se está derrumbando, siempre las indicaciones es decir, hay que pagarle al cerro, pero pagarle al cerro no significa darle dinero o algo, verdad, sino, pedirle permiso a la naturaleza, porque vas a cortar el cerro a la mitad, vas a cortar arboles, animales, entonces es una negoc— así como se negocia entre personas también hay una negociación con la naturaleza, con la energía que allí hay. Pero nunca se toma en cuenta, verdad. Si esto se tomara en cuenta, tal vez no existirían lo que pasó allí, hubieron perdidas humanas a la hora de hacer los trabajos, ¿verdad? Entonces algunos trabajadores, se murieron, y eso. Y, porque no se ha, no se ha ofrendado o pedido permiso al cerro a hacer el trabajo, y ahora que está terminado igual se derrumba y todo, pero es por lo mismo, ¿verdad?... hay un montón de derrumbes y todo, pero — aparte de que hay un trabajo que no está bien hecho, nunca se dialogó con él, porque acá se dice que todo cerro tiene su dueño.

Chapter 5:

5A. Gerardo, October 28, 2019:

> Así hacía antes, mi abuelo, mi defuncto papá, pues, así, recogiendo todos los granos que habían quedado allí. Pero lamentablemente que hoy es de, la nación que estamos nosotros ahora pues, ya no lo cuidamos; ya lo desperdiciamos mucho, no como antes. Y eso debería de recuperar

nuevamente, todo eso, lo que se había perdido porque, estamos viendo pues de que, antes era así, si mira un granito de maíz, lo recoge, un granito de frijol, lo recoge. Pero ahora ya no es igual como antes.

5B. Miguel, October 28, 2019:

Toda semilla, cualquier planta, es una esperanza para la gente. Si no se tuviera la cultura de respetar la semilla, tal vez no tendríamos ninguna identidad. En una ocasión, me decía un compañero de trabajo,…que en la capital,…donde paraban las camionetas, vió a un señor, recogiendo unos granos de maíz que estaban tirados allí en el lugar, en la terminal. Y me decía él: 'que tanta pobreza hay! Que un señor, pobrecito, recogiendo los granos, no cabe duda que le va a servir para su comida pues.' Y no era eso. Sencillamente, nuestros abuelos siempre nos indicaron que había que respetar la semilla. Y no cabe duda que el señor le dió tristeza, le dió lastima, que el maíz estuviera tirado allí, lo recogió para que no se paraban encima. Era cuestión muy íntimo, muy espiritual, no era cuestión de que por hambre estaba recogiendo.

5C. Paulina, November 5, 2019:

Los abuelos, nuestros ancestros lo que hacían, ...hemos perdido ahorita y por eso el medioambiente está dañado. Porque nuestros ancestros alimentaban esas energías. Trataban de darle la vida, de darle energía, porque ellos sabían que de estas mismas energías, pedían ellos.... Entonces los ancestros ofrendaban. Gracias madre tierra por las cosechas, gracias porque nos estás dando como respirar.... La naturaleza es el complemento de nosotros mismos.... ¿Pero qué estamos haciendo? Dañar. En cambio los abuelos...cuidaban, protegían, porque sabían que dependían de ello. ...Pero nosotros lo hemos olvidado.

5D. Leonel, November 9, 2019:

El conocimiento tradicional no quiere decir más que los conocimientos que me dejó mi abuelo; las prácticas que mi abuelo me ha dejado.

5E. Jorge, October 17, 2019:

Porque la Cosmovisión es el todo. La Cosmovisión no es una parte ni es otra parte, no hay división, sino es todo lo que existe a nuestro alrededor.

Y cuando nosotros decimos de que todo lo que existe a nuestro alrededor, según la espiritualidad Maya, todo tiene vida, ¿verdad?, porque de alguna manera aporta al bienestar del ser humano, ¿verdad?, porque el ser humano no puede estar sin la naturaleza. La naturaleza sí, puede estar sin el ser humano. … Por eso es de que siempre se agradece por lo que tiene, siempre hay ofrendas, las ceremonias, que es parte de la Cosmovisión, es parte del agradecimiento, por todo lo que tenemos a nuestro alrededor. … ¿Por qué es de que, donde están las comunidades Indígenas, siempre hay recursos [naturales]? Porque lo miramos de la misma forma que nuestra propia vida, pues! Entonces por eso…mi papá… pide permiso para botar un árbol. … Él deja crecer los arboles en el terreno, y cuando ya están grandes, o se caen solos, o él los bote, ¿verdad?, entonces allí tiene su leña, pero siempre con respeto, el respeto a la naturaleza es parte de la Cosmovisión.

