

REDISCOVERING THE ECOLOGY AND INDIGENOUS KNOWLEDGE OF  
CACAO FOREST GARDENS AND CHOCOLATE

A dissertation submitted to the Committee of Graduate Studies in partial fulfillment of  
the requirements for the Degree of Doctorate of Philosophy in the Faculty of Arts and  
Science

TRENT UNIVERSITY

Peterborough, Ontario, Canada

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Indigenous Studies Ph.D. Graduate Program

May 2022

# ABSTRACT

## REDISCOVERING THE ECOLOGY AND INDIGENOUS KNOWLEDGE OF CACAO FOREST GARDENS AND CHOCOLATE

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This intercultural rediscovery of Indigenous cacao culture draws upon Environmental Studies, Intercultural Studies, Indigenous Studies, Anthropology and Agroecology. The methodological antecedent for this kind of symbolic food study of cacao is the work done by Gustavo Esteva and others on the civilizational importance of maize. Similarly, the rediscovery of the Indigenous Knowledge of cacao explores the profound meaningfulness of cacao to ancient Mesoamerican civilization, and how that ecological, agricultural, and health wisdom can regenerate modern agricultural paradigms, and ecogastronomy.

Chapter 1 explores, meditates, and reflects upon 20 Indigenous Knowledge teachings of cacao guided and supported by a unique interpretation of the *Popol Vuh*, the Mayan oral epic and creation story, as well as 20 years of collaboration and field work experience in Mexico. The methodology in chapter 1 is rooted in a phenomenological approach to dwelling with and relating to IK in an unmediated and embodied manner. Experience, story, dream and an awareness of the challenges of looking at Oral culture teachings are combined with an intercultural analysis of the *Popol Vuh* and other supporting texts.

The spiritual ecology of the cacao forest garden of Chapter 2, seeks to make the connection between the maize milpa and the cacao forest garden milpa and posits a

unique transition theory. The transition theory seeks to operationalize these Indigenous Knowledge agricultural and crop traditions into a regenerative agricultural model. Based upon Indigenous Knowledge, this view of the cacao forest garden functionally regenerates soils, regenerates forests, and supports food sovereignty in a way that is rooted in community scale Indigenous cultural practices, techniques, and food traditions. The methodology for chapter 2 and chapter 3 of this thesis moves to an intercultural comparison and analysis of agro-ecological and spiritual ecological understandings of cacao, chocolate, and the forest garden.

Chapter 3 seeks to move from the explicating and analyzing of the ‘transition theory’ and proposes four main practical initiatives that further strengthen and explore the regenerative spiritual ecology of cacao forest gardens. The Indigenous forest garden commons of the Americas can be a powerful, unique, and fecund contribution to the intercultural dialogue around cultural regeneration in the 21st century. The Indigenous forest garden makes contributions around intercultural dialogue and reconciliation as well as current understandings around regenerative agricultural models. The cacao forest garden moves beyond an either/or narrative that separates environmental regeneration from cultural regeneration, and instead contributes to an intercultural both/and more holistic approach to regeneration that is rooted in culture and supported by agriculture.

**Keywords:** cacao, chocolate, forest gardens, Indigenous Knowledge, spiritual ecology, regenerative agriculture, intercultural dialogue and encounter

## ACKNOWLEDGEMENTS

The list of those key relationships that have nurtured and fed this research and vision for cultivating an ecological and interculturally regenerative vision of a food system, is very long. However, in a few short paragraphs I shall do my best to touch poetically on those prime movers, who have been fundamental to watering the roots and tending the fruits of this research and learning journey.

To Tim Ralfe, my late stepfather, whose love and support gave me wings and confidence to sore upon, and whose hope for a strong Canadian federation as a political dream and project has guided me almost my whole life.

To Gustavo Esteva, whose friendship and mentorship have opened my eyes to the beauty, hope, and possibility of Mexico profundo, and helped me to understand the ways in which the intercultural encounter and dialogue are keys to reimagining and rediscovering the dignity and beauty of being rooted in our places in a radical way. Friendship, openness to surprise, dignity, hospitality, and gratitude are the cornerstones of the great love and respect I have for Maestro Gustavo.

To Wayne Roberts, whose inspiration and collaboration guided this research and who sadly passed before I could finish it. Wayne made my family part of his family, and here in the lonely metropolis of Toronto he filled the role of father and mentor that I didn't realize I needed so badly. His humility, humour, service, and struggle for better food policies and systems at the municipal and provincial levels, combined with the teachings from Tim and Gustavo, continue to steer my thinking and my life's vocation.

To Dianne Lister and Don McCaskill, whose vision and leadership at Trent have helped me to brave the wilds of North American academia and successfully straddle the intercultural bridge back from Oaxaca into Ontario without abandoning all hope!

I would like to acknowledge Don Florentino Gomez, a Tojolobal elder in the Lacandon jungle who after 20 years of shared friendship and work, died in 2021 after a long battle with covid. Don Flor was the embodiment of the Indigenous cacao forest garden campesino wisdom. He was a true friend and teacher.

I must also mention père Robert Vachon, founder of the Intercultural Institute of Montreal, and a mentor whose work taught me about the nuances of intercultural encounter, dialogue, friendship, and transformation. Robert died of covid in 2020 in a nursing home in Montreal. Robert's friendship with Mohawk elder Tom Porter has informed and inspired this research and intercultural learning journey since 2003. In 2019, I had the opportunity to finally meet elder Tom Porter whose friendship with Robert Vachon and Don McCaskill overflowed into our meeting and encounter at his home in New York.

Special thanks to Dr. Asaf Zohar whose stepped in to help fill the void left by my tragic loss of advisors and mentors, and whose good eyes and thoughts and analysis made a stronger social enterprise business case for this unique actionist food research.

Finally, I would like to recognize my lovely wife Jessica, our three children Rolfe, Adam and Sloane, my mother Margaret Close, and chocosolistas like Mathieu, Dennis, and Byron for their love and support which has kept the hearth warm during the longest

nights and winters, and whose hearts and purposes remind me why I must struggle and serve.

My prayer is that this rediscovery of the Indigenous food of the gods, cacao, and the wisdom of chocolate can be a window, and a doorway for reimagining, reinventing, and regenerating both community and agricultural models now and in the harvests yet to come.

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## Key Terms

### 1. Aquaponics.

Today's aquaponics refers to a technical process by which fish are cultivated and the water circulated such that it provides excellent nutrients to plants. In the traditional Indigenous context, **aquaponics** refers more to the role that fish played in cleaning the waters, in feeding the people, in creating nutrients for floating gardens or flooded fields to benefit from. Moreover, aquaponics also included the harvesting of nitrogen rich soil from the bottom of trenches and ponds for use in mounding, and the harvesting of bottom-feeding fish to include in those mounds to make the body of soil mounds even more nutrient rich. Aquaponics in the Indigenous sense was about much more than just fish, and humans, waters, soil, and agricultural systems were integrated.<sup>1</sup>

### 2. Indigenous Knowledge (abbreviated to IK)

As a concept IK is profoundly difficult to objectify and define outside the context of a meaningful relationship.<sup>2</sup> This is because though there are IK teachings, they are only as deep and as meaningful as one's ability to be in relationship with the knowing. For me as a researcher, **Indigenous Knowledge** is not an object of knowledge, but rather is an Indigenous way of knowing. This is the most fundamental intercultural difference

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<sup>1</sup> "Ripple Farms Wins Ontario's Social Enterprise of the Year Award," *Agritecture*, June 29, 2018, <https://www.agritecture.com/blog/2018/6/27/ripple-farms-wins-ontarios-social-enterprise-of-the-year-award-presented-by-startup-canada>

<sup>2</sup> "What is Indigenous Traditional Knowledge?" Traditional Knowledge and Technology: Just Another UBC Blogs Site, accessed April 20, 2022, <https://blogs.ubc.ca/traditionalknowledgetechnology/revaluation-of-indigenous-cultures/what-is-indigenous-traditional-knowledge/>

between Western objects of knowledge and the Indigenous spiritual ecological ways of knowing. As Don McCaskill recently wrote:

I also learned that Ojibway-Anishinabe ways of doing and knowing involve a personal relationship with the knowledge. It entails developing attitudes of respect, sincerity, honesty, and humility. Knowledge is acquired slowly, step by step, and must be earned, sometimes through sacrifice, suffering, and self-discipline. During this process I was slowly building up my Medicine Bundle. And spirit is an essential component to understanding. As the Mohawk Elder Tom Porter states, “The moment you take spirit out of anything you have already defeated yourself”.<sup>3</sup>

Furthermore IK in its traditional context was an Oral knowledge. As Walter Ong<sup>4</sup> and others have correctly identified it is virtually impossible for the textual mind to cross back over to understand the world through the lenses of the Oral magma. However, in a hermeneutic<sup>5</sup> sense one can try to read the Oral epic of the Popol Vuh with an awareness of the limitations of the word that is not rooted in and initiated to the living culture. Suspending the assumptions and presuppositions of one’s own cultural way of seeing, reading, and being in the world is not an easy task, and yet trying to engage in this suspension of the textual mind is part of the intercultural method.

### 3. Intercultural imperative

It is the belief of intercultural theorists like Robert Vachon, and Raimon Panikkar<sup>6</sup> that in the current age of cultural overlap and encounter, interaction, co-motion and conflict that a new cultural model must emerge to facilitate and host a dialogue and encounter

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<sup>3</sup> Don McCaskill and Jerry Fontaine, *Di-Bayn-Di-Zi-Win To Own Ourselves: Embodying Ojibway-Anishinabe Ways*, (Toronto: Dundurn Press, 2022), 30–31.

<sup>4</sup> Walter J. Ong, *Orality and Literacy: The Technologizing of the Word* (New York: Routledge, 2002).

<sup>5</sup> Hans-Georg Gadamer, *Philosophical Hermeneutics* (Los Angeles: University of California, 2008).

<sup>6</sup> Gerard Hall, “Raimon Panikkar’s Contribution to Interfaith Dialogue,” in *Interfaith Dialogue: Global Perspectives*, ed. Edmund Kee-Fook Chia (New York: Palgrave Macmillan, 2016), 251–264, [https://doi.org/10.1057/978-1-137-59698-7\\_19](https://doi.org/10.1057/978-1-137-59698-7_19).



amongst all the cultures and beings of the world. This **intercultural imperative** acknowledges that the failure to imagine this re-evolution of our current human-centric politics will result in ever more wars, ever more ecological deterioration, and ever greater inequity in the world between cultures.<sup>7</sup>

#### **4. Food of the gods.**

The **food of the gods** is a reference to the theobromae (theo -god, bromae-food) cacao seed, which is an exceptionally nutritious and functional seed. It is high in fibre, protein, fat, micronutrients, and antioxidants. It grows on trees in easy to harvest pods. It tastes delicious and improves blood flow and muscle function while making us “feel” good with stimulants for heart, lungs, and brain. Furthermore, it can be stored for long periods of time. Cacao butter and cacao solids work with the human anatomy to improve blood flow on the tongue or the skin, and therefore are important spices and body care properties as well. The properties of the cacao are very healthy, however, the Mayan origin story also indicates that the origins of cacao were divine, and the story of the *Popol Vuh* re-examined in Chapter 1 explores this divine origin at length. Cacao is not only good for us, it also is a nourishing and ecologically regenerative crop when it is grown inside the Indigenous cultural matrix of the forest garden.

#### **5. Food Actionist Research**

A food actionist research methodology as defined by Wayne Roberts:

**THIRD POINT:** We need to move from activism to actionism.  
*One of the new social technologies of the past 50 years is the rise of social*

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<sup>7</sup> Robert Vachon, “Guswenta or The Cultural Imperative: Towards a Re-Enacted Peace Accord Between the Mohawk Nation and the North American Nation-States (and Their Peoples). Part 1: The Intercultural Foundations of Peace,” *InterCulture* 127, no. 2 (Spring 1997): 1–83.

*entrepreneurship. It goes beyond “be the change you want to see.” It takes up the challenge to create the change you want to see and be.*

Social enterprises can be for-profit, not-for-profit, co-ops, charities, whatever. Turn a cause into an organization with a product or service that people need and want, and start moving the action agenda. Move from opposition to proposition and from talk to service — that’s the essence of the social enterprise!

One dominant element of the American spirit is positivism. How much time do social cause leaders spend promoting the positive, as distinct from opposing the negative? How much energy is invested in being for, not against, in making the alternatives visible, viable and actionable?

Food is made for actionism, as shown by the growth of farmers markets (is there a more pleasant tool for overcoming urban–rural divide?), craft beer, urban agriculture, and hundreds of artisanal products that are rocking the food world.<sup>8</sup>

I have spent 13 years exploring the concept of food actionism with Dr. Wayne Roberts, and Gustavo Esteva amongst others, enough to know that conviviality and practice are essential parts of defining food actionism. However, from the perspective of social, political, and environmental change, **food actionism** is a powerful vehicle because it is not abstract, it is personal, embodied, spiritual, in relationship, and profoundly rooted in culture, crafts, and community.

## 5. Forest Garden Commons

**The forest garden commons** is a compound concept that is the result of an intercultural collision between the Western concept of the commons and the Indigenous forest garden traditions of México profundo.<sup>9</sup> By looking at the nature of communal land holdings in the State of Oaxaca Mexico,<sup>10</sup> and how land holding traditions emerge from an

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<sup>8</sup> Wayne Roberts, “Food Actionism Can Trump Trump,” *Medium*, November 13, 2016, <https://medium.com/land-and-ladle/food-actionism-can-trump-trumpism-4d9fffd6a652>

<sup>9</sup> The Ecologist, “Whose Common Future: Reclaiming the Commons,” *Environment and Urbanization* 6, no. 1 (Spring 1994), 106–130.

<sup>10</sup> Jaime Martínez Luna, “The Fourth Principle,” in *New World of Indigenous Resistance*, ed. Lois Meyer and Benjamín Maldonado Alvarado (San Francisco: City Lights Books, 2010); Gustavo Esteva, *The Oaxaca Commune and Mexico's Autonomous Movements*, 1st ed. (Oaxaca: ¡Basta!, 2008).

Indigenous civilizational model referred to as Mexico profundo, the meaning and scope of Indigenous forest garden regeneration takes on new symbolic meaning and scope. Cacao's role in these traditional forest garden communal lands is a powerful symbol of and vehicle for discussing the shape, content, and meaning of Mexico profundo in a 21st century intercultural context. Part of the underlying presuppositions of the Indigenous forest garden model of the Americas is its connection to a more communal land and political Indigenous governance model. The same economic and global forces threatening the cacao forest gardens are threatening these Indigenous communities and cultures. Furthermore, strengthening cacao forest gardens is a radical and symbolic act which can be an expression of the regeneration of a radical pluralism in the 21st century. Moreover, the ecological resilience and regenerative characteristics of the forest garden for the seven generations to come, make it a powerful symbol and strategic vehicle to talk about the remaking and regenerating of new intercultural commons both socially and ecologically in the 21st century and beyond. Literally speaking, those willing to plant forest garden groves in whose shade they may never stand, or whose fruits will take 10 years to mature, see their actions in a different light that serves a more regenerative vision and purpose of culture and the community's connection to place.

## **6. Mexico Profundo**

**Mexico profundo** is the name and concept put forward by the famous Mexican Anthropologist Guillermo Bonfil Batalla in his seminal book called *Mexico Profundo Reclaiming a Civilization*. The concept of Mexico profundo is that the character of

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Mexican culture can only be understood if one recognizes the Indigenous Mesoamerican civilization that originated in the region. Mexico *imaginario* is the imposition of the nation state and the modern neoliberal agenda onto the deeper and more resilient Indigenous base culture.<sup>11</sup>

So, according to Bonfil, (on the other hand) what we have is the Mexico profundo, the deep areas of Mexican society -- basically the Indigenous people, but also many other people that are not Indigenous -- who have in the mind and in the heart something alternative to the Western project, something radically different. This is the Mexico profundo and this is clearly illustrated by the Zapatistas. This is the kind of conflict that we are trying to process. What we are seeing today in our reality is this Mexico Profundo affirming itself. Presenting itself in a different view.<sup>12</sup>

## 7. Milpa

The UNESCO site quote from the Universidad de la Tierra defines the concept of **milpa** within the context of intercultural dialogue and discussion:

The domestication of maize began anywhere between 5,000–7,500 years ago; the oldest archeological remains were discovered in Oaxaca. What is significant about this is that maize can only grow with human intervention as the corn cob can only spread its seeds with the help of humans. Maize grows best when it is accompanied with beans, squash, chilies, tomatillos, avocados, gourds (in many circles this is known as the ‘three sisters’—corn, beans and squash)—in a small and manageable area that is nourished by its use during two continuous years (followed by 8 years lying fallow). The nourishment of these cultivated areas can be understood as a *milpa*. Maize is the essence of food, of fiesta, of cultural representation, and for thousands of years, of *milpa*, of cultural sustenance, self-sufficiency and nourishment enabling a sacred and intimate connection with the Earth. Mesoamerican civilizations, although vastly different in languages, religious beliefs, and cultural practices, are similar in their cosmovisión as oriented to learning and obeying the principles of the natural world. Human beings are seen as part of, as deeply connected to the natural world and the entire cosmos—rather than as superior to, trying to obtain a mastery over. Thus, in sharp

<sup>11</sup> Guillermo Bonfil Batalla, *México Profundo: Reclaiming a Civilization*, trans. Phillip A. Dennis. (Austin: University of Texas Press, 1996).

<sup>12</sup> Gustavo Esteva, “The Revolution of the New Commons: Beyond Development, Beyond Economy, Beyond the Individual Self, Beyond the Nation State,” *In Motion Magazine*, April 8, 2006, [https://inmotionmagazine.com/global/gest\\_int\\_4.html](https://inmotionmagazine.com/global/gest_int_4.html)

contrast to the Spanish conquistadores, agricultural ‘work’ to *milpa* Mesoamerican cosmovisión is about developing this learning, such as through the design and ritualized cultivation of *milpa* that incorporates optimum utilization of land and local resources, adapting to local conditions, starting with systems of knowledge and technology already in place—and social organization of work and the preferences and value of the particular group. Milpas bring together multiple varieties of foods that are grown in small plots that are adjacent to homes.<sup>13</sup>

## 8. Presuppositions (mythos)

**Mythos** are the buried **presuppositions** and roots of a cultural collective unconscious that are not easily recognized or clarified with logical tools. They are the axiological pillars and roots that shape and form the very way we see, the lenses of cultural perception<sup>14</sup>. Suppositions are oftentimes embedded in action; however, they are more clearly visible to the actor or critical thinker. In Robert Vachon’s intercultural dialogue and encounter discourse, he refers to presuppositions as the mythos or the roots of the tree of culture that we cannot see, but that we know are there. Bringing the mythos into the light, or into critical analysis by logos kills mythos in a sense, which recedes, and yet *logos* help to make us aware of the cultural bedrock and magma that are beneath our thinking. The image of the intercultural tree best describes this as it was referenced in Chapter 1 and done by Kalpana Das, the great supporter and facilitator of Vachon’s work at the Intercultural Institute of Montreal for more than 2 decades.<sup>15</sup>

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<sup>13</sup> “‘Without Maize There is No Country’ (Part 2) Milpa Cosmovision and Food Sovereignty,” *Enlivened Learning* (blog), December 28, 2012. <https://enlivenedlearning.com/category/universidad-de-la-tierra/page/2/><https://enlivenedlearning.com/category/universidad-de-la-tierra/page/2/>

<sup>14</sup> Peter C. Phan and Young-chan Ro, eds., *Raimon Panikkar: A Companion to his Life and Thought* (Cambridge: James Clarke & Co, 2018).

<sup>15</sup> Vachon, “Guswenta or The Cultural Imperative: Part 1.”