5F. Julio, October 15, 2019:

Sí. Pero no de una manera así, …como muy religioso. Sino que como, más como practica, más como actitud…. Esa parte digamos que cuando, lo que mencionaba yo hace poco cuando uno toma el maíz, hace un sonido así como, wuh! Y eso lo hacen no solo en [mi pueblo natal de] San Martin, eso lo hacen en diferentes lugares. Toman la maza, e igual, toman el agua, e igual, toman la leña, igual. O sea eso. Es una actitud así como sacarse el sombrero, de ver hacia sale el sol, y hacer una reflexión así como muy—sin religión. Sino que un, una actitud, directa. Sí. Eso. Y todo lo que ocurría, se asume de que eso es voluntad de un Ser Supremo. Y hay que respetar y hay que, o sea esa actitud de no destruir. De no destruir. Eso, de alguna manera, pues, lo marca a uno en su propio desenvolvimiento.

5G. Franklin, October 29, 2019:

Se atribuye el nombre del cambio climático…a la alteración de estos ciclos del cambio del clima que se han dado en el planeta…pero este cambio ha sido…por las actividades del hombre…. Yo considero desde mi perspectiva que influye mucho…los valores que el ser humano tiene. Como la perdida de la cultura ha afectado digamos este tipo de situaciones, como los ha potenciado.

5H. Pedro, November 8, 2019:

Para mí es la común, que dice toda la gente. Pero digamos, si lo vemos desde la filosofía, es la pérdida de valores. De valores y de principios.... O sea tenemos que respetar todo...porque todo tiene vida.

5I. Julio, October 16, 2019:

El agua pertenece al reino mineral en conocimiento occidental, y el reino mineral no tiene vida.... Pero en este mundo encontramos de que el agua no está clasificado en reinos de tal manera, y el agua tiene vida. Sí, pero es creencia. ¿Cómo se explica la gente, cuando la gente habla con el agua, y el agua le corresponde?...Para los Indígenas tiene sentido, aquí hay un nacimiento y aqui la gente se pelea.... El agua se va.... Eso no es un caso aislado, esos casos los hemos analizado, hay en Yepocapa, hay en Comalapa, hay en, más occidente, hay en todos lados, esas experiencias de que si uno se pelea cerca de un nacimiento de agua, el agua se esconde.... El agua tiene vida, sí, tiene personalidad, tiene energía. Entonces, esa es la parte que cuesta entender. Pero [si] no tiene vida, no importa. El elemento que no tiene vida, no siente. Entonces, no importa, se maltrata. Pero si este elemento tiene vida, lo voy a respetar.

5J. Regina, November 11, 2019:

Dije, toda la gente tiene que participar. Tienen que poner marimba, hacer fiesta.... Entonces [Tata Cristobal] me jaló y me dijo ‘mire, usted va al camino que va a recibir su barra, venga a ayudarme,’ y estuvimos en la noche, escarbamos la cueva allí, allí hicimos la ceremonia. Ellos hicieron dos ollones de puliqe y tamalito. Estuvieron los Católicos, los Evangélicos, los que no eran nada.... Y la *gran* fiesta que se hizo en toda la noche, resultaban bailando hasta los evangélicos.... Y al tercer día, vino el agua.... Y de allí, allí amanece el agua ahora.... Pero sí, vemos pues, que todo...en la naturaleza está su nahual.

5K. Benicio, October 29, 2019:

Los psicólogos lo tienen otro nombre...[cuando] la tristeza...la amargura que se sienten en su vida [es tanto] que se empiezan a cerrar, y...hay una enfermedad, como se llama este que cuando la gente se mete a sus habitaciones y ya no quieren sentir? (*otras voces*: “La depresión.”) Eso.

Eso precisamente es lo que genera, eso *xuxtuj ri*, o sea se abandona, se desconecta de su propio ser, de su energía, de su nahual, y todo, y se aísla tanto que empieza a enfermarse de eso. Entonces, de depresión.

5L. Benicio, October 29, 2019:

Eso es…una diferencia que hay entre el sistema que impera en el mundo y nuestros pueblos originarios, los pueblos Indígenas, específicamente los Mayas, que…para nosotros todo tiene vida…todo tiene ruk'ux,…y…como todo tiene ruk'ux, tiene su propio pensamiento, su propia forma de cómo proyectarse, su propia proyección hasta donde llega.