## 9. Radical Pluralism (Vachon)

**Radical Pluralism** is the political principle of accord building and is guided by the Mohawk concept of the good mind and the Intercultural Institute of Montreal's vision of an emerging intercultural paradigm. Cultivating the good mind through an intercultural dialogue and encounter means having a radical openness to the culture of "others" that come together in ways that do not deny or destroy the otherness of the other, nor do damage to one's own culture, dignity, or safety. Radical pluralism is still a project and a new kind of political "myth." The foundational presuppositions of radical pluralism are not yet clear, and it is the work of current generations to take up the creative work of exploring and expressing what this more hospitable to all cultures politics will and can look like. It is suggested by theorists of interculturality like Robert Vachon and Gustavo Esteva<sup>16</sup> that the finding and creating the language and the symbols of radical pluralism is of the utmost importance, but not just empty words but words attached to stories that express the values and inclusiveness of this new political paradigm. One example of the symbol of this kind of radical pluralism is expressed by the Mohawk Guswenta as described at length in Robert Vachon three-part series that unpacks the Guswenta treaty of the Mohawk with European settlers and explores it as a paragon and exemplar of what a more hospitable intercultural dialogue and radical pluralism can and does look like. Another Indigenous expression of this more inclusive politics is expressed by the Zapatista call to make a world in which many worlds are embraced. It is the argument

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<sup>16</sup> Gustavo Esteva, "A World Beyond Market and State: Hope From the Margins," in *The Wealth of the Commons: A World Beyond Market & State*, eds. Davis Bollier and Silke Helfrich (Amherst: Levellers Press, 2012), 192–198.

herein that the Indigenous forest garden commons can be a powerful symbol and vehicle to embody radical pluralism and interculturality both symbolically and literally. The forest garden in this sense is the fertile medium, or social compost out of which the messages and roots of radical pluralism can be imagined and strengthened in realistic ways. Radical pluralism addresses issues of environment, economy, culture, and community of all beings, without reducing the analysis to one sole narrative.

### 10. **Spiritual Ecology (Cajete).**

Fundamental to the concept of Indigenous **spiritual ecology** is the need for an unmediated relationship between human beings and the many realms and beings of the natural world. This includes many ways of knowing and includes humans, animals, plants, soil, and water. Biophilia, dwelling, sensory, logical, and extralogical ways of knowing are part of this concept of a phenomenologically rooted experiential approach to knowing about place, plants, and all beings. Spiritual ecology is not a doctrine nor a formulaic approach. It is an attempt to describe and operationalize to a certain degree some of the most powerful components of an Indigenous approach to accessing ecological knowledge and being within the land. Indigenous spiritual ecological approaches do not fundamentally have an operations manual and are not akin to a Western scientific approach but are fundamental to a *Native Science* approach as expressed and described by Gregory Cajete. Spiritual ecology emerges from a millenary Indigenous approach to living and dying that held together: ecology, economy, politics, gastronomy, and spirituality. The practice of spiritual ecological approaches requires one to use all the senses, to incorporate reason, analysis, and observational feedback loops.

Experimentation and testing are part of this. However, dreaming, intuition, and learning from the animals and spirits are also key elements to this approach, and in some instances sacred medicines are used to help facilitate a dialogue and unmediated understanding between humans, plants, animals, water, and soil. The highest form of spiritual ecology is a dialogue with nature that attains the level of communion, but without the religious baggage that word usually implies. Spiritual ecology is not a set of rules, but it is fundamentally a way of describing holistic Indigenous ways of knowing that transcends the usual compartmentalization of economy, ecology, politics, food, etc. However spiritual ecology recognizes human agency as a way to direct and harness and learn from those natural basic teachings, it is not an either/or approach between learning from nature or controlling nature. Spiritual ecology is a way of transcending the limitations of agroecological approaches that overly center on the use value of the inputs of forest gardens for example. Spiritual ecology recognizes the dignity and the integrity of all beings, and not just the needs of humans, and it is rooted in the gift and surprise of the living relationships.<sup>17</sup>

## **11. Soil of the Gods.**

**The soil of the gods** recognizes the IK of plants and botany that recognizes that a seed is not enough, and that the soil and the womb must also be cultivated, prepared, and renewed. The soil of the gods approaches of Indigenous spiritual ecological traditions

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<sup>17</sup> In 1995, David Kinsley published the first major textbook on this subject, *Ecology and Religion: Ecological Spirituality in Cross-Cultural Perspective* (Prentice-Hall), while a year later Roger S. Gottlieb edited a monumental benchmark anthology, *This Sacred Earth: Religion, Nature, Environment* (Routledge).



include things like soil mounding, *tierra preta*<sup>18</sup>, fishmounding, aquaponics, integration of nitrogen-fixing plants, usage of calcined lime to break down waste and nourish soil and plants and many other techniques. Indigenous practitioners of spiritual ecology did not see the “dirt” as some passive input, but as a sacred matrix of life, and the body of the sacred Mother Earth. The soil of the gods is a reference to the fundamental regenerative importance fo the soil and the Mother Earth in IK approaches.

## **12. Three Sisters Milpa.**

The traditional Three Sisters garden is made up of maize, beans, and squash/pumpkin. Maize is the major food source which can be dried for long periods of time. The beans are the nitrogen-fixing legumes that use the maize as a structural support to climb. The broad-leafed squash provides shade for soil from the hot sun, weed suppression, and food in the form of flowers and abundant shoots that can be steamed to make a delicious soup with their flowers. Furthermore, the squash prickles and sprawling vines help impede pests like racoons and support the Three all together in heavy winds or bad weather. The Three Sisters' agricultural companion crops form a complete carbohydrate ecogastronomy in a small footprint of land. Furthermore, the Three Sisters agriculture approach stretches from Peru to Ontario and is more than 10,000 years old in the Americas. When we refer to the **Three Sisters** it does not suggest that there are not many other companion crops beyond the Three, only that these Three were most prevalent. For example, in the Aztec diet it is said that the four main protein supports of their diet were

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<sup>18</sup> Plant People Passion, “Back to the Future: Terra Preta—Ancient Carbon Farming System for Earth Healing in the 21st Century,” Permaculture Research Institute, May 25, 2010, <https://www.permaculturenews.org/2010/05/25/back-to-the-future-terra-preta-%E2%80%93-ancient-carbon-farming-system-for-earth-healing-in-the-21st-century/>

maize, amaranth, chia, and beans, which provided for a complete balanced protein from small plot intensive agriculture. The words milpa and the concept of a functional and mutually supporting Indigenous polycultures are used interchangeably here.

### **13. Three Pillars Forest Milpa.**

The **Three Pillars** are a reference to the forest garden polycultures developed in Mesoamerica during the last 5000 years. Cacao is the leader of that forest garden of Mesoamerica and must grow in a minimum of 15% shade. Cacao trees are understory trees and do not grow tall. Vanilla orchids were planted using cacao trees and other understory trees as supports to climb similar to the way that beans used the structural support of maize. The odour of the vanilla orchid would attract pollinators to the forest garden and the alkaline vanilla pods complimented the acidic nutritious cacao seeds in gastronomy. This is an example of complementarity in the crops and is the basis of the polyculture approach. The achiote is the third pillar. It provides shade, fights pests, attracts pollinators with its bright coloured flowers, protects the soil from erosion and drying out with its thick leaf canopy, grows fast, and provides a wonderful colour and flavour profile to the final cacao paste. The Three Pillars of the forest garden are a milpa polyculture Indigenous to Mesoamerica, but forest garden agriculture stretches from the Amazon basin to Ontario as well, covering the entire of the Americas in the Indigenous agricultural tradition with many variants in the species therein contained. The Three Pillars is a reference to a forest garden Indigenous polyculture system.<sup>19</sup>

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<sup>19</sup> Mario M. Aliphat Fernández and Laura Caso Barrera, “La Tríada del Chocolate: Cacao, Vainilla y Achiote,” *Artes de Mexico* 10 (March 2011): 46–51.

#### **14. Transition Theory (from wild Forest, to Maize Milpa, To Forest Garden back to “wild” Forest)**

The food basket of the Three Sisters field garden was sustainable, and fructiferous. However, beyond a certain scale of intensification and increase in human populations, deforesting lands for ever-extending field gardens would not have been environmentally or culturally sustainable for Indigenous peoples. This original theory suggests that Indigenous spiritual ecological pioneers in the milieu of agriculture discovered a way to enhance and overcome the limitations of field gardens, namely that they needed forest to be cleared, and that they needed continuous annual planting and soil enhancement to remain sustainable. With the transition back to a semi cultivated perennial forest garden, the highly sustainable agriculture of the Three Sisters milpa, re-evolved into the highly regenerative Three Pillars milpa. The forest garden evolutionary step took many of the best tools, techniques and learnings from the Three Sisters field garden techniques and applied them to the forest garden. Therefore, after five to 10 years of planting a field milpa, a forest garden milpa could begin to emerge and the two systems could overlap in a way that was both less labour intensive, and more planned in terms of a full cradle-to-cradle lifespan of the soil, the foods needed, the forest, and the perennial food, fuel, fibre, and fauna they could provide. The combination of field and forest gardens is the basis of the Indigenous agricultural cornucopia of old, and the operationalized inspiration for a regenerative agriculture of the forest garden going forward.

## Prologue

This prologue is called “Not just an: Artisan, Activist or Academic.”

Traditional people were and are natural philosophers, but if we look closely at their words, we find deep insights described in the simplest of language. Thus, self-determination, sovereignty, hegemony, empowerment, and colonialism are nice big words that philosophers and intellectuals use, but what do they really mean? I often feel they assist us in creating a set of artificial problems, wholly abstract in nature, that we can discuss endlessly without having to actually do something.<sup>20</sup>

Right from the beginning of this research project and apprenticeship with Zapotec elder and deprofessionalized intellectual Gustavo Esteva, the research methodology was framed as being engaged, embodied, and in service to the community. Simultaneously we have struggled with the language to describe this intercultural research and work that is neither simply theoretical nor practical, activist nor academic. This work uses an embodied and actionist approach that does not easily fit into academic formats, and much of the dissertation takes up the defining of the actionist research approach in a non-linear and embodied way. The final chapter of the dissertation explores at length the actionist initiatives that this researcher believes can practically, and beneficially be implemented in the ecological regenerative cacao forest garden commons. The entirety of this work is aimed not just at study, research and re-discovery of the IK of the forest gardens and cacao, but of its regeneration and renewal and culturally appropriate and spiritual ecological initiatives in the 21st Century.

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<sup>20</sup> Vine Deloria Jr., “Intellectual Self-Determination and Sovereignty: Looking at the Windmills in Our Minds,” *Wicazo Sa Review*, 13, no. 1 (Spring 1998): 25.

Through thousands of hours of work and walking and reading about Indigenous cacao forest gardens, and Indigenous maize milpas the potentials for both ecological renewal and nutritious food baskets (cornucopia) emerged. This work and this opportunity lead to the question of how I could participate in the regeneration of the forest gardens of Mexico profundo, which in turn lead to the re-discovery of the transition from the maize milpa to the cacao forest garden milpa, that is described and operationalized in detail in chapter 2 of this dissertation, and described as the transition theory.

Today's ecological, intercultural, and political problems are of a new scale and shape, they have become truly monstrous in scale and global scope. From day 1 of my work in Mexico in civil society and Zapatista networks the urgency of regenerating culture and moving beyond resistance to liberation was a clear call to action. In this sense academic research is often times not useful to the embodied struggle, and some educational theorists and researchers in the ivory tower of universities seem to be finally waking up to this:

A group of education specialists are urging researchers to challenge the “structures and regulations” which define academic scholarship, arguing that different approaches are needed in an age of climate change, COVID-19 and rising populism.<sup>21</sup>

Following the lead of Gustavo Esteva and others in Oaxaca, our research sought not just to study the cacao forest gardens, or to buy from the cacao forest gardens, but in the age of globalization and threats to traditional communities and agricultural models, to support

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<sup>21</sup> “Write Fewer Papers, Take More Risks”: Researchers Call for ‘Rebellion’ Against Academic Convention,” University of Cambridge Faculty of Education News, accessed June 22, 2022, <https://news.educ.cam.ac.uk/fewer-papers-more-risks>.

the regeneration of the cacao forest gardens of Oaxaca, Mexico. We did this not through funding from government agencies, but through intercultural friendships and by founding our own chocolate social enterprise to sell the symbolic products of these intercultural dialogues and encounters through symbolic products.

Esteva's work on maize was central to this understanding of cacao, however, the research was not as developed with regards to understanding the Indigenous Knowledge of the cacao forest garden milpa as the maize milpa. Similarly even in the North the understanding of the maize milpa was much more prevalent than the understanding of the maple forest garden.

Simultaneous to the Mexican Indigenous and civil society campaigns to regenerate and defend maize, the Haudenosaunee elders and researchers such as Rick Hill of Ohsweken First Nation were engaged in a type of spiritual ecological re-discovery. Hill wrote recently in the Legacies project about how he re-discovered the cultural importance of maize to his health and spirituality in the context of a broader Indigenous movement:

Then I read a book by Arthur C. Parker on Haudenosaunee corn. It spoke of a spiritual connection to corn that helped me understand the joy of running through the corn field when I was a youth. At the University of Buffalo, I came into contact with John Mohawk, who was knee deep into white corn cultivation as a defiant act against capitalism. He believed in communal farming as a way of bringing back community. It kind of worked, and it kind of didn't work. A small community of white corn-centric folks emerged – Jose Barreiro, Katsi Cook, Jorge Quintana, Norton Rickard and Jane Mt. Pleasant. White corn was planted in abundance with a place called Crow's Nest, outside of Ithaca. It was there that I first harvested white corn, dried it and took it home.<sup>22</sup>

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<sup>22</sup> "Rick Hill," Legacies Earth to Tables, accessed June 22, 2022, <https://earthtotables.org/collaborators/rick-hill/>.

From a research perspective, it was very powerful seeing how the combination of experience and research from Mexico cast new light upon research and regeneration opportunities in the context of the Haudenosaunee agricultural models of the North, and similarly, how the Haudenosaunee ceremonies and knowledge keepers of the Haudenosaunee cast light on the meaning and importance of the spiritual ecological agricultural models of Mexico.

In a chapter on the “Iroquoia” author Matthew Dennis writes in detail about some of these overlooked similarities and opportunities for cross-cultural learning from Mesoamerica, to North America. He writes:

Modern geographers, anthropologists and historians have better recognized the sophistication of Native American agriculture. Hardly primitive, these horticultural systems do not deserve the invidious terms “primitive” “slash and burn” “shifting” given them”...ecologists have most closely studied small-scale or tribal societies practicing “shifting agriculture” in rain forest environments. Many of their conclusions may be applied to the Iroquois and their neighbors. The Iroquois “swidden plots and their surrounding environments share certain features with the tribal agricultural systems of the tropics. Both are least partially “closed cover systems” because not all trees are removed from crop fields and because crops are planted, not in rows aligned in open fields but rather in a tightly woven....way that maintains a dense biological fabric.<sup>23</sup>

Many of the observations and themes on the IK of these systems and the ways in which they stewarded the ecological environment in intergenerational ways, gave rise to the describing this as a transition theory described in chapter 2 of this dissertation.

Furthermore, making this connection between the Iroquois and the Mayan forest gardens lead to the importance of participating in the regeneration of the forest garden commons of the North and not just of Mesoamerica. Europeans clearly did not understand the

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<sup>23</sup> Matthew Dennis, *Cultivating a Landscape of Peace: Iroquois-European Encounters in Seventeenth-Century America* (Ithaca: Cornell University Press, 1993), 31–32.

Indigenous forest garden commons, and the cultural and perceptual blinders lead to an obfuscation and burying of this brilliant agricultural approach through a colonial approach and through a lack of understanding. As Jack Weatherford writes in his seminal book *Native Roots: How the Indians Enriched America*:

The settlers who arrived from Europe learned from the natives how to utilize the food and medicinal resources of the forest. The settlers had some knowledge of forests, but the North American forests offered new plants. The Indians taught the settlers to gather pecans, hickory nuts, pine nuts, acorns, and walnuts as well as wild fruits such as pawpaw and maypop. The Indians introduced the settlers to the use of sassafras and cranberries. The European settlers already knew about honey, but they had no experience with maple syrup and its by-products....<sup>24</sup>

One key element that makes this research and work different is the overlap between the research into the spiritual ecology of the cacao forest garden and the initiatives to support that, but also the fact that I have been leading a social enterprise that works with cacao and other forest garden products for close to 20 years in a practical and craft industry milieu. There is a clear tension in my life's work, and life research; between learning and earning, between dignified work and research funding, between creativity and productivity, and between value propositions and value generation. This tension is bound up with the intercultural challenges in the dialogue and encounter between Western and Indigenous cultures. It is important to note that this is not an either/or answer from the Indigenous or the non-indigenous perspectives. As famed intercultural anthropologist Frédérique Apffel-Marglin wrote in *InterCulture* 2008:

More broadly, I realized that alternatives to the hegemonic development project need not be conceived as its complete antithesis, rejecting anything connected with the development/modernization project. Given the fact that campesinos need money, as well as are entitled to many of the benefits money can bring, I felt that I wanted to examine a potentially viable alternative, namely Fair Trade

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<sup>24</sup> Jack Weatherford, *Native Roots: How Indians Enriched America* (New York: Fawcett Books, 1991), 51.



cooperativism. Fair Trade cooperativism is a hybrid phenomenon, using the global market while simultaneously contravening some of its basic tenets.<sup>25</sup>

The busy-ness of business and economic thinking does not lead naturally to an ecologically regenerative or spiritual ecological approach, and yet that has always been core to the research paradigm since the early days of the Masters in Environmental Studies or the Doctoral apprenticeship in Mexico's Universidad de la Tierra. ChocoSol continued to struggle to make eco-revolutionary chocolate and that was the mission. However, a bigger and deeper cultural paradigm of research and vision was being incubated in the ChocoSol learning community and that kept me going forward in a personal sense. One of the problems is that in Canada there is little room in business for thinkers and philosophers. Just like in academia there seems to be little room for artists and artisans. Inhabiting the space between these worlds has made me an outlier and oftentimes not successful in either camp. Bridging these worlds and fighting the norms has meant moving beyond the *status quo* of business as usual, and beyond the critical understanding of theorists into a type of embodied artisanal symbolic good, namely-chocolate. This medium is the message approach of the chocosol chocolate, coffee, and tortillas is the actionist and iterative production of our research, re-discovery and heart. It is our embodied and incarnated actionist medium and message that feeds our visions, missions, and bodies simultaneously!

When numerous times throughout the dissertation I say that the medium is the message, the point is not to look at how cacao and chocolate not as the answers, but

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<sup>25</sup> Frédérique Appfel-Marglin, "The Potential of Fair Trade for Bio-Cultural Regeneration of Marginalization Groups in the South: The Case of the Oro Verde Coffee Coop in Peru," *InterCulture* 155 (October 2008): 8–9.

rather to see how the IK/medicine of cacao and chocolate are examples of the alternatives when framed in an intercultural matrix. As I come to this point of return, I see the pedagogy and the curriculum as being very dialectical, and yet it is also a spiral. The roots of the research are going deeper, and the polycultures of the forest garden are now providing shelter and shade for another generation of questions and more tender and beautiful research questions to emerge. The cacao forest garden is a powerful symbol rooted deep into the DNA of Turtle Island's Indigenous Knowledge. Let this exploration be just one of the many doorways to exploring this powerful symbol as a literal, figurative, spiritual, and embodied place of learning and eco-cultural regeneration.

Behold the earth!" So I looked down and saw it lying yonder like a hoop of peoples, and in the center bloomed the holy stick that was a tree, and where it stood there crossed two roads, a red one and a black. "From where the giant lives [the north] to where you always face [the south] the red road goes, the road of good," the Grandfather said, "and on it shall your nation walk."<sup>26</sup>

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<sup>26</sup> John G. Neihardt, *Black Elk Speaks* (Lincoln: University of Nebraska Press, 2014), 6.

## Positionality

The words that come before all other words are the words of thanks-giving. I am grateful for the sacred food/medicine of cacao. I am grateful for my initiation to working with cacao and chocolate firstly because of Maestro Gustavo Esteva's invitation to work with him in Oaxaca in 2001; and secondly, I am grateful to Dona Jacintha, Gustavo's Zapotec neighbour in San Pablo Etla, who initiated me to her great grandmother's 250 year old chocolate making recipe in November 2003. I am grateful to Mama Nata, the old Zapotec tejatera who shared her love of making drinking chocolate. I am grateful to Don Florentino Gomez, my Tojolobal father in the jungle, who shared his love of the forest garden of cacao with me as he shared his love of his people and neighbours. Don Flor reminded me to listen to my dreams, to learn from the birds and the boa constrictors, and to most importantly be true to my word through humility, hard work, and hospitality. I am grateful to Mama Naty, Don Flor's widow, whose achiote stained red hands are the colour of the earth and whose gentleness is as pure as a cold drink of the clean emerald waters of the Lacandon jungle. I am grateful to Don Maxino Martinez, the Chiantec elder and leader, with whom I have shared 15 years of hard work re-generating the white cacao (patastle) in the forest gardens of the Chinantlec community of San Felipe de Leon, Oaxaca. I am grateful to the hundreds of other villagers and tecnicos like Salomon Garcia

and Don Tito Jimenez who have shared important insights, walks in the forest gardens, and their knowledge of cacao cultures with me.