Chapter 6:

6A. Leonel, October 14, 2019:

Trabajé un año en la parte occidente, en una comunidad en donde construimos trece invernaderos, y nos decían ¿qué tiene de cultural un invernadero … que es algo moderno y no tiene nada cultural? Y les dijimos que, bueno, no les dijimos sino que se trabajó de esta forma, ¿verdad?, que ellos cuidaban su agua. Tenían un nacimiento, y tienen una forma de distribución desde su conocimiento tradicional—(*Yo:* "¿En cuál lugar era eso?")—San Luis Sibilá, que es Totonicapan. Entonces ellos tienen repartida su agua, y no pueden obtener más agua, tienen cierta cantidad asignada para cierto número de familia. Entonces, pero, hay un problema. Que como hablamos del cambio climático, ellos producían menos, había mucha sequía, a veces muchos vientos, entonces ellos perdían la cosecha. Entonces ellos administran bien su agua y todo, pero tienen pérdida, como decimos, en su forma de producción, entonces los invernaderos vinieron a fortalezer este grupo para mantener su modo de conservación del agua, su forma de conservación del agua. ¿Por qué? Porque en la hora de estar poniendo aquí un invernadero, quiere decir que ellos van a utilizar menos agua para producir sus alimentos, para su venta, verdad, entonces, todavía van a conservar el mismo modelo de conservación del agua. entonces es algo nuevo, tecnificado, que viene a apoyar a lo cultural. Entonces no quiere decir que un invernadero sea cultural, pero sí, les ayuda a conservar sus practicas culturales.

6B. Julio, October 16, 2019:

> Ellos facilmente se adaptan, si sus conocimientos son fuertes. Pero que pasa si sus conocimientos son débiles, tenemos que traerles instrumentos, capacitaciones desde aquí para acá, a lo que ellos va a costar que entiendan más. Entonces el aporte de los conocimientos Indígenas para el tema del cambio climático es la adaptación. Facilita los procesos de adaptación que son tan efectivos para ellos. ¿Sí? A veces se cree, no, es que los Indígenas no tienen conocimiento, hay que enseñarles cómo, deben adaptarse. No. Hay que ayudarlos a fortalecer sus conocimientos….Eso no significa de que no puedan utilizar parte [el] conocimiento científico. No significa hacer una relación pura. No, no hay de eso ahora. Igual que aquella persona que se cree de sangre azul. Eso no existe. Ya no existe. Pero el caso es que debemos de ser interculturales, pero en lo más posible, que predomine el conocimiento Indígena en los Indígenas. Sí. Eso es cómo el aporte. Y cómo esos modelos son efectivos, el aporte es poner ese modelo acá, y si alguien lo quiere replicar. O traer criterios de aquí, experiencias de aquí, para llevar a otros sitios.

6C. Alfredo, November 6, 2019:

> [El calendario forestal] nos ha ayudado bastante. ...este año se reforestó, ... casí seis hectáreas y media del bosque ... en la finca de Montagua, y nos fuimos a base del calendario forestal. Entonces allí fue muy excelente, ...me dice en qué fase de la luna uno llega a sembrar, en qué fase de la luna uno llega a limpiar, y todo eso. Sí, nos ha ayudado bastante. (*Yo*: "¿Son conocimientos que ustedes conocían antes?") Una parte sí. Pero no los poníamos en práctica, ahorita los estamos poniendo en práctica. Así es. Digamos, allí nos dice a que fase de la luna uno puede aprovechar la madera para leña, porque decían nuestros ancestros, para botar un árbol, la luna tiene que estar llena, o cuarto menguante. Pero no hay que bajarlo en luna nueva o cuarto creciente, porque no va a arder. Entonces sí, lo veníamos escuchando, pero ya con este calendario que se nos entregó, entonces uno ya tiene un poquito más de conocimiento.