In Chapter 1 of this dissertation, I explore the research questions about the IK teachings of cacao and chocolate, framed by two main authorities: 1) unmediated relationship and dwelling with the *materia prima* of cacao and chocolate, and 2) the Mayan Oral Epic, The *Popol Vuh*. This exploration challenges the reader to see and understand the spiritual ecological IK content and traditions of cacao and chocolate from an intercultural perspective. Before unpacking these interpretations, I examine how I came to ask the IK question: ‘What is the medicine of the cacao teaching me?’ ‘Who am I to ask this question?’ and ‘What are some of the ways in which I am asking these questions about the IK teachings embedded in the cacao?’

In Chapter 1, the learning journey I am inviting the reader on is shared through story, example, and a detailed reflection and meditation on the mythos of the *Popol Vuh*. Over the past 20 years I have explored, studied, and worked with cacao and chocolate from the Indigenous forest gardens to its final product and waste byproducts. I have shared cacao and chocolate in the Indigenous markets of Oaxaca as well as in workshops and seminars across North America. Underlying this work with cacao and chocolate is the recognition of the intercultural imperative to reconfigure our relationship to land, to forest, and to cacao as a food medicine. May this treatise invite the readers to walk with renewed hope and appreciation for the regenerative Indigenous forest gardens of the Americas!

In 2002, while doing a Master's in environmental studies, I asked Gustavo Esteva about what research methodology I should be using. Gustavo replied: "You can use many different methodologies as long as you remember not to *use the research* but instead *live it*." Since that day, my research and work have been inseparable from my life, my vocation, and my higher purpose. This challenge is the positionality of this actionist food research methodology.

Finally, after 12 years of research and work at Trent University's Indigenous PhD program, such insights are becoming clear stepping stones for a learning journey that is still unfolding beyond this doctoral dissertation. This dissertation is not the sole goal of this research, it is an iteration that has helped to deepen my knowledge of the medicine of cacao and chocolate and the potential of cacao and the Indigenous forest gardens of the Americas, as vehicles for intercultural and ecological regeneration. Doing this research opened space in my busy life to maintain a strong working and thinking relationship with my mentor Gustavo Esteva in the last 12 years of his life. This doctoral research kept questions about spiritual ecology, interculturality, and Indigenous regeneration front and center in the busy-ness of business, family life, and the clarifying of my vocation in life.

Shortly after beginning this doctoral research in 2010, Cree Elder Rebecca Martell came to Trent University to teach about IK (Indigenous Knowledge). As our IK PhD class sat in a circle with Rebecca, we learned some of the most basic teachings about what it is to be a man and/or a woman from her Cree tradition. During our IK teaching circles with Rebecca she introduced us to the concept of the medicine bundle by giving us the gift and teachings of the sweetgrass, encouraging us all to carry it in our bundles

going forward. She also shared some of her work that uses fasting and the sweat lodge. Afterwards we each had an opportunity to speak with Rebecca about our research questions. I could see that she was very interested in how good food was important for rebuilding the body and mind of Indigenous people recovering from addictions and seeking to support and nurture the next generation in the best way possible. When I had an opportunity to talk to her about how cacao foods nourished the body, she was very intrigued. I shared with her my passion for cacao and chocolate as a powerful and spiritual food medicine. Her response to this knowledge sharing was to ask me: “What is the medicine of cacao teaching you?”

Since that day, I have been asking the question: “What is the medicine of cacao teaching me?” I have sought to approach that question from a myriad of perspectives, through reflection, experience, textual analysis, conversation with Indigenous cacao farmers, and reflection upon intuition and dream. From an Indigenous studies perspective, I am careful not to reduce the understanding of the medicine of cacao to a scientific explanation. In the logocentric scientific form of explication, the beauty of the Indigenous values and spirituality of the cacao medicine retreat. Like sweetgrass, the medicine of cacao is in my bundle, and I respect it and see myself as being in service to the beautiful spiritual ecologies of cacao and chocolate.

For this reason, to understand Rebecca Martel’s question, I am faced with the challenge of regenerating and rediscovering Indigenous ways of understanding and relating to the cacao so that it can share its teachings and medicines, but the cacao cannot simply do it by itself. To engage in an IK reflection on the medicine of cacao, one must

renew and respect the rituals and the ceremonies rooted in the respect for the living nature. The research seeks to cultivate an unmediated phenomenological relationship to the cacao with all the senses and faculties: taste, touch, sight, smell, reflection, meditation, intuition, and dream. Dwelling in this way with the question of the teachings of the medicine of cacao, is to seek IK that feeds the community of all beings; from water and soil to field, forest, and sky. To engage in a phenomenological approach is to:

...begin by reawakening the basic experience of the world, of which science is the second order expression.<sup>27</sup>

The spiritual ecology of cacao and chocolate is my passion, my vocation, and my life's work. I have spent more than my share of the 10,000 hours<sup>28</sup> dwelling with the *materia prima* of the cacao and chocolate in a phenomenological sense.

Creative participation in nature provides a glimpse of the human nature that has grounded our sensual experience. Before we developed modern perceptual habits and linguistic prejudices, this experience was common. The perceptual process upon which Native science rests remains a mystery for most moderns. It is certainly not the "real world" of jobs, school, the mall, and television. Yet, if we learn once again to feel, see, hear, smell and taste the world as our ancestors did, we may remember something truly wonderful about nature in humans.<sup>29</sup>

I have been creatively experimenting, sharing, imagining, and reimagining this study of cacao and chocolate from every conceivable perspective. Simultaneously studying and reading dozens of books and studies on the cultures of cacao, from anthropology and agroecology to science and history. This deep relationship and

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<sup>27</sup> Gregory Cajete, *Native Science: Natural Laws of Interdependence* (Santa Fe: Clear Light Publishers, 1995), 23.

<sup>28</sup> Malcolm Gladwell, *Outliers* (London: Penguin Books, 2009). Gladwell and others suggest that 10,000 hours of focused work/practice is necessary to master a skill.

<sup>29</sup> Cajete, *Native Science*, 23. Cajete's work on understanding how phenomenology is akin to some aspects of Native Science is key to understanding how a relationship with knowledge leads to a deeper understanding.

dwelling with the *materia prima* is the prime mover and methodological basis for Chapter 1's IK reflection and analysis of the *Popol Vuh* cacao teachings.

There are many layers to the cultures and histories of cacao and chocolate that overlap like writings on a palimpsest. Understanding how these different cultures and colonizations of cacao and chocolate overlap and overwrite each other, has meant disentangling and analyzing the political geography of cacao.

Below is a map that I have developed that looks at the political geography of cacao and chocolate and breaks it into 4 layers that exist simultaneously. Each has a different locus of action starting in Mesoamerica, moving to Europe, then to North America, and finally to Asia. In the first layer of the political geography of cacao, a 5000 year old tradition of 'cacao, as the food of the gods' emerges and unfolds. A 500 year old European co-optation of 'cacao, as the aesthetic of the gods' is the second layer of this political geography and this begins in Spain and Italy. Next, a 250 year old tradition of the 'industrialization of cacao and chocolate' is the third layer. The fourth and most recent layer is the scientific approach, 'cacao as a superfood' which can be viewed as a double edged sword from an IK perspective. On one side, scientific analysis is restoring cacao's reputation as a food of the gods of immense health and ecological importance for humans. On the other side, this knowledge is being claimed, co-opted, and patented by the corporations paying for the research. I describe this complex history and layering of cacao and chocolate cultures as the political geography of cacao, and recognize that the only way to truly understand the terrain is to engage in the work and



walk the geography<sup>30</sup>. Understanding the social, political, historical, economic, and intercultural history and the modern reality of cacao and chocolate meant developing the below map and chart to help understand these layers of meaning.

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<sup>30</sup> During a 2008 Zapatista conference I had the opportunity to ask Subcommandante Marcos about what he meant about the Political Geography of “la Otra Campana.” I asked him how one could come to know the political geography, to which he answered simply that the only way to know it was by walking it. This map of the political geography of cacao is inspired by this Zapatista analysis and social movement philosophy.



challenged me to resist putting scientific or modern thoughts into the “mouths” of the Cacao Twins of the Mayan oral epic.

Asking the question of what the medicine of cacao teaches is not to claim to a *definitive* understanding, or capital “A” authority on this topic. Instead, this work seeks to open up intercultural dialogue, reflections, and encounters around IK teachings and research insights. This research asks: How can these insights be transformed into initiatives and campaigns that can regenerate culture, ecology, and health simultaneously? Answering these questions is the work of the following chapters of this dissertation and the regenerative post-doctoral research that will lead beyond this dissertation. I believe that cacao and chocolate have a unique role to play in feeding the modern hunger for re-imagining a more holistic and ecologically regenerative agricultural and food paradigm. Furthermore, I propose that the Indigenous cacao forest garden can be a powerful symbol and vehicle to imagine an intercultural radical pluralism of the 21st Century. Exploring this radical pluralism is part of the meaning of Zapatista call to create and re-imagine a world in which many worlds fit, or as the Zapatistas say, “un mundo donde quepan muchos mundos.” The Indigenous cacao forest garden with its convivial polycultures of trees, shrubs, plants, animals, soil, water and humans is a powerful symbol and metaphor for this intercultural regeneration and re-imagining. Furthermore, re-discovering cacao and chocolate in its original IK sense is a surprise for modern people who equate chocolate with sweet treats and commodities. Just as the bitterness of cacao is a surprise for those who love chocolate but have never tasted cacao, this experience can disarm the subject from their usual expectations and reveal a teachable

moment of cacao and chocolate. In this revolutionary sense, “right here and right now beneath the tread of so much social and ecological destruction chocolate can be an expression of hope.”<sup>32</sup> Cacao forest gardens and chocolate can be the symbols of radical intercultural hope and a revolutionary change in how we understand regenerative agriculture.

Though this IK of cacao and chocolate originates in the Americas, I have wondered if I am allowed to connect to the roots of this knowledge, and if the knowledge excludes people of ancestry not Indigenous to the Americas. As a non-Indigenous researcher working in the Indigenous Studies department, finding my relationship to this ethical question was fundamental to establishing my positionality and research methodology. The answers I have formulated are complex, but I believe that one can have a conditional permission to do this research despite not being ‘Indigenous’. This conditional permission is not a license to explore the teachings for personal gain. Nor do I believe that knowledge of the teachings of cacao must be exclusive to people with blood quanta traceable to Native American ancestry. Honouring the teachings and the medicines means sharing them generously and with a good heart, good mind, and a service to future generations that goes beyond self-interest, economic interest, or scientific explanation.

The means colour the ends. That is to say that the way we do research affects our ability to see that research. The instruments, methodologies, and cultural approaches predetermine our research results in deep ways. This work with cacao must respect

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<sup>32</sup> Michael Sacco, “Building Intercultural Bridges: Chocosal Horizontal Traders Exploring the Stepping Stones Beyond the Fair Trade Model,” *Intercultural* 155 (October 2008): 49–56.

Indigenous values and spirituality and cannot be **reduced** to commerce or Western scientific explanations of its importance and value, nor must it ignore these elements shaping cacao and chocolate. This kind of intercultural dialogue and knowing must be cultivated with humility, with respect, with an open heart and transparent intention. Cacao devoid of culture is not the answer. If cacao without cacao culture could still carry the Indigenous spiritual knowledge teachings and ecologically regenerative effects then there would be no problem with child labour or deforestation in the cacao plantations of equatorial Africa where most of the modern industrial world's cacao is grown.<sup>33</sup> In the context of Africa's cacao plantations, cacao is a monoculture that consumes jungles and is a source economic exploitation, hunger and child slavery; whereas in the cultural context of the Mayan communal forest gardens, cacao is a part of a food forest that supports food sovereignty, village health, household wealth, and ecological regeneration. Hundreds of generations of Indigenous farmers working with and saving the seeds of knowledge and plants are the reason why the forest gardens of the Americas are so beautiful and ecologically regenerative. The Indigenous cultural matrix of the forest garden is key to understanding the 'medicine' and 20 IK teachings of cacao.

So, we return to Cree Elder Rebecca Martel's question: "What can the medicine of cacao teach us?" In this sense medicine is an Indigenous way of knowing; it is not just an object of knowledge. There is no single definition for the content of this Oral way of knowing, and the 20 teachings of cacao discussed in this first chapter, but insightful

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<sup>33</sup> CNN Freedom Project, season 2, episode 2, "Chocolate's Child Slaves," aired January 20, 2012 on CNN, <https://www.cnn.com/videos/world/2015/05/26/chocolate-child-slaves-ivory-coast-spc-cfp.cnn>.

meditations and invitations to participate in the re-discovery of this sacred food of the gods - cacao.

## Cacao and Chocolate are Symbols of the Profound Genius of Indigenous Knowledge

The discovery of cacao was not some haphazard discovery. It was meaningful and impactful on many levels. We must ask ourselves why a civilization as great as that of ancient Mesoamerica would choose a bitter seed as its highest form of luxury and as its currency. We must ask ourselves how this bitter seed became synonymous with wealth and the apex of luxury and pleasure. It was not because Indigenous peoples were foolish, or because they were masochists who liked to eat bitter seeds. It was because they understood the deep nourishment and medicine of the cacao. Remember, Mesoamerican civilization created calendars as precise and more vast than NASA.<sup>34</sup> This is a civilization that developed incredible foods and plants of monumental beauty and quality: maize, tomato, chili pepper, pumpkin, squash, beans, sunflower, amaranth, strawberry, sweet potato, quinoa, potatoes, and countless other products from the field and forest gardens. While cacao, vanilla, achiote, mamey, avocado, patastle, and rubber trees are some from the forest garden trees. Moreover, this is a civilization that when the Spanish conquistadors arrived in the Aztec capital of Tenochtitlan in 1519 saw a city of over 200,000 people living on a shallow lake. This was larger and cleaner than any European city of that era. The *chinampas* (the floating garden/islands) of this place were perhaps one of the most intensive and regenerative forms of urban agriculture ever developed and

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<sup>34</sup> “Mystery of the Maya: The Maya Calendar,” Canadian Museum of History, accessed January 3, 2021, <https://www.historymuseum.ca/cmhc/exhibitions/civil/maya/mmc06eng.html>.

implemented in human history! Moreover, the *chinampas* are a symbol of the profound ecological knowledge of the ancient cultures of the Americas that persist and are in need of regeneration and renewal today because of modern development.

San Gregorio Atlapulco, in Mexico City's Xochimilco municipality, is the last bastion of the once great chinampa economy. During Aztec times, it functioned as the motor for the sustenance of up to 1.5 million people in the Valley of Mexico. Tenochtitlan, the island capital of the Aztecs, is where the Mexica built their pyramids in the Lake of Texcoco. It was intimately integrated with a vast system of agricultural fields, called *chinampas*. These made up the agro-industrial complex of what remains one of the world's largest cities.<sup>35</sup>

Moreover, one could argue that with 200,000 people living on a shallow lake it is a marvel that they weren't suffering from diseases like cholera and plagues as a result of dealing with their human waste. We know that these cultures with their sweat lodges (temazcales), with their family garden plots, with their *chinampas*, and with their developed ways of dealing with human waste, valued cleanliness to rival today's highest standards at a time when Europeans rarely bathed!<sup>36</sup> Their way of dwelling as a community was a holistic expression of spiritual ecology that integrated food production in highly effective small plot intensive ways. They were the masters of dealing with their needs, and by needs, I mean not only their feces, not only their urine but their food and building materials. The agricultural polycultures they cultivated also provided their food, fuel, and fibre. Moreover, their creativity with regards to waste, and agriculture truly rooted culture in place in a highly sustainable and even regenerative way.

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<sup>35</sup> Feike de Jong and Gustavo Graf, "A Mexican Village Where Aztec-Era Agriculture Remains," *CityLab*, February 15, 2018, <https://www.citylab.com/life/2018/02/a-mexican-village-where-aztec-era-agriculture-remains/553457/>.

<sup>36</sup> I am not trying to paint an ideal picture of Aztec culture, which definitely had its shortcomings—like their bloodthirsty love of war and slavery. When it came to ecogastronomy and hygiene, however, they were truly geniuses!

At a time in Europe when street cleaning was almost nonexistent and people emptied their overflowing chamber pots into the streets as a matter of course, the Aztecs employed a thousand public service cleaners to sweep and water their streets daily, built public toilets in every neighbourhood, and transported human waste in canoes for use as fertilizer.<sup>37</sup>



FIGURE 1.4. Aztec capital city. Image taken from Katherine Ashenburg's article, "Clean Aztecs and Dirty Spaniards."

This brief study of the cultural beauty, ecological balance, cleanliness, and regenerative agricultural model of the Aztec capital is only the tip of the iceberg of what Mexico profundo's gifts to the world were and could be again. Mexico profundo is a concept defined by Guillermo Bonfil Batalla in his seminal book called *Mexico Profundo*, in which he cogently argues and shows that the only way to understand the uniqueness of Mexican culture is to see it as emerging from a unique Indigenous mother culture. Re-discovering and analyzing the IK teachings of cacao and chocolate as a strategic doorway and aperture for learning from this millenary culture seeks to use the symbols and vehicles of cacao and chocolate to reveal and cast light upon the importance of this IK. However, this approach to using food to see the IK of Mexico profundo is not unique

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<sup>37</sup> Katherine Ashenburg, "Clean Aztecs, Dirty Spaniards," Aztecs at Mexicolore, accessed November 14, 2020, <http://www.mexicolore.co.uk/aztecs/home/clean-aztecs-dirty-spaniards>.



to this study. In fact it is inspired by the work done on maize during the past 40 years in Mexico, as will be discussed below.

## Methodological Lenses and Critical Understandings

The themes of “authority” and “teachings” must be critically positioned and not seen as “Truth” or hard “facts”. The contribution of this research is to explore ideas of ecologically regenerative forest gardens in an intercultural sense. This analysis is not reducible to anthropological, economic, or merely environmentalist lenses. Instead, those pillars of economy, ecology, politics and culture are taken up into a forest garden intercultural symbol (it’s a symbol of a different kind of agroecological paradigm in non-Indigenous words). The symbol of the cacao forest garden is one that is deeply traditional IK food and forest garden traditions. In this sense the cacao forest garden is a powerful symbol and vehicle for exploring what ecological, cultural, and spiritual renewal can and does look like in the 21st century. The forest garden is a holistic symbol that is irreducible to one methodological lens of study. We can no longer blindly believe in the universal truths of the modern era and this means we must use intercultural and interdisciplinary lenses in order to explore our experience of reality from a myriad of methodological perspectives. The re-discovery of the importance of the cacao forest garden is a reminder to renew and regenerate the best of traditions from an intercultural perspective while continuing to adapt, to regenerate, to re-innovate, renew, transform, and re-evolve just as we re-discover. This is part of the spiral dance (or part of the dialectic)

and political geography of the cultures of cacao as we continue to walk, re-write, and re-shape these political geographies.

This first chapter is a reflection and an inquiry-based exploration that engages all the senses, from touch, taste, smell, and sight; but also includes study, analysis, meditation, reflection, intuition, and dreams. The goal of the intercultural exploration in chapter 1 is to engage in direct relationship with the cacao and the IK. The *Popol Vuh* oral epic of the Maya, personal experience, and meditation guide this reflection. Exploration in the above sense does not mean being the first or the only on a maiden voyage of discovery as that is another form of colonization! The research methodology cultivated here is about being in a meaningful relationship with the ‘knowing’ in a personal, humble, spiritual, and situated way, rather than claiming “Authority”. This is the difference between the object of knowledge and knowledge (knowing) as a living relationship.<sup>38</sup> This is the difference between the textual and the Oral ways of understanding the teachings.<sup>39</sup> To understand the teachings of the cacao we must also understand some of the dynamics of the traditional and Indigenous Oral ways of knowing and spirituality. Understanding this unique mental space of the Oral mind is part of the underlying framework and challenges used for understanding the questions about the medicine of cacao from an IK perspective. A brief story may help to explain this challenge more concretely.