6D. Pedro, November 8, 2019:

> La ciencia Maya, o sea la Cosmovisión Maya, el conocimiento Maya, corresponde a un orden natural. Vuelvo al calendario forestal. O sea el bosque tiene su propia dinámica. El bosque tiene sus ciclos. Según esta investigación,…en el area rural en el occidente, no lo ven como equinoccios y solsticios el movimiento del sol, lo ven a través del bosque,… como ciclo masculino y feminino. … Cuando los arboles están madurando y botan la semilla, desde allí empieza el ciclo femenino. No hay que entrar al bosque porque uno machuca la semilla, y se atrofia, …. No hay que entrar cuando ya germinó…, son plantas muy pequeñas, no logramos diferenciar entre monte común y arbolitos, y los machucamos. O sea, es un espacio casi sagrado, respetan. ….Luego viene el ciclo masculino que empezó ahorita, el veintiuno de septiembre, termina el veintiuno de marzo. Allí ya podemos entrar, por qué? Porque la planta ya está grandecita. Ya podemos decir, "allá es un arbolito, no machuquen…entonces, ya se puede hacer aprovechamiento del bosque—madera, leña, todo lo que [viene del bosque]. … Entonces, esos son normas que se respetan.

6E. Benicio, October 29, 2019:

> Si hay todavía una persistencia en…nuestra manera de ver las cosas, es porque al final de cuentas, somos un pueblo que ha tenido un montón de trayectoria histórica,…y eso ha hecho que [el pueblo] tenga experiencia en el mundo, no solamente como experiencia de un grupo en específico, sino la adaptación que ha tenido en el mundo, por ejemplo, porque fue que desaparecieron Tikal y todos esos lugares, se supone que…tenía que ver con algún cambio climático en hace tiempo. ¿Entonces que pasó? Tuvieron que [imigrar, morirse,] moverse, desplazarse a otros espacios…, pero después ya regresaron o…estuvieron en otros espacios. Pero siempre hemos pedido, y de eso es que todavía tenemos todos los conocimientos que manejamos en este momento todavía. Entonces somos un pueblo auténtico, somos un pueblo que tiene su propia especialidad, su propia forma de ver la vida….y también tenemos nuestras propias propuestas de cómo mitigar o adaptarnos al cambio climático. Pero para eso, tenemos que…ser visibles ante el mundo. Que nos escuchen en el mundo.

6F. Edwin, November 18, 2019:

Hay un principio en la cultura Maya que es el kab'awil, que (…) toda realidad debe de verse desde distintos ángulos. No solo desde un lado. Dice el Popol Vuh que no hay que ver solo para adelante, sino que para atrás y para los lados. Eso significa que la realidad es cambiante. …la verdad es el reflejo de la realidad, pero cada quien tiene una realidad distinta de acuerdo a su momento y su espacio. Ese es el principio de no ser estático, sino que cambiante un poquito, que el nuevo sustituye el viejo. Pero con una relación de continuidad. Ese es el principio de la doble visión.

6G. Julio, October 16, 2019:

Según mi entender… en los espacios en los que he estado…nos facilitan algunos espacios, pero no es que nos aprecien. No es que *quieran* que estemos en esos espacios, nos ven como, a veces, un mal necesario. …Porque a menudo en los espacios del estado, de pronto parece un documento. "Vamos a presentar ese documento, tal tal tal." … Entonces la pregunta es:
"Y dónde están los Indígenas allí?
"No, porque como en Guatemala, pues somos Guatemaltecos todos, entonces aquí estamos reflejados todos." *¿Cómo que todos?*
"Pero aquí está prevaleciendo la cultura occidental."
"Sí pero, para que diferenciarlos? … por eso es que estamos divididos, tenemos que crear la unidad."
O sea, hay argumentos. …De diez situaciones…puedo decir si mucho un caso en donde incluyeron algo de los Indígenas. … En los documentos, en una parte … donde ponen "contexto," dice que pueden empezar con decir, Guatemala es un país pluricultural, que cuenta con tantos pueblos y tantos idiomas, y ta-ta, …Pero, no. No ocurre eso. … Casi siempre que observamos algo … son las mismas observaciones. …: o que no incluyen la naturaleza pluricultural de Guatemala, o que no incluyen los conocimientos Indígenas, o que se olviden de los idiomas Indígenas, o que llevan información a ciertas áreas y todo eso pero se les olvida que hay que traducir o hay que buscar mecanismos para…garantizar la participación. Y a veces, en los documentos aparece: desarrollar esto "con pertinencia cultural." Es como el objetivo que le ponen. Con

pertinencia cultural. Y allí, como que ya. Ya estamos con los Indígenas allí, con pertinencia cultural, y ya estamos. Eso es lo que yo he visto.