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<sup>38</sup> Shawn Wilson, *Research is Ceremony: Indigenous Research Methods* (Halifax: Fernwood Publishing, 2008). Wilson posits that this relationality is core to Indigenous ways of Knowing.

<sup>39</sup> Ong, *Orality and Literacy*.

When our IK class was in ceremony, we were off campus in one of the students' apartments because the ceremony could not be part of the institutional program of the university. During this off campus IK sharing circle, Cree Elder Rebecca Martel spoke to us a lot about the sweat lodge. She spoke about how the sweat lodge was the embodiment of the womb of the Sacred Mother Earth. She spoke about how the idea of fasting in the sweat lodge was to help us commune with the spirit; she suggested that part of the experience of the sweat was to find our own limits; to get to the point of barely being able to endure the heat and to be on the point of breaking. To endure the intensity of the sweat lodge, she spoke of how you would get down on the ground putting your lips close to the cool Mother Earth; trying to just get a little bit of that coolness, and most keenly, she said that that was the moment to pray. And so, in a very typical way of a boy who at one time in his life was raised Catholic and who grew up rooted in the Western institutions of authority and objective truth, I asked her: "how do you pray?" and her answer was very revealing. She said: "You'll figure it out."

Reflecting upon this I immediately saw that in this form of prayer, it is not about a formulaic prayer to memorize or that is True, but about an authentic communion through the engagement and relationship of one's spirit, one's physical body and with participating in the mystery of Creation. Coming to know in this IK context is both personal and spiritual; it is a living relationship one must figure out. Knowing is not something that someone else can "tell" you how to do. This IK concept reminds me of how Mohawk Elder Tom Porter described Indigenous spirituality in his orally dictated book, *And Grandma Said*. Tom Porter's schoolboy Indigenous experience with religion

was not positive and he came to see the Catholic religion's duties as a kind of shoebox;<sup>40</sup> a set of prescriptions, a set of rules, that form a box in which you store things away so they won't be lost or forgotten, but the disconnection of the rituals like the putting things away in a shoe box, inevitably leads to the forgetting of the lived personal connection to the spiritual truth. Like Rebecca Martel's story of praying in the sweat lodge, Tom Porter's reflections taught me that Indigenous spiritual ecology is a living relationship. Establishing a relationship with an IK way of knowing is akin to the thanksgiving we should give when those first rays of the new day's sun touch our faces and wake us from another sleep.<sup>41</sup> This living and knowing relationship embodied in practice and ritual is the spirit in the Indigenous concept of "spiritual ecology." This gratitude for the beauty and gift of Creation and nature underpins this research into the regenerative spiritual ecology of the Indigenous forest gardens of cacao and their teachings.

This personal exploration and dwelling<sup>42</sup> on the mystery of creation and this connection through personal relationship with knowledge and knowing is one of the keys to understanding what the medicine of cacao can teach, but there is not one formula or one right way to interpret the teachings. Being present and cultivating connection and relationships animates the intra-personal, and intra-natural<sup>43</sup> dialogue and communion between humans, plants, animals, soil, water, air, and all beings. In this approach,

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<sup>40</sup> Tom Porter (Sakokwenionkwas), *And Grandma Said...Iroquois Teachings as Passed Down Through the Oral Tradition* (Bloomington: Xlibris, 2008).

<sup>41</sup> Porter (Sakokwenionkwas), *And Grandma Said*, 373.

<sup>42</sup> Michael Polanyi, *Personal Knowledge: Towards a Post-Critical Philosophy* (Chicago: University of Chicago Press, 1974).

<sup>43</sup> Robert Vachon, "Guswenta or The Cultural Imperative: Towards a Re-Enacted Peace Accord Between the Mohawk Nation and the North American Nation-States (and Their Peoples). Part 1: The Intercultural Foundations of Peace," *InterCulture* 127, no. 2 (Spring 1997): 1–83.

making, thinking, and learning from cacao and chocolate are intimately tied through the rituals of production of the primary material's transformation.

## Methodological Antecedent for Seeing IK in Cacao and Chocolate : *Sin Maíz no hay País* (Without Maize no Mexico)

The methodological foundation and antecedent for this intercultural analysis of Indigenous cacao cultures stems from the “Sin Maíz no Hay País” 2003-2007 campaign I participated in and supported from 2003 to present. This food culture campaign was inspired by Mexico's most famous anthropologist Guillermo Bonfil Batalla. Batalla proposed in his seminal book *Mexico Profundo* that perhaps the best way to understand what it is to be in the Mexican condition from the perspective of a civilizational level is to understand the deep meaning and meaningfulness of maize to the Mexican people and their cultural worlds.<sup>44</sup> Gustavo Esteva took up the call to undertake this research in 2002/3 with the now historic “Sin Maíz no Hay País” campaign, and in Esteva's introduction to that work in the Chapter on “El Maíz y las Culturas” writes:

All of the organizations and institutions that our ancestors created protected a deep association with maize. The structure and composition of the person, the family, the community and the society; the practices of social, religious, economic, political, medical, education and legal, of languages and the norms of conviviality, are inspired by the maize. The fundamental trunk of culture of our ancestors is expressed in this interaction with nature and with others that is a reflection of the diversity, adaptability, and hospitality of maize.<sup>45</sup>

What is it to be of Mexico Profundo? What Esteva and Batalla are talking about are the ways in which the rituals, the practices, and the habits that stretch right from the maize

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<sup>44</sup> Bonfil Batalla, *México Profundo*

<sup>45</sup> Gustavo Esteva and Catherine Marielle, eds., *Sin Maíz no Hay País* (Mexico City: Consejo Nacional para la Cultura y las Artes, 2007), 24.

field to the family table manifest an Indigenous way of being in the world. From laws, marketplace,s and governance models to understanding their place in the Milky Way, Indigenous ways of knowing are embodied in maize rituals and cultures. From the milpa field garden to Indigenous eco-gastronomy of maize, corn helps to unlock points of aperture and reflection into the *nature* and *kind* of spirit embodied in the Indigenous heart of Mexico profundo. Batalla was calling for research into how maize was not only a doorway and aperture for understanding the deep Indignous knowledge roots of Mexico profundo, but also how maize culture was a powerful rallying point for transforming their struggles of resistance into struggles for liberation. This is exactly the call that my mentor Gustavo in his work on the *Sin Maíz no Hay País*<sup>46</sup> campaign of resistance, resilience, and regeneration sought to explore. Maize is a-maize-ing at unlocking the hidden deep cultural meanings and traditions of Mexico profundo. In this sense the maize provides the golden threads and filaments to navigate and try to see the profound civilizational labyrinth of Mexico profundo as it is rediscovered and re-generated anew in Mexico today.<sup>47</sup> Furthermore, the campaign of resistance identifies the modern pressures that endanger and erode maize cultures and makes direct connections to the colonial and neoliberal economic invasions and imposition in Mexico during the past 500 years. Through maize we renew and re-discover, re-generate and celebrate in a tangible way the

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<sup>46</sup> Esteva and Marielle, *Sin Maíz no Hay País*.

<sup>47</sup> Sticking with the simile of the Ariadne's thread and the Minotaur's maze, in this analogy the Minotaur would be Mexico Imaginario, and the maze itself would be the imposition of one civilization upon another, which is the imposition of a cultural tradition on top of México Profundo by colonizers.

profound elements of Mexico Profundo and create a nutritious, delicious, and rooted rallying point.<sup>48</sup>

Through the symbolic vehicle of maize, the *mythos* of Mexico profundo is embodied and made manifest. Mexico is fundamentally a world based on Indigenous ways of being, according to Batalla and Esteva alike. Renewal and regeneration of the maize in its millenary traditions renews the wellsprings of Mexico profundo through tangible and actionable rituals, habits, and traditions. The *Popol Vuh* tells how the first humans of today were made from maize. There is a deep connection between Bonfil Batalla's *México Profundo* and Mesoamerican cosmovisión, and the teachings that emerge from the *Popol Vuh*. Similarly, there is a deep connection between maize and cacao on many levels and this is shown in the *Popol Vuh* Oral epic, in the cultural matrix of the Indigenous forest garden, and in the rituals and cultures of cacao still flourishing in the Indigenous communities of Mexico today. Therefore, I read the *Popol Vuh* through the symbol of maize, but also cacao. Mayan scholar Michael Grofe makes a similar connection in his groundbreaking dissertation on cacao symbology in the Mayan tradition:

While the Popol Vuh describes maize itself as the symbolic and literal raw material out of which the original people are made, cacao may have been another key ingredient which brings humanity to life.<sup>49</sup>

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<sup>48</sup> Robin Wall Kimmerer, "Corn Tastes Better on the Honour System," November 2, 2018, in *Emergence Magazine Podcast*, produced by Emergence Magazine, podcast, MP3 audio, 57:00, <https://podcasts.apple.com/us/podcast/corn-tastes-better-on-the-honor-system-robin-wall-kimmerer/id1368790239?i=1000423066437>

<sup>49</sup> Michael J. Grofe, "The Recipe for Rebirth: Cacao as Fish in the Mythology and Symbolism of the Ancient Maya," (PhD diss., University of California at Davis, 2007), 10.

Cacao and chocolate poetically celebrate Mexico profundo. Similar to maize, cacao and chocolate have teachings to share about the spirit and shape of Mexico Profundo. From their origins and the way cacao grows; to the way that cacao is planted and fertilized; to the ways that it can be traded and transported; to the ways it is transformed and enjoyed; in all these steps we can rediscover things that teach us holistically about the Indigenous spiritual ecology of cacao and chocolate<sup>50</sup> and learn about what the ‘medicine’ of cacao can teach us today about a regenerative spiritual ecology.

## Four IK Methods for Preparing to Explore the Teachings

I have struggled to answer the question: “What is the right way to begin the process of re-discovering some of the IK teachings of cacao?” Here are four methods and methodological exercises/tools that have shaped this IK approach to dwelling with the question and seeking to cultivate an unmediated relationship and experience with the cacao and chocolate knowing itself. First in line is leaning on the guidance of the Anishnabig research tool/medicine wheel developed by Indigenous educational theorist Nicole Bell.<sup>51</sup>

### First method: the moral spiritual compass called the medicine wheel

Start by preparing oneself and cleaning the senses. One way of understanding the process of cleaning our senses and intentions from an IK perspective is to burn the smudge, and then to give our gratitude for the teachings associated with the 4 cardinal

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<sup>50</sup> Cajete, *Native Science*.

<sup>51</sup> Bell, “Just Do it,” 35.



directions. Offering tobacco, burning cedar, sage, and sweetgrass is a way to recognize the 4 cardinal directions and medicines of the Indigenous peoples of Ontario. In a second step, burning copal and cacao smudge acknowledge the heart of this inquiry through the sacred smoke native to Mesoamerica. Bringing the smudge to our heart, mouth, eyes, ears, over our spirit and down to the earth reminds us to clean our senses and to be present.

In the East<sup>52</sup> as researchers we must remember to give gratitude for the clarity of vision and for the gift of life that is symbolized by the rising sun. We must offer the sacred tobacco medicine to the Creator in recognition of the great gift of life and ask for clarity based on this gratitude.

In the South, we do the work. We cultivate the relationships to the roots of knowledge. Like the roots of the cedar tree, we must get busy and involved in the doing of our daily research actions and not taking shortcuts to the knowledge.

In the West, we reflect and look back upon the day to formulate the questions of the day. We must burn the sage and remember to reflect upon the lessons of the day as the sun sets.

In the North, we take the questions and insights to dreamtime; we rekindle our spirit, though the mystery of the little death we know as sleep, where questions and knowledge are pondered and where sometimes mysteries and answers are revealed. In the morning, when we wake up and rekindle the embers of yesterday's fire, it is important to reflect upon the teachings of dreamtime.

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<sup>52</sup> Bell, "Just Do It," 36.

In the morning, the research medicine wheel begins again. Building on the renewed gratitude for one more day of the gift of life. As we rekindle the fire and embrace the rising sun, we deepen our connection to the knowing. The death of the previous day is the fertile compost and soil for the present day. Like the rings of a tree, or the layers of the soil, the previous day's or year's work and research is still there. Anishnabig researcher Nicole Bell describes a medicine wheel inspired research methodology that has helped greatly in understanding how Indigenous rituals and ceremonies create the context for a moral and spiritual encounter with the truth of being. Understanding Nicole Bell's concept of the Anishnabeg medicine wheel research methodology tool, helped me to cultivate some rituals and ceremonies for connecting with the spirit of the cacao that will be discussed later in Chapter 1.



Figure 6: *Researching With Integrity*<sup>53</sup>

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FIGURE 1.5. Image taken from Nicole Bell's thesis, *Just Do It*.

<sup>53</sup> Bell "Just Do It," 108.

Second method: don't reduce IK research to *logos*, leave room for *mythos*.

Intercultural research into IK requires more than just logic or reason. Using more than just *ratio* and *cogito* to understand our place in the world is key to exploring IK ways of knowing. Elder Jim Dumont describes logocentric science-based ways of seeing the 180 degrees of knowing in his seminal essay entitled “Journey to the Daylight with Ojibway Eyes.”<sup>54</sup> Dumont argues that to see with Ojibway eyes we must open our eyes to 360 degrees vision that includes dreams, intuitions, and/or animals. Extralogical quantum leaps of understanding can be the gift of the deep knowing that comes from the *mythos* and mystery of nature and dreams.<sup>55</sup> Chapter 1 seeks to unpack the mythos of the *Popol Vuh* and reveal 20 IK inspired teachings of cacao and chocolate, and yet as hard as this researcher tries to explore the mythos, this researcher recognizes that the *logos* of these words will never be up to the task of revealing mythos, and so I ask permission to imperfectly struggle to elucidate these teachings while they continue to be clarified through doing this work. Knowing this limitation is part of the methodology.

### **Third method: cultivate a living relationship**

Dwelling with the *materia prima* starts with sitting with the knowledge. When I talk about savouring knowledge rituals, I am in part referring to the 10,000<sup>56</sup> hours of dwelling with the mystery of the cacao as a *materia prima that defies our formal logical*

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<sup>54</sup> Jim Dumont, “Journey to Daylight-Land: Through Ojibway Eyes,” *Laurentian University Review* 8, no. 2 (1976): 31–43.

<sup>55</sup> Dumont, “Journey to Daylight-Land,” 40.

<sup>56</sup> Gladwell, *Outliers*. Gladwell argues that 10,000 hours of intense focused practice, play, and dwelling is a critical threshold for mastery.

*concepts of it.* Fingers in the bowl, tasting, reading, sharing, trading, lifting, cleaning, smelling, roasting, grinding, winnowing, organizing, dreaming, celebrating, composting, and reflecting are just some of the actions of dwelling with the cacao. These are parts of the 10,000 hours of dwelling in the relationship with cacao and chocolate. This is how communion with the medicine of the cacao can be cultivated, and through this celebration and at times through this suffering we sometimes receive the gifts of insight and understanding. One can never know when a mystery or a teaching will manifest. One can only be open and present and cultivate a meaningful relationship so that when the opportunity arises, one is ready to receive the insight. Put aside our pre-conceptions and try to learn from the experience of being in relationship to the knowledge.

Fourth method: understand the textual mind, and struggle to be open to the Oral teachings.

Don't get stuck in textual ways of seeing. Learn to see and be in the world that recognizes Oral knowledge and wisdom. Like the *Popol Vuh* in its Orality and its connection to Mayan codices, these teachings of cacao are meant to be glyph-like, pictorial, iconic and symbolic meditations, not an academic linear treatise or expression of "Truth". There is a saying that a picture is worth a thousand words. Pictorial Oral knowledge teachings are akin to that, in that they are not reducible to a single textual statement. My hope and prayer as I write these words is that some of these meditations will be good food for those with whom they are shared. May these food medicine

research questions feed the people<sup>57</sup> and serve the re-discovery and re-generation of the Indigenous forest garden. Those familiar with the *Popol Vuh* will best understand (not necessarily agree with) the interpretive work being done in the following section, in particular those familiar with the part of the *Popol Vuh* from the birth of the second set of Hero Twins to their defeat of the lords of Xibalba. However, a large deal of effort has gone into trying to provide those readers unfamiliar with the story of the *Popol Vuh* with enough background and textual excerpts to be able to make sense of the interpretations in the 20 teachings of cacao.

## Finding the Cacao Twins when Reading the *Popol Vuh*

In the K'iche' *Popol Vuh*, the head of Hun Hunahpu is likened to a calabash gourd, and in Classic Period iconography, to a cacao pod. This association with cacao continues in Hun Hunahpu's offspring, the Hero Twins. Their self-sacrifice in the underworld parallels the stages of cacao processing: entrance into the underworld (burial, fermentation), burning (roasting), grinding of their bones on a metate, and pouring them into water. Subsequently, the twins are reborn as two fish. The first syllables of kakaw are homophonous with the first consonant and vowel in the proto-Mayan words for 'two', \*ka, and 'fish', \*kar. A visual representation of this wordplay occurs in glyphic spellings of kakaw, in which a fish, or a fish fin, is read as the syllable ka. The association between cacao and fish can subsequently be traced through mythology and iconographic representations, providing insight into the metaphorical value of cacao as a potent symbol of rebirth.<sup>58</sup>

If there is any doubt about the Oral nature and seemingly infinite interpretations of the mythos of the *Popol Vuh*, one only has to read 20 of the different translations of the

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<sup>57</sup> In Nicole Bell's dissertation, one of the Elders who visited their PhD cohort urged them to find a way to have their work feed the people; Bell argues that this "feeding the people" is essential to the ethics of Indigenous studies. My mentor and Elder, Ivan Illich, argued for research by people and not for people, and I believe the spirit and ethos of both Elders is similar in this context.

<sup>58</sup> Grofe, "Recipe for Rebirth," 1.

*Popol Vuh* itself from the Quiche,<sup>59</sup> or the Spanish that abound to see that the tellings are already so vastly different, as to not be one. In 2004 when I began my research into the food cultures of cacao and first read the *Popol Vuh*, I asked Gustavo Esteva if I could interpret the cacao in lieu of the more commonly translated calabash in the story of the talking Maize God's head hung from a tree at the mouth of the cave leading to Xibalba. He looked at me and smiled and said: "of course you can do that. Didn't you know that anthropology is the most creative form of writing out there? They bring in the first anthropologist and he puts forward an idea that is a new and novel interpretation of the findings. The next comes in and tears down what was written and proposes a new right interpretation, and so on and so forth in and through a line of interpretations, each one different from the previous." Perhaps each interpretation has an element of the "truth," or in the terms of Vachon's interculturality each has a bit of the mythos contained, carried over, and perhaps preserved in the logos of their words.<sup>60</sup> To understand IK teachings, we must seek to understand them in ways that allow their meanings to remain unbounded by textual definition and the deep symbolism and twinning can remain regenerative. In a profound sense, the *mythos* of IK cannot be owned or controlled by the written word or its cultures. It is a spirit that must be lived, nurtured, and cultivated. In this sense the

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<sup>59</sup> Here are four other translations of the Popol Vuh, among many that I have read to deepen my critical perspective on the work of translation: Munro S. Edmonson, *The Book of Counsel: The Popol Vuh of the Quiche Maya of Guatemala* (New Orleans: Tulane University Middle American Research Institute and Gallery, 1977); *Popol Wuj*, trans. Sam Colop (Guatemala City: F&G Editores, 2021); *Popol Vuj: A Sacred Book of the Maya*, trans. Victor Montejo (Mexico City: Artes de Mexico Y Del Mundo S. A., 2006); *Popol Vuh: The Mayan Book of the Dawn of Life*, trans. Dennis Tedlock (New York: Simon & Schuster, 1996).

<sup>60</sup> For Vachon, mythos is virtually infinite: it is the magma of the subconscious or the collective unconscious of culture. Whereas logos is the ration, the cogito of knowing with the light of logical understanding. However, our ability to fully comprehend is limited, and for this reason it is always incomplete, and it is always context specific. The mythos is connected to the vastness of Reality, and not the cultural constructions of the logos.