6H. Julio, October 16, 2019:

Hay otro personaje por allí que él se siente de muy alto nivel, él es Ladino. …Él se da el lujo de criticar a los que llegan. "Miren, por favor, si me van a mandar representantes Indígenas, no me mandan a la fulana. …no, mándame aquel" al gusto de él. …lo ha hecho en publico, y eso está *mal.* …Y así hay varias personas. … Vamos a las regiones, nos sentimos como pez en el agua, porque [es] nuestra misma gente, … pero cuando vamos a la capital, se siente mucha más…ese ambiente, donde … lo miran a uno así…como muy, *algo folclórico*, no sé cómo se puede decir. …La exclusión siempre existe.

Appendix C: Methods Addendum

Participants: Sotz'il members

The people with whom I conducted recorded interviews are listed in Table 3.1 with their pseudonyms. These individuals were also key collaborators and co-researchers in the project.

(Don) Bayron*	Executive Director	Reports to Board of Directors
(Tata) Pedro	Spiritual Advisor	Horizontal to Executive Director
(Don) Julio*	Director of Programs	Reports to Executive Director
(Don) Jorge*	Training Specialist	Reports to Director of Programs
Leonel	Organizational Strengthening Specialist	Reports to Director of Programs
Franklin	Community Development Specialist	Reports to Director of Programs

**Sotz'il founding member*

Workshop Methods

In the first workshop with community leaders (October 28, 2019), I borrowed from a technique of mediated dialogue that involves using objects or "elements" from nature as the basis for reflection and a springboard for dialogue and the crystallization of shared meanings (Palus and Drath 2001; Palus and McGuire 2015). Fourteen participants placed an element in the center of a circle (those who did not bring an element were invited to draw a picture of one), and reflected on the meaning of that element. The group reflected on several types of seeds, plant and tree species, a stone, and a made object (a crochet bag), and the myriad roles of these items in peoples' lives and in Kaqchikel tradition. Through reflections, participants were able to express the value and meaning that certain elements of their landscapes held for them individually and collectively. They also identified and discussed changing ecologies—such as the diminishment of certain plant species—and the parallel loss of practices, and voiced feelings of sadness and loss regarding these changes.

The second workshop with community leaders (November 18) was called the *Café de Vida*, the Life Café, and was designed to follow a World Café format (Steier, Brown, and Silva 2015; Pagliarini 2006; Jorgenson and Steier 2013), a participatory research method designed to create a comfortable and creative environment in which participants can enjoy a cup of coffee and connect with one another in conversation to develop shared meanings around salient themes. The primary questions for the Life Café and discussion prompts were written to guide small groups of four in dialogue around tables (see Table 3.2). After the discussions, common threads and highlights from the various conversations were shared with the larger group, and individuals shared closing reflections. Because the Life Café was conducted on my last day in Chimaltenango, the thematic content seeded by the questions in the envelopes was designed to build on conversations and themes that had already emerged as salient throughout the fieldwork. This conversation was oriented towards transformative visions for change that align with the Kaqchikel concept of *utz k'aslemal*, or *el buen vivir* (see page 55).

Primary question	As we face climate change, how do we promote utz k'aslemal in our communities?
First prompt	Let's imagine utz k'aslemal. What do we see?
Second prompt	What factors can make our communities be resilient to climate change?
Third prompt	How can we strengthen ancestral values and practices in our communities?
Fourth prompt	What are the necessary transformations in our country and at the global level? How can we participate in these transformations?
Fifth prompt	We are twenty years in the future. Our communities are living utz k'aslemal. How have we gotten here?

Table 3.2

Consistent with an action research approach, the design of these methods—and the Life Café in particular—starts from the meaning-making and agendas of local actors, while leaving space for participants to foreground multiple perspectives and reflections to explore the complexities of the workshop's thematic content.

Two workshops with spiritual guides (October 29 and November 11) were also conducted to foster generative dialogue, however, with a less directed format than

workshops with community leaders. In deference to the guides' spiritual and cultural authority, I took a less structured facilitation approach to allow the conversations to unfold in collaboration with them. In the first workshop, don Julio introduced the workshop as one focused on recuperating and revalorizing Indigenous knowledge. I introduced the research objectives and suggested themes for dialogue, indicating my interest in the guides' perspectives on changes they are experiencing and their ways of interpreting the moment we are living in, presenting the dialogue as a collaborative co-creation. In both workshops, a conversation unfolded among the guides for several hours before lunch. In the first, a good part of the morning was dedicated to Adelia's sharing of her story, which I reference in chapter five to help extrapolate the concept of *xuxutuj ri k'ux* and its connection to climate change. In both workshops, we recapped themes after lunch, using a simple structure in which each person took a turn to present several salient ideas, aided by markers and sticky notes, to close our dialogues.