*Popol Vuh* is a keeping place for ways of knowing, a tool of an Oral culture, a sacred keeping place. As one interpreter and translator of the *Popol Vuh* wrote in his foreword:

The fact that the contents of the original *Popol Vuh* predated the Spanish conquest gave them an aura of mystery and power. Its authors referred to the ancient book upon which the *Popol Vuh* was based as an *ilb'al*, meaning “instrument of sight or vision.”<sup>61</sup>

The instruments and lenses for this intercultural reading of the *Popol Vuh* are the spiritual ecological traditions of cacao and chocolate. The *Popol Vuh* for this IK researcher is a tool and instrument for seeing how Indigenous cacao culture paradigm shifts of the past, present and *possible* futures can be part of an ecological and intercultural renewal of today and tomorrow. By re-discovering and re-generating the IK teachings of cacao and chocolate the shape, scope, and symbolism of the cacao forest gardens emerges both literally through food cultures and symbolically through the deeper spiritual ecological IK teachings.

### How I First Encountered the *Popol Vuh*

In 2003, Mexican intellectual Gustavo Esteva and Peruvian Indigenous agricultural techniques scholar Grimaldo Rengrifo of the Andean Research Center PRATEC, co-hosted the America Profunda conference in Mexico City to unite Indigenous peoples from all of Turtle Island. The mission was to discuss the process of cultural regeneration and the cultivation of continental solidarity with the Indigenous people of all the Americas and their allies. I was blessed to be present and to moderate

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<sup>61</sup> *Popol Vuh: Sacred Book of the Quiché Maya People*, trans. Allen J. Christenson (Norman: University of Oklahoma Press, 2003). Electronic version of original 2003 publication on Mesoweb: [www.mesoweb.com/publications/Christenson/PopolVuh.pdf](http://www.mesoweb.com/publications/Christenson/PopolVuh.pdf), 24.

one of the tables on appropriate technology. However, one thing that stuck with me was the quote from the *Popol Vuh* that was used in the conference letterhead:

*Arrancaron nuestros frutos,  
Quebraron nuestras ramas,  
Quemaron nuestros troncos,  
Pero no pudieron secar nuestras raíces.*<sup>62</sup>

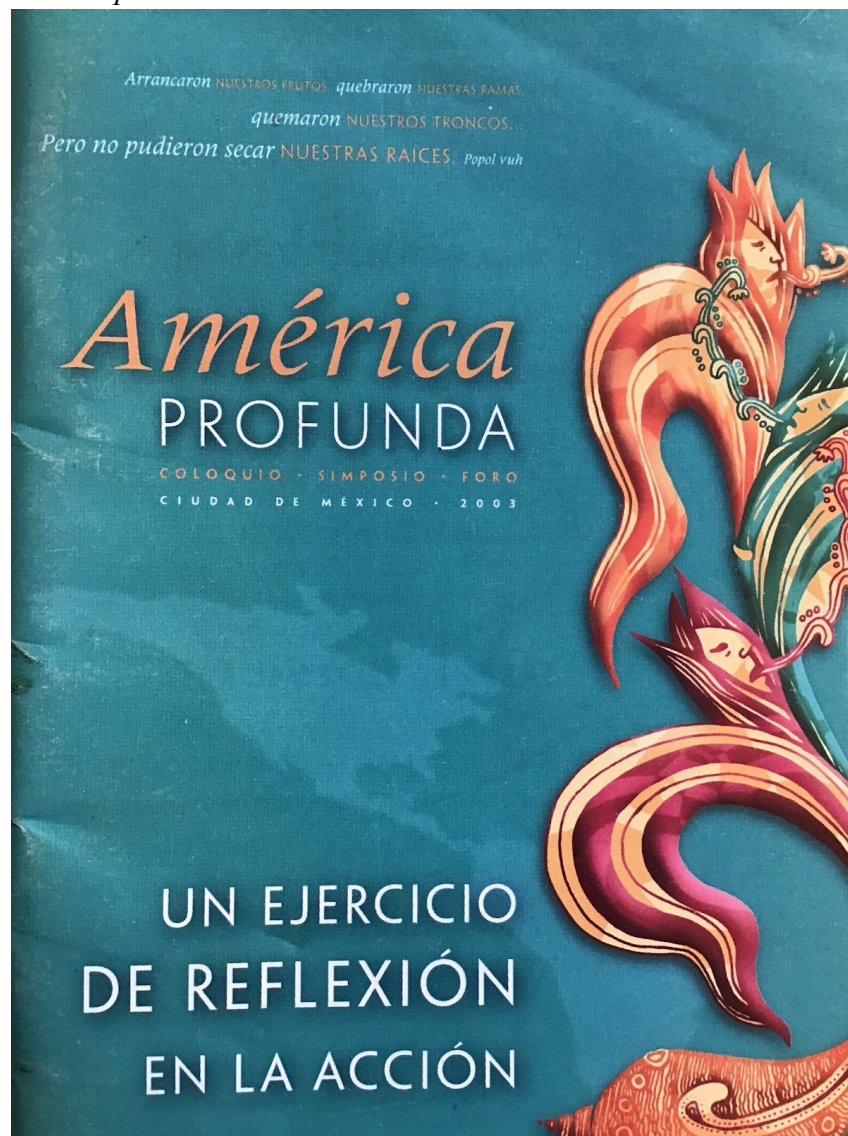


FIGURE 1.3. America Profunda pamphlet cover. Photo of pamphlet. Original layout by Isa Emmanuela Hinajosa and Gustavo Esteva of the Universidad de la Tierra 2003. Photo taken by Michael Sacco.

<sup>62</sup> “America Profunda,” pamphlet from 2003 Coloquio Simposio Foro in Mexico City.



“They tore off our fruits, broke our branches and burned our trunks, but they could not dry up our roots.” The tree quote from the *Popol Vuh* referenced above is the World Tree of the Maya and a tree that represents a cultural way of being in the world. This understanding of the Tree of culture is akin to the below referenced intercultural understanding of the Tree of culture developed by the intercultural institute of Montreal (referenced and shown below) for understanding the tree and roots of cultures. Seeing culture and polycultures in harmony as a forest garden is a powerful symbol for re-imagining intercultural radical pluralism in the 21st Century. The deeper symbolism of what this symbol of the forest garden regeneration could mean is an important element of this dissertation and is explored in all three chapters in slightly different ways. The regeneration of the forest gardens of the Americas and the intercultural and intra-natural encounters and dialogue of plants, animals, and cultures are symbols for the emergence of radical pluralism as a powerful symbol and metaphor, not unlike Robert Vachon’s exploration of the Mohawk Guswenta with elder Tom Porter.<sup>63</sup> There is not just one World Tree, but rather a set of different cultural world trees. Cultivating and regenerating the forest garden in an intercultural sense is akin to finding a more convivial and harmonious way of bringing these cultures into a more balanced forest garden poly-culture. Finding ways of creating polycultures of plants and cultures in the cacao forest garden is a powerful symbol for this regeneration. To be rooted in one’s culture is to connect to the roots of knowing. The World Tree of cacao in this sense is a uniquely Mesoamerican way of being in the world, and is totally Other to the English, Irish, Italian

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<sup>63</sup> In his work on the Guswenta, Vachon suggests that the Guswenta is a powerful symbol and practical tool for the re-enactment of a peace accord between Indigenous and non-indigenous cultures.

cultural roots and branches and worlds that defined my cultural upbringing and my earlier studies during the first 26 years of my life. At age 26, Zapotec elder Gustavo Esteva invited me to collaborate in Mexico with him and his communities and a profound intercultural encounter transformed this researcher forever.

The Mayan *Popol Vuh* is a key source for this intercultural reflection on the spiritual ecology of cacao cultures. The below analysis focuses on one short section in the *Popol Vuh* from the conception of the second set of Hero Twins, herein called the Cacao Twins, to their self-sacrifice, death, rebirth, and revolutionary overthrow of the lords of Xibalba. The 20 teachings follow the chronological order of the *Popol Vuh's* mythic events pertaining to the birth, life, service, self-sacrifice, death, rebirth, and regeneration of the Cacao Twins.

The *Popol Vuh* is the oral epic of the Mayan transcribed in the 16th Century into Spanish. It was not “created” at that point and was the fruit of millennia of teachings, however, at that point to preserve the teachings in the age of the conquest, the Mayan people allowed one version of their Oral teachings to be committed to written form. Of all the books I have read on cacao it holds the most “authority” in the sense of what it has taught me about looking more deeply about the deep cradle-to-cradle spiritual ecology of the so-called food of the gods: cacao. Yet the *Popol Vuh's* teachings on cacao are only a fraction of all the Oral cultural teachings contained in the *Popol Vuh*. We must recognize the *Popol Vuh* as an Oral epic on par with what Milman Parry<sup>64</sup> for the *Iliad* and the

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<sup>64</sup> Milman Parry, *L'épithète traditionnelle dans Homère; essai sur un problème de style homérique* (Paris: Société d'éditions Les belles lettres, 1928). Parry's research on the oral composition of *The Iliad* was groundbreaking in the 1920s.

*Odyssey*. In his 1930 academic thesis on Homer's *Iliad* and *Odyssey*, the foundational epics of the Western World, Parry reintroduced the concept of Orality to the Western academy. The *Popol Vuh* is to the Maya what the *Iliad* and the *Odyssey* are to the West. We must see the *Popol Vuh* as a bundle and keeping place for so many Oral teachings it is impossible to decodify them all in a linear or logical manner. To read the *Popol Vuh* from an Indigenous spiritual ecological perspective we must challenge our understanding to include Orality and symbolic twinning of words and concepts that are not reducible to one single textual definition or interpretation. We must also recognize that the written word and linear explication process of writing must turn back from the hubris of ever trying to fully explicate or comprehend all the deep Oral IK teachings of the *Popol Vuh*.

Vachon and Kalpana Das developed a powerful image of a tree to describe the challenge of seeing and understanding cultures. Their work on interculturality and radical pluralism took up the banner of the intercultural imperative.<sup>65</sup>

The contemporary crisis is more a crisis of civilization itself than a crisis of any particular civilization. The civics, the citizen, and the civil as the city have ceased to be viable human paradigms. The jungle is no longer available for escape. When all the retreats have been cut off, what is to be done? [Raimon Panikar via his disciple Robert Vachon]

Vachon's work on interculturality never gave up his deepest spiritual conviction that the only thing worth writing about was precisely that thing that could never be said—the Unsayable. The Unsayable, like the Absolute, forever recedes under the razor of analysis

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<sup>65</sup> Vachon, "Guswenta: Part 1," 8. This quotation is the basis of the intercultural imperative and the challenge that Vachon is taking up on his work in the *Guswenta*.

(instruments) and the logos (words). Mythos retreats from the light of logos as fast as the logos seeks to explicate it, but that does not mean the mythos is not Real.<sup>66</sup>

Myth, that fundamental area of human experience, demands a peculiar attitude: you cannot look directly at the source of light: you turn your back to it two that you may see—not the light but the illuminated things. Light is invisible. So too with the myth— which is not an object of discourse, but the expression sui generis [of its own kind] form of consciousness.<sup>67</sup>

Similarly, the wisdom of the knowledge vanishes as quickly as we try to capture it in our words, and this is one of the reasons why so many cultures had sacred mysteries into which one first had to be initiated to know,<sup>68</sup> and why the Oral teachings are often told differently depending upon their context.<sup>69</sup> Each situation in time and place requires the shared Oral wisdom to adjust their telling, and the skilled knowledge keeper knows exactly how to do that. The *Popol Vuh* was written down, and although its telling was captured, the meanings of its words still find their meaning in the context of Oral Mesoamerican culture. We must read the *Popol Vuh* differently and with different cultural lenses than we read something produced after the emergence of the textual age and its associated printing press.<sup>70</sup>

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<sup>66</sup> Robert Vachon, “Guswenta: Part 1,” 33.

<sup>67</sup> The Myth of Orpheus and Euridice is a reference to the Greek tragedy in which the famous poet Orpheus plays his lyre for Hades to free his beloved from death and lead her out of the underworld. He is given permission, but on the condition that he does not look back. At the final moment and threshold of the living world, Orpheus doubts and looks back only to see the shade of Eurydice retreating into the darkness. This is the symbol of the challenge of even the greatest poets and thinkers to capture and reveal the mystery of Reality with a capital R.

<sup>68</sup> Giovanni Reale, *Toward a New Interpretation of Plato* (Washington, DC: Catholic University of America Press, 1997).

<sup>69</sup> This is a story I heard Zapotec researcher Melquiades Cruz tell about the interview of his traditional Zapotec grandfather who did not speak Spanish but only Zapotec. I had the opportunity in 2003 to learn to plant black beans using an armadillo shell, a cane, and bare feet with this village grandfather in the Zapotec village of Santa Cruz yagavila in the Sierra Norte mountains of Oaxaca Mexico.

<sup>70</sup> Ivan Illich, *In the Vineyard of the Text: A Commentary to Hugh's Didascalicon* (Chicago: University of Chicago Press, 1996).

Kalpana Das, dear friend and collaborator to Robert Vachon, interpreted Vachon's teachings and made a highly instructive intercultural diagram to aid in the difficult task of "seeing" cultures. Note how the deepest roots of culture are not visible, and how difficult it is to make the connection from the visible to the invisible and deepest levels of presuppositions and mythos buried in the deep roots of culture.

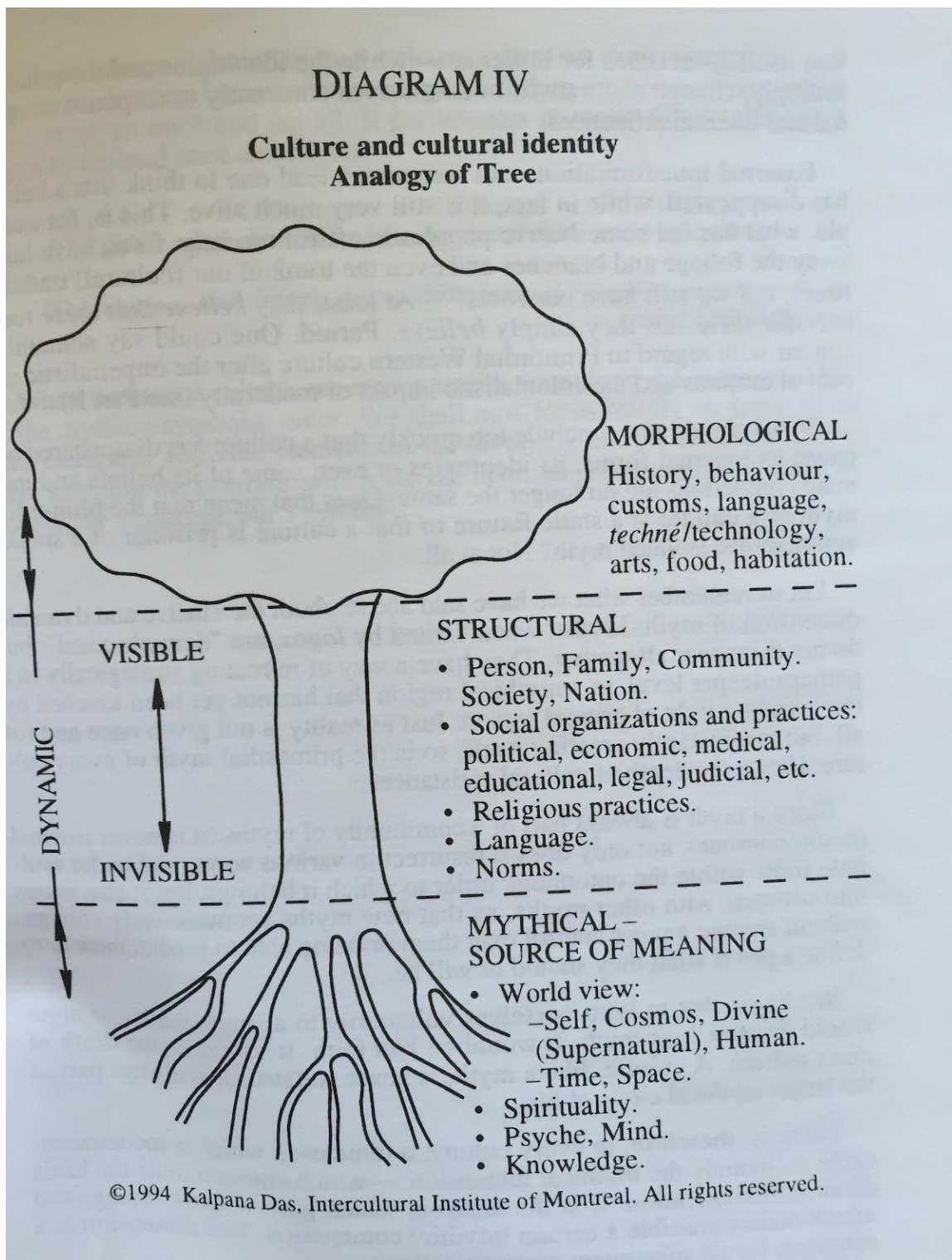


FIGURE 1.2. Cultural Tree and Roots. Image taken from Guswenta Part 1 and is as shown in the diagram originally developed by Kalpana Das.

Seeing culture is not easy for one cannot be outside of culture in order to objectively see it. Seeing culture is like trying to see both the lenses and the eyes that are seeing. In the above image, the analogy is that the deep roots of culture (mythos and presuppositions) are like the roots of the tree buried in the soil. One can only see one's culture mirrored in the eyes of the Other. What we see when we look at cultures of cacao and chocolate today, are the obvious chocolate bars and uses of chocolate and their seasonal traditions and food rituals. Looking deeper we see the histories and the traditions associated with the different elements of the political geography of cacao.

The *Popol Vuh* epic story is a deep well of *mythos* for so many thoughts and teachings akin to Millman Parry's work on the *Iliad* and the *Odyssey*. However, bringing these deeper cultural teachings and insights of cacao cultures to light is challenging, and yet it is still very worthwhile and valuable. This challenge is at the core of Gustavo Esteva's comment about this dissertation being a rigorously researched work of fiction! We must remain aware of the tension and the dance of shadows that our ideas sometimes paint over the deeper mythos we find so difficult to excavate and/or explicate. It is a great challenge in interpreting and re-telling elements of the *Popol Vuh* not to try to pin it down in some encyclopedic or profane manner. The spirit of these teachings struggles to maintain its wisdom without being pinned down by the textual interpretation and words.

Chapter 1:  
20 Indigenous Knowledge Teachings of Cacao  
and Chocolate guided by the Popol Vuh



FIGURE 1.5. Above picture of a jaguar cacao pod, a calabash carved with a cacao tree on it, and a replica theobromae cacao pod taken by Michael Sacco 2018.

**“Vivir es llevar un canto hacia la vida.”**

**“To live is to lift up a song in praise of life.”**



Mayan Elder and spiritual timekeeper Nana Maria Ramirez spent ten years helping me to find meaning and humility through the study of the *Popol Vuh*. Her first teaching was the most important one of all: start by cleaning up and clarifying our intentions. Before beginning the work, unsweetened chocolate is a good medicine to start the ceremony with a good heart, good mind, and helps to purify our intentions. This is one of the ways in which unsweetened cacao drink is still used in Mayan ceremonies to this day.

### **The 20 Teachings of Cacao**

1. Gratitude
2. Fertility
3. Healing Smoke
4. Regeneration and Renewal
5. Twinning
6. Animals as Teachers
7. Sustainability
8. Maize and the Cacao Twins
9. Re-evolution of Time and Mesoamerican Dialectics
10. Transformation and Journey
11. Self-Sacrifice and Service
12. Metate Stone
13. Fire and Hot Stones
14. Ka-Ka-Wa: Fish-Fish-Froth

15. Renewal, Rightness, and Reconciliation
16. Rebirth and Regeneration of the Forest Garden
17. Cacao Currency
18. Conviviality and Pleasure
19. Food of the Gods
20. Symbolic Vessel: Cacao is the Medium and message



FIGURE 1.6. Olmec Head. This photo of a miniature replica Olmec head was taken by Michael Sacco in 2018.