Interview Guides

The following were used to help guide semi-structured interviews with Sotz'il members (first guide) and with community leaders (second guide). Of the two *Ajq'ija'* who were interviewed for this project, one was a Sotz'il member and one was a community leader. Although a separate interview guide was not developed for them, conversations naturally ventured into territory which the Aj'qija' are uniquely positioned to discuss.

Guia de Entrevistas con equipo Sotz'il

Explicar las categorías de preguntas.
Me puede hacer una pregunta en cualquier momento.
No hay que contestar a todas las preguntas si no quiere.
Algunas son repetitivas con conversaciones que ya hemos tenido.

Key	
	Personal
	Professional
	Organizational
	Conceptual

Pregunta	Razón
1. ¿Cuál es su nombre? 2. ¿De dónde es? 3. ¿Su edad? 4. Cuéntame un poquito sobre usted. (De dónde es, cómo es su familia, cómo era su niñez, educación, idioma / etnia)	*Ice Breaker questions *Personal details, narrative

5. ¿Tiene usted una religión? 6. ¿Me podría hablar un poquito sobre su relación personal con la espiritualidad Maya? 7. ¿Me podría hablar sobre su relación con el territorio (lugar de nacimiento, lugar de vivencia actual)? 8. ¿Ha observado cambios en los patrones del medio ambiente, desde su niñez? 9. (¿Cuáles? ¿Cómo se siente al respeto? ¿Por qué?) 10. ¿Cómo se relaciona Usted con las políticas?	*Spirituality, relationship to land, and perspectives on cc.
1. ¿Cuál es su rol con Sotz'il? 2. ¿Cuándo empezó a trabajar en Sotz'il? 3. ¿Porque decidió trabajar en Sotz'il? 4. ¿Cuál ha sido su motivación para seguir trabajando en Sotz'il? 5. ¿Cuál/es ha/n sido el/los logro/s qué usted considera que sea/n más importante/s de Sotz'il desde que inició su participación en la organización? (Ley CC) 6. ¿Cómo ha sido para Usted, trabajar desde Chimaltenango?	*Role, motivations *Achievements of significance *Potential tensions working from a dense urban setting
1. ¿A qué se dedica Sotz'il? 2. La formación de Sotz'il: (¿Cuándo? ¿Cómo? ¿Por qué? – contexto socio-político-histórico) 3. ¿Cuál es la visión de Sotz'il? ¿Cómo cree que esta visión puede estar realizado? (Su perspectiva sobre transformación) 4. ¿Me podría hablar brevemente sobre sus diferentes iniciativas al nivel comunitario, nacional, e internacional? 5. ¿Cuales son los actores más importantes que apoyan al trabajo de Sotz'il? (fundadores y colaboradores) 6. Según su perspectiva personal, ¿Cómo ha sido el proceso de incluirse en espacios y procesos nacionales (políticos y organizacionales-referir a #2 – ej, Ley CC)? 7. ¿Cuál ha sido la razón por incluirse en estos procesos? 8. ¿Se siente que sus aportes han sido apreciados por los varios actores? *9. Repetir 4-6, para espacios y procesos internacionales* 10. ¿Cuál área del trabajo de Sotz'il considera usted que tenga el impacto más potente con respeto al cambio? 11. ¿Cómo es diferente la perspectiva de ustedes comparándolo con otras organizaciones trabajando en mitigación o adaptación? 12. ¿Cómo se ve la diferencia que hace esta perspectiva en el trabajo que ustedes hacen?	*Sotz'ils work *Inclusion & motivation for working on different levels *Perspective re: climate impact & unique contribution Understanding barriers and transformations

13. ¿Cuáles han sido las barreras más limitantes en el trabajo de Sotz'il? (financieros, políticos, sociales – Explore USAID funding if possible/relevant) 14. En los varios procesos en que ha participado Sotz'il, ¿Cuál o cuales se considera lo más transformativo? (su perspectiva con respeto a su impacto y sus limitaciones)	
1. Desde su perspectiva, ¿Cuales son los aportes de la Cosmovision Maya frente al cambio climático? (¿Para los pueblos Maya? ¿Para el resto del mundo?) 2. Desde su perspectiva, ¿Hay limitaciones de la Cosmovision Maya como un recurso frente al cambio climático? (¿Cuáles?) 3. Si pudiera dejar un mensaje al mundo con respeto a la cosmovision Maya y el cambio climático, ¿Qué sería? 4. ¿Hay algo más que quisiera aportar a esta entrevista, que no hemos abordado? 5. ¿Hay algo que me quisiera preguntar? 6. GRACIAS	*Direct perspective on the research question – positive and negative *Closing

Guía de Entrevistas con Líderes Comunitarios

Key	
	Personal
	Community
	Initiative
	Conceptual

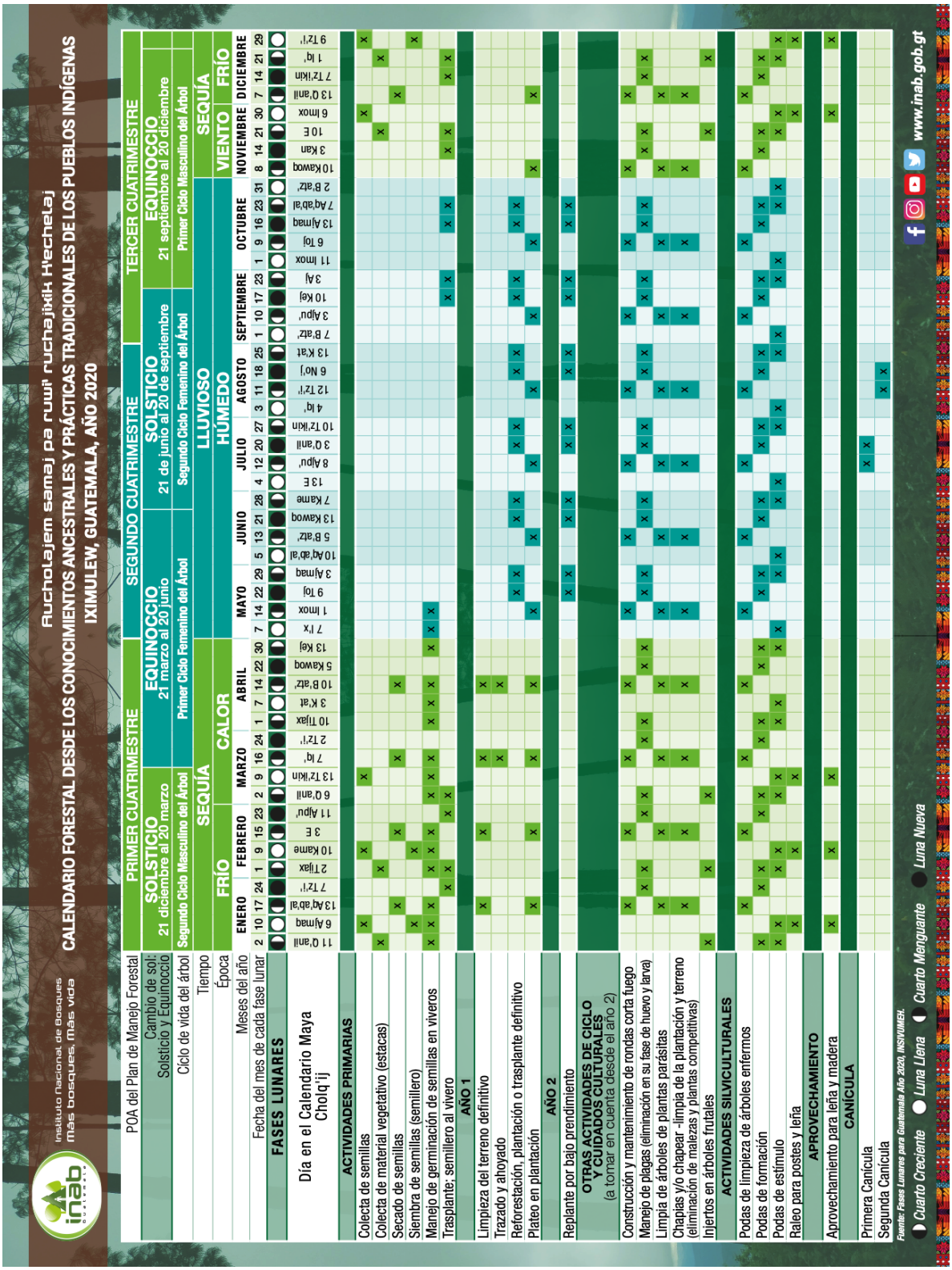
Establish language and translation if appropriate.
Consentimiento informado.
Explicar las categorías de preguntas.
Me puede hacer una pregunta en cualquier momento.
No hay que contestar a todas las preguntas si no quiere.