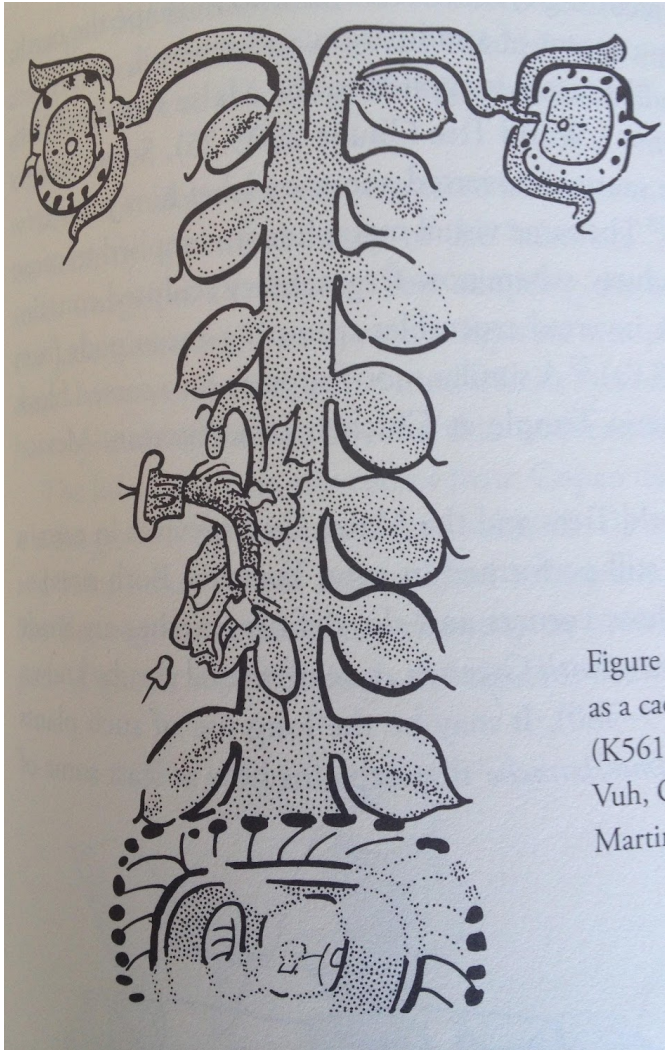


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FIGURE 1.7. Maize God's head. This image is a detail from a Mayan glyph depicting the head of the Maize God hanging from the tree at the mouth of the cave to the Underworld of Xibalba. The detail of the fruit-covered seed spitting from his mouth depicts the story from the *Popol Vuh*.

## 1. Gratitude: Ancestors and Knowledge/Seed Savers

Nothing comes from nothing, and the food of the gods came from the death of the Maize God: Hun Hunahpu. The first set of Twins, the Maize God and his brother, were invited to Xibalba (the Underworld) by the lords of the Mayan underworld to compete in

a ball game<sup>71</sup>. In Xibalba, they were set a series of impossible tasks which they failed and as a result they were sacrificed and killed. Hunahpu's head was chopped off and hung from a tree at the mouth of Xibalba. On the tree his head transformed into a cacao pod (or a calabash). In other words, without the Maize god's head, the birth of the Cacao Twins was "inconceivable." Another way of saying this is that cacao is only conceivable from the perspective of maize culture. On our journey to understand the medicine of cacao and its teachings, we must first and foremost give gratitude. We must give thanks for the people made of Corn/Maize. We must remember to give thanks for the maize and its seed keepers, and for those who created the fertile conditions in which the Cacao Twins could be conceived both literally and figuratively. We must remember that without this ancestry the cacao, calabash, and jaguar pods of the cacao forest garden would not exist. By starting with the foundation of the maize culture and the Maize God we can proceed to see how the Cacao Twins regenerate, compliment, re-imagine, and complete the work of their father and uncle, and that is why the Cacao Twins are the masters of re-birth.

In this way we honour and give thanks for the ways in which the life and death of the previous generations are transformed into the fertile soil and food for the next re-generations. It is not just by dying that one becomes an elder and one's actions become the fertile soil/compost of culture and regeneration. It is through service and cultivation of something greater and by participating in feeding and nourishing the World Tree<sup>72</sup> that

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<sup>71</sup> This is a reference to the famous ball game played by the Maya using a rubber ball, and their hips to push the ball through circular hoops on a stone court. This game had multiple political and societal functions and was important enough to be a central element of the story in the *Popol Vuh*.

<sup>72</sup> Stephen Jenkinson once argued that we could only be "healed" in our lifetimes by participating in and serving the healing of a World Tree. Being in service to a World Tree greater than ourselves and participating in its healing can heal us.

one achieves elderhood. The generation of the Cacao Twins stands on the shoulders of the first set of Twins chronicled in the *Popol Vuh*.

Furthermore, we must acknowledge those elders and teachers who have initiated us into the craft and the teachings through their actions, their words, and the gift of their friendship.



FIGURE 1.8. Don Florentino Gomez and Mama Naty, two dear Tojolabal Elders with whom I have spent the last 15 years growing, harvesting, and regenerating cacao forest gardens in the Montes Azules Reserve of Chiapas Mexico. They are standing in front of a replica mural of a cacao trader from an ancient temple in Tlaxcala Mexico and this is doubly meaningful since this couple introduced me to the Indigenous relationship-based culture of cacao trading. Photo taken by Michael Sacco in 2018 in the chocolate museum of San Cristobal de las Casas.

Don Flor and Mama Naty have been my adopted Tojolabal parents in the jungle since 2005. Taking them on the above-mentioned trip to San Cristobal was a way to say thank you to them and to share a bit more of the world together. On this trip they had

their first pizza, first cappuccino, first chocolate truffles and stayed in their first hotel. In the above picture, we savoured a visit to the chocolate museum to appreciate the culture and history of our beloved cacao. Don Flor shared his passion and love for the plants and the animals of the forest garden while Mama Naty shared her gentle wisdom for how to tend the cacao and the achiote with me. Being initiated to cacao and chocolate culture is a gift I hold dear to my heart, and I am struggling to honour the IK and spiritual ecology of cacao and chocolate through which I hope to one day achieve my own elderhood and legacy. In doing so my elders, Gustavo Esteva, Don Flor, Wayne Roberts, Nana Maria, Mama Naty, Mama Nata, Don Max, and many more are honoured and remembered at the head table of my research, writing, and work. They are my seed savers and knowledge keeper elders.

## 2.Fertility: Seed and Soil, Womb and Blood



FIGURE 1.9. Virgin Receiving Impregnation. This picture from *Popol Vuh* illustrated by Luis Garay depicts Lady Blood .

In the paw paw forests of the Northern United-States, farmers continue an old Indigenous tradition of hanging some rotting meat or fish from a tree to bring the pollinators to the paw paw blossoms growing in the remnants of Indigenous forest gardens of North America. Perhaps those are a type of hanging head.<sup>73</sup> Similarly, in the South, the fragrant vanilla orchids circling up the cacao trees attract the pollinators. Between the sweet fecund smell of vanilla and rotting material for bugs to spawn, Indigenous peoples understood how to promote fertility and pollination. Yet there is

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<sup>73</sup> Moreover, some studies on cacao sponsored by the Smithsonian reported that chopping banana shoots and leaving them at the base of cacao trees helps to promote midges that pollinate cacao. Allen M. Young, *The Chocolate Tree: A Natural History of Cacao* (Gainesville: University of Florida Press, 1994).



much more to this symbolic story of the Maize God's head being hung from a tree than just the suggestion that we should hang heads, flesh, or fish from trees. This is an interesting aperture for research and rediscovery of the intelligence and beauty of the spiritual ecological knowledge traditions that are rooted in the Americas and their amazing food forest garden traditions.

In the *Popol Vuh*, the tree of Puk'b'al cha'j in which Hun Hunahpu's head is placed was previously barren. When his head is put in the fork of the branches, many fruits begin to appear, indistinguishable from his head.<sup>74</sup>

When Hunahpu's head was hung from the tree at the mouth of Xibalba it was transformed into a fruit. From the death of the Maize God comes the opportunity for the birth of, cacao, and patastle as the next set of Hero Twins that we shall henceforth refer to as the nonbinary Cacao Twins. In making this renaming of the Cacao Twins I am not drawing on a specific reference, but upon interpretation of the story and meaning of the *Popol Vuh* in part supported by Michael Grofe's doctoral thesis: *The Recipe for Rebirth: Cacao as Fish in the Mythology and Symbolism of the Ancient Maya*. If this is difficult for some traditionalists to accept, I ask forgiveness and hope that the intention of this regenerative re-magining and re-interpreting is acceptable.

Yet the fruit/head is just the potential because you cannot have the food of the gods unless you first have the soil of the gods and that is a complex teaching. So, the virgin daughter of the merchant god pictured above, Lady Blood, finds herself in front of the forbidden fruit of the cacao tree. Her body and womb are the symbol of the fertile body of Mother Earth. Her father, the merchant lord of Xibalba, had an exploitative

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<sup>74</sup> Michael J. Grofe, "The Recipe for Rebirth," 7.

relationship to the Maize God, but Lady Blood as evidenced by her virginity is still pure of heart, mind, and body. The fruit of the tree at the mouth of the entrance to Xibalba was sweet and forbidden and reserved only for the lords of Xibalba. The virgin, Lady Blood, finds her way to the mouth of the cave of Xibalba and standing before the fruit of the forbidden tree her hunger stirs. When she moves to eat the fruit, the head of the Maize God speaks to her, and warns her that she may not want to eat his fruit. She replies that in fact she would like to. The head of the Maize God then spits two spittle-covered seeds into her hand. Consequently, Lady Blood becomes pregnant with a new set of Hero Twins, the Cacao Twins, who are the children of the Maize God and become the hopeful seeds of a renewed era. We see in this a deep connection between blood, womb, and seed (or water, soil, and seed). The virginal and fertile womb (soil) are the prerequisites before the Cacao Twin gods can be conceived. We see here an emphasis not only on the masculine seed's fertility but moreover we see the beauty of the feminine womb and the sacred soil of Mother Earth. Furthermore, we see a connection between heart, blood, and head in the food of the gods, with the fertile womb of Lady Blood as a place for the seed of the Maize God to take root:

Can I not come to know it by seeing the tree that has been spoken of? I hear that its fruit is truly delicious," she said. Thus she went alone beneath the tree that was planted at the Crushing Ballcourt: "Ah! What is the fruit of this tree? Is the fruit not borne by this tree delicious? I would not die. I would not be lost. Would it be heard if I were to pick one?" asked the maiden.

Then spoke to the skull there in the midst of the tree: "What is it that you desire? It is merely a skull, a round thing placed in the branches of trees," said the head of Hunahpu when it spoke to the maiden. "You do not desire it," she was told.

"But I do desire it," said the maiden.

"Very well then, stretch out hither your right hand so that I may see it," said the skull.

"Very well," said the maiden. And so she stretched upward her right hand before the face of the skull. Then the skull squeezed out some of its saliva, directed

toward the hand of the maiden. When she saw this, she immediately examined her hand. But the saliva from the skull was not in her hand.<sup>75</sup>

One of the most fundamental spiritual ecological treasures of the cacao forest gardens is the relationship between seed and sacred earth. Seed and soil, like seed and womb, are inseparable. So, when I write that ‘there is no food of the gods without first the soil of the gods’ I am acknowledging the deep profound complexity of these linkages between soil fertility and seed; and between womb, blood and good food. This holistic focus on the fertility of soil/womb is fundamental to the ‘power’ of Indigenous plant and knowledge traditions.<sup>76</sup> There is a twin relationship between mother and child, and the soil of Mother Earth and agriculture in this teaching. Just as a loving nurturing relationship between the pregnant mother and her belly brings out the best potential in a child, a loving nurturing relationship with seeds and plants emerges through soil making.

From a health perspective, it is a reminder to treat our bodies, wombs, and pregnant mothers with the care, respect, and love of good food, water, and living so that the next generation will flourish. Perhaps an added layer of this teaching is that cacao with its rich nutrients and minerals and healthy fats and proteins is a healthy treat that pregnant women should have and have included in their diet. Reflecting upon Cree elder Rebecca Martel’s question on “what the medicine of cacao is teaching me” I see this teaching as being of special importance for focussing on a good and clean diet for

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<sup>75</sup> Christenson, *Popol Vuh*, 113–114.

<sup>76</sup> Evelyn Fox Keller, *Reflections on Gender and Science* (Newhaven: Yale University Press, 1985). This emphasis on the feminine divine and the soil reminds me of a story from an encounter with a feminist philosopher of science by the name of Evelyn Fox Keller. In the Western tradition, Keller talked about how biologists could benefit from understanding the importance of nurturing the organism, which is a feminine gendered characteristic. That is to say that the gendered approach of nurturing the organism also would yield results that could not come simply by controlling the organism. Without this nurture of the organism, the biologists would not achieve the full potential of what their results could be.

pregnant mothers. At least one modern book on nutrition and food looks at this connection between chocolate and the fetus and is called, *Do Chocolate Lovers Have Sweeter Babies?* by Jena Pincott.

Cree Elder Rebecca Martel in her work on helping to heal from problems caused by fetal alcohol syndrome suggested that the healing of her people had to begin with the unborn child and begin the healing at this point and carry through the infant years. One metaphor Martel used was to say that the mother and the father are like the wings of the eagle. Without both wings the child will never soar. Without soil and seed, masculine and feminine working together, the culture cannot be regenerated. That is all contained in this ancient teaching. At the next layer of this metaphor, we must take up the work to nourish the soil of culture and the sacred Mother Earth, just as we feed our pregnant wives, sisters, and neighbours. We are not separate from nature and soil. Culture is rooted in the soil of place.



FIGURE 1.10. The Maya Clay Monkey incensario made for me by Mayan Elder Nana Maria Ramirez embodies in oral form many of the teachings of cacao we have discussed over the years and rooted in her regeneration of Mayan form and spirituality through her ceramic craft. Nana Maria in 2019 and 2020 has presented ultimate exhibits at the National Archeology Museum in Guatemala on the *Popol Vuh* through the medium of her ceramic work. Photo taken by Michael Sacco in 2018.

### 3. Healing Smoke and the Smell of Heart

Let us return now to the *Popol Vuh* telling of the story of the birth of the Cacao Twins. Once the Lords of Xibalba discover that the Virgin is no longer a virgin and is pregnant with Hunahpu's twins, Lady Blood knows that it's only a matter of time until

they will order her death. Therefore, a plan is devised to help save her and her pregnant belly. They make a deal with the owls who are the messengers and errand takers of the lords of Xibalba and ask them to substitute the resin from a tree of the forest garden instead of Lady Blood's actual heart. Instead, this sap/resin will burn with the smell of heart she tells the owls. One likely interpretation of this is that the resin is from the copal tree.<sup>77</sup> The resin and the bark of the copal tree is used to this day to open community gatherings, ceremonies, to adorn altars, and to prepare for an important meeting in southern Mexico and Guatemala. One could say that the resin from the copal tree "burns with the smell of heart" and is rooted in the Indigenous tradition of cleansing our hearts and minds before engaging in ceremony, in ritual, or in meetings.

The Maize God and Lady Blood predict that the lords of Xibalba will instruct the owls to kill her and ask for her heart as proof of death. Instead of killing her, the owl messengers forge a heart out of tree resin that has the shape and colour of a heart, but most importantly it burns with the "smell of heart." The owls bring this substitute heart to Xibalba as a sign of her death. The lords of Xibalba take the heart and put it on the hot coals and when it burns, they proclaim "that truly it burns with the smell of heart." Because of this they "know" that the owls have done their job and killed the girl. But remember that the girl is pregnant with the Cacao Twins and that maybe there is more to

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<sup>77</sup> This could also be a dragon's heart, which is a dark red incense and sacred colour and resin of the Maya. As Christenson notes in the 287th footnote of his translation of *Popol Vuh*, "Thus the lords will receive not human blood, but rather the red sap of the croton tree (*Croton sanguifluus*; Spanish: *Sangre de Dragón*—Dragon's Blood Tree). Vázquez de Espinosa wrote that 'there is a tree in this province of Chiapa and of Guatemala that is called dragon's blood. It is tall like the almond tree; the leaves are white and the stems are of the same color, and if it is struck with a knife it weeps blood, as natural as if it were human' (Vázquez de Espinosa 1969, 1st.I.iv.590, p. 147. Translation by author). Both blood and tree sap have the same name, *kik*,<sup>7</sup> in Quiché." Christenson, *Popol Vuh*, 118.

this sap/heart burning with the smell of heart than simply the copal smudge symbolism. Perhaps a bit of the cacao medicine and/or a bit of the cacao shell are part of this reference to the burning “with the smell of heart.” There is a divine smell that meets our noses when we step into a kitchen where cacao is being baked or ground. It is an intoxicatingly pleasing and calming aroma. Some would even say that cacao volatiles internalized by breathing can raise your mood<sup>78</sup> and produce a sense of well-being. Others know that cacao is a powerful perfume and something that can be burned and smoked in many ways to enhance the pleasure of the aroma of cigars, incense, and foods in general. Similarly, smoke, particularly from burning incense, can play an important role in public health. In fact, sage incense has been shown to reduce bacterial counts in the air.<sup>79</sup>

In Mayan ceremony, copal and cacao (like sage) create complex chemical interactions with our blood through our lungs while the smell can trigger memories. This trigger of memory fosters the context for the ‘good mind’ or to burn with the smell of heart as proclaimed by the Lords of Xibalba<sup>80</sup>. In the Western tradition, the three Wise Men from the East brought baby Jesus frankincense and myrrh<sup>81</sup>. Frankincense is burned even to this day in so many churches when the masses of people come together, to clean

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<sup>78</sup> Lucy Tobin, “Chocolate Find Smells like a Theory,” *The Sydney Morning Herald*, April 8, 2010, <https://www.smh.com.au/lifestyle/health-and-wellness/chocolate-find-smells-like-a-theory-20100407-rsel.html>

<sup>79</sup> Chandra Shekar Nautiyal, Puneet Singh Chauhan, and Yeshwant Laxman Nene, “Medicinal Smoke Reduces Airborne Bacteria,” *Journal of Ethnopharmacology* 114, no. 3 (December 2007): 446–451. doi: 10.1016/j.jep.2007.08.038.

<sup>80</sup> Reference to the Mohawk “good mind” and the words that come before all other words. Smudge in this tradition helps to cleanse the spirit, the mind, the senses, and to prepare us to undertake the work of cultivating the good mind.

<sup>81</sup> Alina Petre, “5 Benefits and Uses of Frankincense—and 7 Myths,” *Healthline*, December 19, 2018, [https://www.healthline.com/nutrition/frankincense#TOC\\_TITLE\\_HDR\\_2](https://www.healthline.com/nutrition/frankincense#TOC_TITLE_HDR_2)

the air and focus the spirit. The tradition of using incense, or sacred smoke, recognizes the power of its medicinal properties. Today, smoke and smoking are stigmatized from a healthy living perspective, but a deeper understanding of the IK of “sacred smoke” challenges us to see it as both poison and remedy, depending on its proportions and its context. For example, industrial tobacco is a different kind of smoke than traditional sacred tobacco smoke and smoking practices. Industrialized tobacco was bred to have up to 27 times more nicotine to make it more addictive.<sup>82</sup> Whereas burning sacred tobacco was seen as a covenant with the Creator by Indigenous peoples and was not burned so excessively as it is today. Sacred tobacco was smoked as part of prayer.<sup>83</sup> Furthermore, studies have shown that tobacco smoking can help to release serotonin in our brains.<sup>84</sup> Like industrial tobacco, industrial chocolate is a far cry from its Indigenous origins today. However, both retain a deeper sense of their original purpose and medicine, despite the tendency of industrialization to transmogrify the spiritual purpose of the original Indigenous *materia prima* into something that creates addiction and whose primary purpose is to generate profit.

I first clued into the properties of cacao smoke on a conscious level one day when I was peeling roasted cacao outside in the afternoon sun using a conical metal bowl. At one point, the sunlight was hitting the bowl and concentrating its heat onto the beans. After a bit of time, one of the beans ignited and began to smoke/burn with a delicious aroma of cacao. When five minutes later it happened again, I took even more notice! This

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<sup>82</sup> Tonio Sadik, “Literature Review: Traditional Use of Tobacco Among Indigenous Peoples of North America,” March 28, 2014, <https://cottfn.com/wp-content/uploads/2015/11/TUT-LiteratureReview.pdf>

<sup>83</sup> Porter (Sakokwenionkwas), *And Grandma Said*, 317.