Pregunta	Razon
11. Cuéntame un poquito sobre usted. (De dónde es, cómo es su familia, cómo era su niñez, educación, idioma / etnia, edad) 12. ¿A qué se dedica? (Si es agricultura, tenencia de su terreno, que cultiva, ritmos de trabajo) 13. ¿A qué se dedican sus familiares? 14. ¿Hay alguien que haya emigrado de se familia? ¿De otras familias aquí? 15. ¿Se pertenece a alguna organización comunitaria o grupo político? 16. ¿Habla Kaqchikel? ¿Español? (Si no habla Kaqchikel, ¿Cómo se identifica—Kaqchikel?) 17. ¿Tiene usted una religión? 18. ¿Usted sigue la espiritualidad Maya o el calendario Maya? ¿Por qué? (si la respuesta es "sí") ¿Cómo? 19. Desde su perspectiva, ¿De qué se trata la Cosmovision Maya?	*Ice Breaker questions *Personal details, narrative *Spirituality, relationship to land, and perspectives on cc.

7. ¿Cómo es su comunidad? (Población, cuántas familias, qué tan grande, geografía) 8. ¿Cómo era su comunidad cuando Ud. era niño? 9. ¿Cuáles cambios ha observado en su comunidad desde su niñez? 10. ¿Hay prácticas que antes los abuelos hacían, que los jóvenes ya no hacen? 11. ¿Ha observado cambios en los ciclos del medio ambiente, desde su niñez? ¿Cuáles? (bosque, agua/lluvias, producción) 12. ¿Cómo se siente al respeto? (¿Por qué?) 13. ¿Ha escuchado sobre el cambio climático? ¿Qué es? ¿Cómo se ha afectado en su comunidad? 14. Desde su perspectiva, ¿Tienen que ver estos cambios con el calendario Maya?	Community, Environmental & Cultural Change
15. ¿Me podría comentar sobre la iniciativa comunitaria (tierras comunales, vivero de plantas medicinales, aguas termales, producción)? 16. ¿Cuál es la historia de esta iniciativa? (Trate de entender las motivaciones por involucrarse) 17. ¿Cómo se mantiene (la iniciativa)? ¿Cómo se ha organizado en la comunidad para manejar la iniciativa? 18. ¿Cómo han sido los resultados? 19. ¿Cuáles retos han enfrentado como parte de esta iniciativa? 20. ¿Por qué y cómo buscaron el apoyo de Sotz'il? 21. ¿Cómo se ha involucrado Sotz'il? 22. ¿Cómo se maneja el bosque en esta área? ¿Cuál es la motivación por manejar al bosque?	Community Initiative & relationship with Sotz'il *Transformations processes *Local/traditional actors and organizations *Challenges *Relationship with Sotz'il *Natural resource management
7. Desde su perspectiva, ¿Cuales son los aportes de la Cosmovision Maya (o sabiduría ancestral) frente al cambio climático? (¿Para los pueblos Maya? ¿Para el resto del mundo?) 8. Desde su perspectiva, ¿Hay limitaciones de la Cosmovision Maya como un recurso frente al cambio climático? (¿Cuáles?) 9. Si pudiera dejar un mensaje al mundo con respeto a la Cosmovision Maya y el cambio climático, ¿Qué sería? 10. ¿Hay algo más que quisiera aportar a esta entrevista, que no hemos abordado? 11. ¿Hay algo que me quisiera preguntar? 12. GRACIAS	*Direct perspective on the research question – positive and negative *Closing

Appendix C: Forest Calendar

Figure: Guatemalan National Forest Institute and Sotz'il's Forest Calendar from Ancestral Knowledges and Traditional Practices of Indigenous Peoples, Iximulew, Guatemala, 2020. Forest activities are listed on the left column, with X's marking the weeks of the year in which the activities are appropriate. The content is structured according to the Gregorian year, with multiple calendar systems and seasonal cycles overlaid across the top. See http://www.inab.gob.gt/documentos/serietecnica/ for the full document with explanations (in Spanish).



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