<sup>84</sup> Malcolm Gladwell, *The Tipping Point: How Little Things Can Make a Big Difference* (New York City: Little, Brown and Company, 2000), 245.



could have happened by pure chance. However, the serendipity of this happy accident is one of the ways in which those 10,000 hours<sup>85</sup> of mindfully sitting with the cacao, managed to enlighten me in a new way. Hundreds of times since that day, I have become more aware of the physiological and psychological effect that cacao can have on people, many of whom often proclaim, “how good it smells.” One day in 2007, a Kuna Elder known as Achu, stepped into my chocolate shop and expressed that it “smelled like home.” His cousin, Monique Mojica, then shared with me that cacao smoke is always offered to the Creator at the beginning of a Kuna ceremony.

To celebrate this gift of cacao as sacred smoke and to learn more about it from a traditional perspective, I turned to Mayan elder and spiritual timekeeper, Nana Maria Ramirez. She taught me more about the importance of sacred incense in the Mayan traditions and about the ritual of properly building a Mayan sacred fire. Cacao beans, cacao shells, and chocolate have many uses in the construction of the traditional sacred Mayan fire. They are food medicines used before, during, and after a ceremony. Nana Maria also taught me that the key to building a true sacred Mayan fire, is to offer your best *intention*, in the form of the burning incense, with a spirit of generosity and gratitude. In the flames and the recounting of the teachings of the 20 days of the calendar, one can burn one’s intentions clean. With Mayan ritual oration in mind, I have chosen to honour 20 teachings of cacao inspired and guided by the Mayan teachings embedded in the *Popol Vuh*.

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<sup>85</sup> Gladwell, *Outliers*, 35.



FIGURE 1.11. Sacred fire using cacao, chocolate, pine, cedar, and sacred flowers was constructed at the Teepee at Trent University with help of Nana Maria Ramirez and Mayan Elder and Time Keeper Tata Marco Chavarria. Photo by Michael Sacco.

Nana Maria’s words and teachings lead me to question and examine my own “intention”. Ergo, I collaborated with her, an Ajhiq and practicing Mayan timekeeper herself, to develop a simple ceremony in 2012, that would embody some of these understandings of cacao. Together, we also crafted the ceremony to honour the four sacred medicines of the four cardinal directions of the traditional peoples of Ontario: tobacco for the East, cedar for the South, sage for the West, and sweetgrass for the North.

Cacao, copal, and vanilla represented the center and the heart of the intention.



FIGURE 1.12. Mayan Ceremonial plate made by Nana Maria Ramirez with Native Ontario medicines. Photo taken by Michael Sacco in 2018.

We first performed this ceremony together at a chocolate conference at Roy Thomson Hall in downtown Toronto in 2014. In this ceremony we wanted to acknowledge the medicines of this land and the medicines of the forest gardens of Mexico profundo. Furthermore, we wanted to recognize the connection of sacred incense

to the importance of making chocolate with clean and good intention. So, we burned sacred tobacco on hot coals beneath the *metate* to represent the East and the gift of clear vision and gratitude for the gift of life. We burned cedar on the embers beneath the *metate* to represent the South and the cleansing roots of daily actions. To represent the West and the gifts of reflection, we burned sage on the embers beneath the *metate* in an effort to cleanse the grinding stone as well as our intentions. We burned sweetgrass on the embers beneath the *metate* to represent the North and the cleansing and humbling spirit of dreamtime and the great sleep. In this way we warmed up the *metate* to our intentions, while simultaneously warming it up for grinding the cacao. We then burned cacao, vanilla, and copal in the center of the ceremonial plate to symbolize our meditation upon the Mayan forest gardens.

At this juncture in the ceremony, security guards at Roy Thomson Hall showed up to inform us we could not burn anything else; but the work was already done by that point. Burning sacred incenses like copal, cacao, tobacco, and sweetgrass help us to purify and clean our intentions. This ritual prepares the place and the people to give and receive the gifts of the spirit and thanksgiving. The burning of sacred smoke combines with the words that come before all other words to create the context for the good heart and mind to arise. Setting the right tone is fundamental to cultivating a good mind in a team or a group of people gathered together, and this is something deeply understood in Native spirituality. Add a delicious drink or bite of medicinal chocolate to that ceremony and you have another strong nourishing spiritual catalyst. It is advisable for those working with cacao and seeking to cultivate a clean intention and respectful relationship

to the medicine of the cacao, to use the Indigenous tradition of cleansing the place, the mind, the heart, and the intention with sacred incense. This is an essential step in rediscovering the food of the gods. In performing this ceremony at Roy Thomson Hall, we did not seek to rediscover an old ceremony as originally practiced. Instead, we renewed our intention to work with cacao in a way that respects chocolate's place of origin and the distant land (Ontario) in which we are making chocolate and sharing its spiritual ecological teachings. We let the creativity of our spirit and our good heart intention guide us in that prayer.

Since that initial ceremony at Roy Thomson Hall, I've been able to make chocolate a handful more times using this practice. One of those times was in a Zapotec village of Teotitlan del Valle, in Dona Angela's home. With the help of two other Zapotec grandmothers, we were able to make a complete batch of chocolate on a stone *metate*. Using four ancient varieties of cacao and heating the metate with the coals and the sacred smoke, that frothing chocolate beverage was craft, tradition, and ceremony all in one. I was grateful to learn from master grinders how to use the metate like an expert.



FIGURE 1.13. Metate in Oaxaca chocolate making ritual. The coals beneath the metate at the Village of Teotitlan del Valle helped to warm the stone and help soften the cacao butter and facilitate the grinding chocolate, and the copal helped us to first cleanse the stone and our intentions. Photo taken by Michael Sacco in Teotitlan del Valle, Oaxaca in 2014.

At the beginning of this chapter figure 1.10 shows a ceramic three-footed incensario made by Nana Maria Ramirez. The ceramic incensario piece depicts a monkey with healing sacred smoke coming out of its mouth. The monkey, eating the good cacao fruit, has his heart filled and fed, and as a result lets the good word go into the world represented by the sacred incense emerging from his mouth.

There are many more symbols and teachings embedded in Nana Maria's ceramic sacred incensario, but this connection between cacao food, monkey, healing smoke and good mind are central and connected to the ancient connection of monkeys and cacao in many of the original teachings.

#### 4. Regeneration and Renewal: Carrying Forward the Best of Past Generations



FIGURE 1.14. Picture taken of an ancient mural preserved in ruins at Teotihuacan, Mexico 2018 by Michael Sacco. This mural represents a planting of maize, and other food crops connected to fish mounds as seen in the soil. Ancient seeds of maize, amaranth, and chia were found buried at this site and dating back at least 1,500 years.

When the girl from Xibalba, pregnant with the Maize God's twins, escapes to the world above, she seeks help from her mother-in-law, a powerful earth goddess deity. However this earth goddess and mother to the first Hero Twins is incredulous of this pregnant woman's pleas. Unfortunately, she knows that her sons, the first set of Hero Twins, were invited to Xibalba and killed because they could not overcome the impossible challenges set for them by the Lords of Xibalba. So how could this girl be

pregnant with her grandchildren? Ergo, this future grandmother challenges the pregnant woman by asking her to go to the corn field, the *milpa*,<sup>86</sup> and to come back with a net full of maize cobs. The wise tricky old grandmother knows that there is only one cob in this entire field of corn:

Very well then, I hear you that you are my daughter-in-law,” the maiden was told. “Go then to get food that they may eat. Go and harvest a great netful of maize and return with it. Then you will surely be my daughter-in-law, just as you have said.

<sup>87</sup>

Grandmother knows that it is an impossible task. Upon arrival at the field, the girl notices the single corn cob. In response, she calls upon the wisdom of the father of her pregnant belly, the Maize God, Hun Huanahpu, to help her. She takes the hairs from the top of the corn cob and runs them through her fingers. Miraculously, the cobs of corn on the plant multiply and she fills the net with an abundance of maize cobs, without removing the lonely cob that was there in the field at the beginning.

The civilization that gave rise to maize, beans, and squash possessed a deep understanding of maize plant biology, breeding, and the anatomy of corn as well as numerous other plants, with sophisticated vocabulary and detail. To eat these wondrous foods originary to Mesoamerica is to marvel at these accomplishments and deep Indigenous knowledges. Moreover, modern botanical science of the 20th century proved what the *Popol Vuh* had long kept within its pages: the hairs and tassels of the maize are

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<sup>86</sup> “A milpa is a field, usually but not always recently cleared, in which farmers plant a dozen crops at once including maize, avocado, multiple varieties of squash and bean, melon tomatoes, chilis, sweet potato, jicama, amaranth and mucuna.... Milpa crops are nutritionally and environmentally complementary. Maize lacks the amino acids lysine and tryptophan, which the body needs to make proteins and niacin... Beans have both lysine and tryptophan.... Squashes, for their part, provide an array of vitamins, avocados, and fats. The milpa, in the estimation of H. Garrison Wilkes, a maize researcher at the University of Massachusetts in Boston, ‘is one of the most successful human inventions ever created.’” Charles C. Mann, *1491: New Revelations of the Americas Before Columbus* (New York City: Knopf, 2005), 197.

<sup>87</sup> Christenson, *Popol Vuh*, 124.



instrumental to the fertilization of the kernels of the maize plant and the abundance of the field garden:

Thus, she went to see the maize plant. But there was a single ear of maize still on the maize plant, and it was clear where the net had been placed beneath it. The Grandmother thus rushed back to her home and said to the maiden: “This is but a sign that you are in truth my daughter-in-law. I will surely watch your deeds, for they that are to be my grandchildren are enchanted already,” the maiden was told.<sup>88</sup>

When the pregnant girl brings this net full of corn cobs back to her mother-in-law, knowing the impossibility of this task, the grandmother accepts that these twins are truly blessed like their father, the Maize God. She accepts the girl as her daughter-in-law along with the twins in her belly as her grandchildren. They are the next generation and the regeneration of her hopes.

What this part of the *Popol Vuh*'s telling symbolizes to me is the importance of renewing and regenerating the knowledge of cultivating the maize and the Three Sisters of the milpa. It means that before this girl can give birth to a new set of Hero Twins, the Cacao Twins, who will symbolize the forest garden of cacao, calabash, and/or patastle, she must first renew and regenerate the best of the knowledge and techniques of the previous agricultural tradition. She must cultivate and honour the knowledge, the techniques, the tools of the Maize God and his twin brother. This is very important because the Three Sisters of the field garden, the squash, the beans, and the corn, along with the sacred geometry of this complex milpa polyculture, are what give rise to the possibility of the Three Pillars of the forest garden: the cacao, the vanilla, and the achiote, which will be discussed at length in Chapter 2 of this dissertation. The beauty and

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<sup>88</sup> Christenson, *Popol Vuh*, 127.

sustainability of the Indigenous field garden is the place that gives rise to the emergence of a regenerative forest garden. It is regenerative because it is not only a food garden, but also a replanting of the forest which the maize field originally had to cut down and use for construction and for fuel. It is regenerative because it moves from an annual crop to a perennial and even intergenerational agricultural tradition. Generation and regeneration, or as I like to see it, the move from a sustainable agriculture to a regenerative agricultural paradigm are pregnant at this moment.

Then she took hold of the cornsilk, the cornsilk atop the ear of ripe maize, and pulled it upward. She did not pick the ear of maize, but it multiplied there in the net until the great net overflowed.<sup>89</sup>

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<sup>89</sup> Christenson, *Popol Vuh*, 26.



FIGURE 1.15. Virgin pollinating maize, Luis Garay illustration of *Popol Vuh*. Some research indicates that the Yucatan peninsula suffered from deforestation<sup>90</sup> because of the massive population density. As sustainable as growing the polycultures of the maize milpa were, they were not long-term sustainable.

A new study shows that centuries of deforestation by the Maya people have drastically changed the ability of local rainforests to store carbon in the ground. And even now—long after the Maya cities were mysteriously abandoned and the forests grew back—the region's carbon reserves have not yet fully recovered.<sup>91</sup>

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<sup>90</sup>Carly Cassella, “Ancient Maya Landscape Never Recovered from Deforestation Thousands of Years Ago,” *ScienceAlert*, August 22, 2018, <https://www.sciencealert.com/the-ancient-landscape-of-the-maya-never-recovered-from-deforestation-thousands-of-years-ago-scientists-warn>

<sup>91</sup> Cassella, “Deforestation,” para. 3.

## 5.Cacao Twins and Twinning: Cacao and Calabash, Patastle and Mamey, Decay and Rebirth, Blood and Bone, Heart, and Head

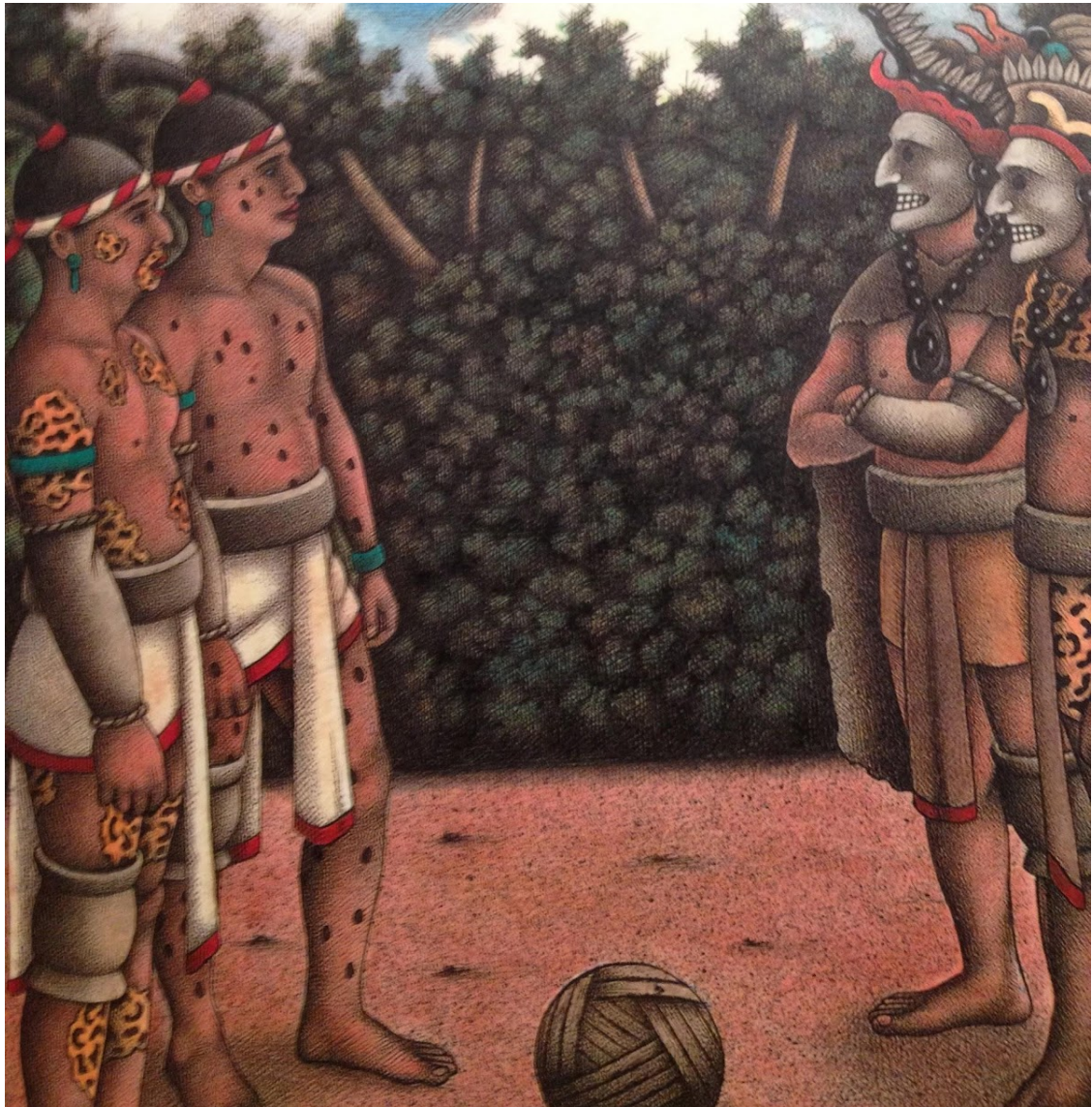


FIGURE 1.16. The Cacao Twins, Hunahpu and Xbalanque, face off with the Lords of Xibalba in an epic battle on the Ball Court. Note the jaguar skin on Xbalanque, and the cacao bean spots on Hunahpu. This picture is the cover of the *Popol Vuh* as retold by Victor Montejo and illustrated by Luis Garay.<sup>92</sup>

<sup>92</sup>Montejo, Victor, ed., *Popol Vuh: A Sacred Book of the Maya* (Toronto: Groundwood Books, 1999).

Perhaps one of the most important things to consider when reading the *Popol Vuh*, is that we cannot read the *Popol Vuh* like we read other books. It is not a book. It is not the product of a textual culture, just like cacao is not the haphazard product of some accidental forest agriculture. Instead, we must read the symbols contained in the pages of the *Popul Vuh* with their corresponding twinning and deeper Oral knowledge teachings. This oral constellation of multiple meanings depending on context, challenges modern textual minds and ways of thinking. Twinning does not allow us to settle on simple solutions and interpretations. Instead, it challenges us to renew the tension of interpretation and context, a veritable hermeneutic *aporia* or crossroads where there is an ever-changing definitive translation and understanding. Another way of understanding this “twinning” of Oral symbols and meanings within the current textual discussion is to continuously challenge any single understanding and see that in the fullness of time what can happen will happen, and all the twins and their interpretations will eventually have their day. This twinning as in companion cropping is highly generative of creative combinations.

How could both the Hero Twins and Hun Hunahpu represent fish, maize, and cacao? Despite these seeming contradictions, the symbolism of Mesoamerican deities may allow for a flexibility that transcends our desire to see them as logically discrete entities. Describing what he asserts are the core elements of a shared cosmology, Alfredo López-Austin observes that the Mesoamerican cosmos and its representative deities can be divided and recombined in any number of ways (López Austin 1997).<sup>93</sup>

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<sup>93</sup> Grofe, “Recipe for Rebirth,” 58.

In many writings of the *Popol Vuh*, the head of Hunahpu, the Maize God was translated as a calabash. However, upon first reading the *Popol Vuh* in 2004, while studying in the orality seminar at the Universidad de la Tierra,<sup>94</sup> I did not just read the word “calabash”, but I also read the word “cacao”. Today, supported by this deeper understanding of Oral knowledge, I read cacao, calabash, and jaguar cacao (patastle) all at once. Years later, when I read Mayan linguist Michael Grofe’s PhD thesis on the *Popol Vuh* and his linguistic reinterpretation of the calabash as cacao, I was able to find key academic support for this interpretation. However, even back then, I followed Gustavo’s counsel to creatively read, interpret, and write about the *Popol Vuh*. Below, view a picture first of a patastle jaguar cacao pod, followed by a criollo cacao pod from the same region, and finally a calabash in the Chinantla region of Oaxaca Mexico.



FIGURE 1.17. Patastle “jaguar” cacao. Taken by Michael Sacco in 2016 in San Felipe de Leon, Oaxaca, Mexico.



FIGURE 1.18. Red cacao,

Theobromae cacao. Taken by Michael Sacco in 2016 in San Felipe de Leon, Oaxaca, Mexico.



FIGURE 1.19. Calabash or jicara is used for making bowls and water holding vessels. Photos taken by Michael Sacco in San Felipe de Leon, Oaxaca, Mexico.

The beauty of this Oral twinning urges us to contemplate the deep symbols of culture and plant relationships in a myriad of ways. For example, cacao is the delicious drink, and the calabash the biodegradable vessel/cup of the forest garden. The cacao is the life-giving blood, while the calabash is the bone. Another interpretation is that the cacao is the brain, the patastle the meat, and the calabash the skull.

Furthermore, those familiar with the Cacao Twins Hunahpu and Xbalanque will recognize that Xbalanque has the spots of a jaguar on his arm. When Cacao Twins jump into the pit and sacrifice themselves in the telling of the *Popol Vuh*, this represents the

fermenting of the seeds. This clearly is a reference to the jaguar cacao not calabash as the calabash seeds are not edible nor are they fermented.

In a spiritual and ecological sense, the forest gardens of Mexico Profundo are full of examples of the concept of twinning. Twinning is a reminder that the textual modern mind must suspend the certainty of its ways of seeing and understanding and avoid the reductionism of the textual understanding. It means navigating the tension between differences without falling into dualism, and it is part of the nuance of native science: “Native Science at its highest levels of expression is a system of pathways for reaching this perpetually moving truth or ‘spirit.’<sup>95</sup> I describe this perpetual moving of knowledge as twinning as it connects to the relationship of the knower and the knowledge and the importance of being alive and aware and responsive to the tension of a living relationship and way of knowing. Respecting Oral knowledge traditions is key to savouring and contemplating these intercultural reflections on the teachings of cacao.

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<sup>95</sup> Cajete, *Native Science*, 19.



## 6. Animals as Teachers: Animals as Maker Poets of the Original Forest Garden Commons



FIGURE 1.20. Monkey and cacao pod. Artes de Mexico Cacao Issue detail from *Agua Preciosa* by Miguel León Portilla.

How can monkeys or jaguars be our teachers? I first began to meditate upon these questions years ago while walking the traditional forest gardens of Chiapas, Mexico in the region of Montes Azules reserve, in the Lacandón Jungle. This question re-emerged again as I came to understand the intimate connection between the village of San Felipe de Leon, the jaguars, and the jaguar cacao tree and fruits.

The jaguar's nocturnal routine of roaming in and out of the cacao trees within the rainforest may have aligned it symbolically with cacao, perhaps as a guardian. This feline's association with cacao was further reinforced by its habit of resting in the tree's limbs, possibly waiting to prey on the pesky monkeys that shamelessly yank the cacao pods from the tree to get at the tasty pulp inside. In several Maya languages, the name for a particular kind of cacao (patastle, or *Theobroma bicolor*) is *balam-te*, or jaguar tree.<sup>96</sup>

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<sup>96</sup> Nathaniel Bletter and Douglas C. Daly, "Cacao and its Relatives in South America: An Overview of Taxonomy, Ecology, Biogeography, Chemistry, and Ethnobotany," in *Chocolate in Mesoamerica: A Cultural History of Cacao*, ed. Cameron McNeil (Gainesville: University of Florida Press, 2009), 45.



FIGURE 1.21. Jaguar glyph in *Universe de Quetzalcoatl*, image and glyph of the ancient Teotihuacanos with many deep layers of symbolism and meaning tied not only to the passage of Venus and its association with the planting rains and the harvest drying time, but also the combination of red and white cacao.

My inquiry into the way in which animals could be teachers about cacao culture began in 2006 with the uniquely Oaxacan story of the Jaguar de Luz<sup>97</sup> from the Chinantla region of Oaxaca where we found patastle trees to regenerate. The story of the Jaguar de Luz is a story about the Indigenous peoples of Oaxaca's struggle to find an honourable home for jaguars in their modern life.

Secondly, I was frightened by the power of the boa constrictor when I stepped on two of them in two days while walking the cacao forest gardens of the Lacandón Jungle. I will share this experience and what I learned from it below.

Finally, I was inspired to research this concept of animal teachers more after

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<sup>97</sup> Jaguar de Luz, "Oaxaca: Crean 'fondo de recuperación' para un jaguar de luz" *El Proceso*, December 17, 2005, <https://www.proceso.com.mx/nacional/2005/12/17/oaxaca-crean-fondo-de-recuperacion-para-un-jaguar-de-luz-55902.html>.

reading Gregory' Cajete's teachings on biophilia<sup>98</sup> in his inspiring work on Indigenous "epistemology" called *Native Science*.

In my quest to understand the medicine of the cacao, I asked myself 'what can these animals teach us about cacao?' One New Year's Eve, at the Evergreen Brickworks market I was there preparing hot chocolate for a community event. Great-grandson of Tecumseh and Native Toronto mural artist and storyteller Phil Cote, was also there sharing traditional stories about the ice runners. While we shared a warm and delicious chocolate drink together, we marvelled at how heavenly and nourishing it was. The divinity of this moment when it is properly captured is the true reason the name "theo-bromae" (food of the gods) cacao has stuck! Jokingly, I said to Phil, "it makes you wonder how they discovered hot chocolate doesn't it?" Phil replied: "I know how.... (pregnant pause).... would you like to know?"

I answered: "Yes!"

That's when Phil told me the story of Bear Medicine. Phil is from the Bear Clan. He talked about what the ancestors learned from the bears, by closely watching and observing what they were doing in the fall before hibernation, as well as in the spring after hibernation. They payed attention to how they foraged, how they fasted, and how they cleansed themselves before and after a fast with roots, berries, fungus and other

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<sup>98</sup> In his seminal work on *Native Science* Indigenous scholar Gregory Cajete defines "biophilia" on p. 24 and situates the concept in relationship to Western Academia's work on phenomenology: "According to Edmund Husserl the conceptual father of phenomenology, there is a kind of "associative empathy" between humans and other living things, which is grounded in the physical nature of bodies. Sociobiologist E. O. Wilson calls this empathy "biophilia," or the innate human instinct to affiliate with other living things." In later discussion, Cajete goes on to describe how biophilia is a relationship to nature and natural beings that recognizes the importance of intimacy and caring observation and participation to fully understand nature and natural beings through and in good heart/mind relationships.

forest medicines. Furthermore, biophilia and learning from animals requires one to be open to the gifts of the spirit of knowing that move beyond the 180 degrees of rational logical ways of coming to know. One must think like a bear, or a monkey, or a jaguar, and that means going beyond the merely logical ways of seeing and knowing. It requires one to be in the “nature” of the animal. This extralogical way of knowing is fundamental to Indigenous spiritual ecology. Unlike agroecology, which is objective and utilitarian in its approach, spiritual ecology prioritizes the communion/relationship of the witness/participant with the knowing through a lived relationship. Close observation in a loving and open way is part of the key to this Native science practice of biophilia or learning from both animals and plants. Biophilia is part of spiritual ecology and is inseparable from biophilia as *Native Science* author Gregory Cajete so succinctly explained:

It is believed that animal nature helped to create humans and that animals have always served as humanity’s mentors in coming to know the nature of the world. This first knowledge gained by humans from animals is said to have been lost in antiquity as a result of human misbehaviour toward animals. However, it is believed that this ancient knowledge can be accessed through proper ritual, ceremony, dream, and vision. The wall that separates the human and animal worlds is thought to be thin.<sup>99</sup>

This kind of knowledge is not unconnected to the stories we see in the *Popol Vuh* where the Hero Twins' two uncles (their father’s older brothers) are transformed into monkeys. Why do monkeys appear and reappear so often in the context of the telling of cacao and its origins? One answer is that they are perhaps the first to have found the power, the fun, and the medicine of the cacao. Many years ago, a former researcher on our team Graham

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<sup>99</sup> Cajete, *Native Science*, 151.

Corbett who spent a lot of time working on behalf of ChocoSol in Chiapas retold a story he heard about how monkeys were seen fermenting cacao fruit and seeds in hollow logs in the middle of the jungle. The monkeys would then literally be drunk on chocolate, and we know from anthropology that fermented cacao and maize drinks were part of community ceremonies. I have never seen or come across this telling of monkeys fermenting cacao fruits or in the literature on cacao, but the story itself is not implausible and even if it is dubious, it can still be generative for imagining the origins of cacao. Who better to teach humans about a delicious fruit and cacao seed than monkeys?

Where and how did the first peoples discover the art and technique of food fermentation? Fermenting cacao fruit and seeds is a unique combination of acidity, cacao, and alcohol. The fermented cacao fruit juice has the function of developing the seed and readying it for human consumption, but the alcohol created is also a useful by-product. We also know that Indigenous peoples of Mesoamerica ferment both maize and cacao into alcohol for village festivities. Therefore, the art and craft of fermentation was a part of the knowledge culture of first peoples. This kind of biophilia is dwelling with natural processes like fermentation and knowing how to cultivate a good fermentation culture also requires a close and intimate understanding of the tiny, microscopic animal teachers and helpers we call yeast. Even to this day cacao and patastle are fermented not only to develop the seeds flavour but to enjoy the alcoholic fermentation of the fruit. One only has to travel in the Lacandón jungle and talk to a few *cacaoters* to find a story or two about workers who have made an alcoholic still out of the beverage and kept it hidden in

the forest garden. I heard this story from a Tojolabal Elder named Rafa Gómez in San Felipe Jatate.<sup>100</sup>



FIGURE 1.22. Co-fermentation of white and red cacao embodies this teaching tradition. This picture was taken for me and Chinantec Elder Don Maximino Martinez by my friend Christou during a visit to Chinantla in December November 2018.

Imagine how these monkeys would have behaved after drinking the alcoholic fruit and the energy enhancing cacao simultaneously. There is no question about the origins of

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<sup>100</sup> Don Rafa Gomez, an old-time cacaoero who passed away over a decade ago, loved to share the story of the Guatemalan worker he would hire to help him with the harvest. However, after years of work he found the quality was no longer there and as he went to visit the parcel of land in the Lacandon jungle to observe the work he felt that something was off and the part of his worker seemed drunk. He looked for bottles but could find nothing, until one day the worker was so obviously inebriated, he asked him directly. The worker took him to a pit in the ground where he had fermented the cacao fruit into alcohol and confessed to being drunk.

cacao and monkeys being connected if you read the *Popol Vuh*, but exactly how is most likely not reducible to just one telling. Below is an excerpt from the *Popol Vuh* on the uncles of the Cacao Twins who were transformed into monkeys:

And since that time, they [Cacao Twins uncles who transform into monkeys] have been called upon by the flautists and the singers. The ancient ones also called upon them, they who were the writers and the carvers. A long time ago, they became animals. They became spider monkeys because of their pride, for they had abused their younger brothers [Cacao Twins] according to the dictates of their hearts. Thus, they were ruined. One Batz and One Chouen were lost, becoming animals. Thus, their community and their home is now among the flautists and the singers. For great were their accomplishments when they dwelt with their grandmother and their mother.<sup>101</sup>

Our Elder and Mayan ceramic artista Nana Maria Ramirez, embodied elements of this mysterious monkey teaching in a sacred cacao incensario she crafted. When the monkey's belly is filled with the delicious cacao food; the good word comes from the monkey's mouth. This smoke symbolizes the monkeys deep connection and awareness of the power and medicine of the cacao which is symbolized by the copal incense that pours forth from his mouth as he holds his pod of fresh cacao in his hands!

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<sup>101</sup> Christenson, *Popol Vuh*, 135.



FIGURE 1.23. Monkey Incensario.. Photo taken by Michael Sacco in 2018.

At this point I could talk at length about the Jaguar and what that animal teacher has revealed in the context of the Chinantec forest gardens I frequently visit, but I shall save that for Chapter 2 on the spiritual ecology of the forest garden and our work in the Chinantla region of Oaxaca, Mexico. However, there is one last story I would like to



share about the boa constrictor and what it taught me personally about humility and working with the people whose cacao cultures and traditions stretch back millennia.

In 2009, I had the opportunity to support the organic certification process of almost two hundred cacao farmers in the Montes Azules Reserve and surrounding communities, in Chiapas, Mexico. This certification process inevitably failed, but it did teach me much about the complexities of those organizations, those communities, their troubled and troubling relationship to government, to corruption, to funding, and to cacao buyers. At the same time, I became aware of the beauty of their place and their communal land traditions called *ejidos*, and the diversity of the people living in those communities in and around the Montes Azules Reserve. In short, it was one of the many steps along my journey to understanding the deep connection between the forest garden plot and the traditional Indigenous communal land holding structures and communities in Mexico. By no means would I call myself an expert on these ancient communal land governance models as there are hundreds of different nuanced traditions throughout Mexico alone. Instead, I would consider myself cognizant of the great gift of hospitality in those communities and as a friend and ally to people and forests when possible. Yet it is not always so simple as claiming solidarity or allyship when one is a privileged North American cacao purchaser. Not all people see your good intentions or even share your vision of good intentions<sup>102</sup>. So, in this muddied world of intentions, cacao, money, politics, governments, and bureaucratic certifications, we can easily find the waters becoming unclear in terms of whose interests are being served or whose intentions are

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<sup>102</sup> Ivan Illich, "To Hell with Good Intentions," (address, Conference on Inter-American Student Projects, Cuernavaca, Mexico, 1968); Michael Sacco, "Technefictionz" (Master's diss., York University, 2003).

“good.” Humility, and a clean relationship with real people are the moorings of a healthy relationship.

On one of the journeys to a little community called Flor de Cafe, up off the *zona fronteriza* touristic highway in Chiapas, not far from the border with Guatemala, as we were walking the land with a producer who was not particularly interested in the certification process or even the cacao for that matter, I tripped on a root and fell forward. As I looked back, I noticed that the root appeared to be moving. In fact, as I looked more closely I realized it was actually a large boa constrictor! In my surprise and awe, I drew the attention of the certification expert and the farmer to the animal. The farmer then threw stones at the snake repeatedly until it began to bleed. I asked him to stop and eventually he lost interest and we left the snake in peace. That night, I reflected upon that interaction and the consternation of tripping on a thick root that was actually a moving force of nature. Never in my life had I seen such a large snake.

The next day, I went to the Ejido Amatitlan, inside the Montes Azules reserve, which straddles the emerald green Jatate River. I went to visit and help in the certification process with a great *cacaotero*, Don Ramy who to this day remains one of my favourite *cacaoteros* and family leaders. Don Ramy’s sons, wife, and grandchildren are some of my best allies and friends in that community and embody the dignity of work as a family, and the proud traditions of Mesoamerican traders and entrepreneurs.



FIGURE 1.24. Picture of Don Ramy of Amatitlan, Chiapas, Mexico. Don Ramiro is standing beneath a sideways hanging cacao tree laden with pods and reminiscent of the cacao God's head. Taken by Michael Sacco in 2010.

We walked on Don Ramy's land where I noticed how they used rotten stumps to fill holes and then plant the cacao trees atop of these mounds. As I was climbing over some large fallen trees, I stepped on what I thought was a rather thick tree branch that suddenly began to move beneath the mass underneath my feet. The whole pile shook as the most enormous snake I had ever encountered, slithered down into the safety of a darker less disturbed place. Atop the bramble of fallen trees, I stood there, shocked and amazed, not knowing whether to run or to stay quiet. In the end I simply stepped off the

bunch of trees in an anticlimactic way. I was a bit shaken by the size of the creature I had just stepped on for the second day in a row but moments later, I shook it off and caught up with Don Ramy and his son on the hillside.

That night, I went back to Don Flor's house in San Felipe Jatate. Don Flor is like my Tojolabal father in the jungle and someone who truly looks after me and my family when we visit. I told him the story of the boas and asked him why he thought I was stepping on so many boa constrictors. Don Flor smiled and told me that animals were like dreams, in that they would both come to us to share messages if only we knew how to listen. I pondered this and asked Don Flor a bit more about the boa constrictor. The boa, he explained, is a guardian snake that eats the more venomous snakes and rarely, if ever, harms humans. It is a titan of the earth; a strong earth energy that does not move quickly but moves powerfully when it does. That night, I took those thoughts to bed and in the early dawn I began to understand what I think the boa constrictors were trying to teach me.



FIGURE 1.25. Self-portrait with Don Flor while harvesting cacao in 2017.

Reflecting upon these encounters, and my dreams I began to see an important message emerge. With humility I learned that I would not be able to change the way all the people grew or sold cacao in this ancient corner of the Lacandón jungle. I realized that I would not be able to get through to many of the leaders and producers the spirit of the work that I was seeking to embody. However, several of the local elders and families had accepted me and that this was a great gift. I was reminded again to follow the principle of working with the willing.<sup>103</sup> Recognizing this true blessing means celebrating

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<sup>103</sup> WWW (working with the willing) philosophy relates back to Cesar Anorve's 2002 question: "A place where the people have not invited you to share your ideas and technologies, what do they need you for?"

*working with the willing (www)*, and not trying to convince or persuade the unwilling.

These willing families are like the strength of the boa while the boa is like the strength of the people. If you are in kinship and good relationship to the people, they will protect you just as the boa protects the forest gardens for the people by eating up the more venomous snakes. I learned this from my encounters with the boa not because the boa needed to share this with me, but because I needed to learn humility and gratitude. The boa helped to carry this message for my understanding. I learned to see that in fact I had already been protected and was too busy and too distracted to fully appreciate it, and this encounter with the force of the mighty boa helped me to gather humility and appreciation for this gift of friendship and hospitality. Years later, reading Martin Prechtel's book called *The Secrets of Talking Jaguar*, I found a similar idea to the one that Don Flor shared with me about dreams and animals. Prechtel wrote:

A shaman's bundle is essentially a bundle of dreams...Dreams are a direct incorruptible expression of the mysterious nature of life and are considered to be free of human connivance. Because of this people trusted dreams more than they trusted people. The term for reading a dream was...the same word used for calling animals and weather.<sup>104</sup>

Below is a short excerpt from the *Popol Vuh* that shows more of this dimension of the dialogue with animals. It recognizes that in many ways, every animal carries a message.

These messages are interconnected if only we pay attention respectfully to the beings that

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Cesar Anorve was my original host in Mexico, and responsible for teaching me Spanish. I was sent to learn from him because of his civil society work of properly disseminating dry-composting toilets. Fundamental to Anorve's approach was never forcing change on people, but instead working with the willing to set proper examples of well-functioning composting toilets. Without these willing ambassadors, the opposite result was achieved, and the composting toilets were disgusting! Properly used, they were the embodiment of soil culture. I wrote extensively about this in my master's thesis.

<sup>104</sup> Martin Prechtel, *Secrets of Talking Jaguar: Memoirs from the Living Heart of a Mayan Village* (New York City: Tarcher, 2002), 170.

carry so many kinds of teachings and knowing relationships with the natural world. This is part of the teaching of the biophilia of *Native Science*:

“Why have you come?” they [Hero Twins] asked the falcon.

“I have a message in my belly. But surely you must first cure my eye, and then I will tell it,” said the falcon.

“Very well then,” they replied.

So they took off a little of the surface of their rubber ball and put it in the face of the falcon. This is called Sliced Rubber. Immediately he was cured by them, making good again the sight of the falcon.

“Tell it then,” they said to the falcon.

Thus he vomited the great snake.

“Speak!” they said again to the snake.

“All right,” he replied. And so, he vomited the toad.

“What is your errand? Speak!” the toad was told.

“My message is here in my belly,” said the toad again.

Then he tried to throw up, but he did not vomit. His mouth just drooled. He tried, but nothing did he vomit. Thus the boys wished to beat him.

“You are a deceiver,” he was told.

Then they squashed his rear end with their feet, crushing the bones of his backside with their feet.

Again he tried, but he just salivated at the mouth. So they pried open the mouth of the toad. It was pried open wide by the boys. They searched in his mouth and found that the louse was merely stuck in front of the toad’s teeth. He was just in his mouth. He hadn’t really been swallowed. It was merely as if he had been swallowed.

Thus the toad was defeated. As a result, it is not obvious what food was given to him. He could not go fast; thus he merely became spoiled by the snake.

“Speak!” the louse was told.

Thus he spoke his word.<sup>105</sup>

## 7. Sustainability: Working with Nature is No Longer Enough in the Age of Xibalba

The Mayan small plot-intensive agricultural milpa gardens were much different than their European counterparts. One major philosophical difference was the concept of eking out an existence by the sweat of your brow and by suffering as depicted in the Judeo-Christian tradition by the expulsion of Adam and Eve from Eden. Not to say that

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<sup>105</sup> Christenson, *Popol Vuh*, 147.

there was no hard work in the Mesoamerican approach to agriculture, but that instead of working to control, fight, and restrain nature, Mayan farmers were the master artists of working with nature. Paradise was not lost for Indigenous farmers. This is part of the allusion to the way that the axe and the hoe do the work as though by magic for the Cacao Twins of the *Popol Vuh*. This is why when the Twins take up their father's tools for clearing the land of trees and planting the maize, the beans and the squash that it comes so naturally. The Cacao Twins are the continuation of this line of culture and thinking and their destiny is to take it one regenerative step further beyond sustaining nature, to regenerating nature. The old model of their father and uncle was an agricultural model that no longer could serve the vast Mayan empires, and so the reign of Xibalba came to dominate.

Then they arrived there to farm the maize field. They merely stuck the hoe into the ground, and it truly began to plow the earth. All by itself the hoe did the plowing for them. As for the axe, they just stuck it into the fork of a tree, and by its own strength it would fell it. Thus the one axe chopped and felled all the trees and bushes, feverishly working to cut down the trees all by itself. Now this, the hoe, would break up countless stalks and briars. Just the one hoe would clear countless mountains, both small and great, as it went.<sup>106</sup>

Each morning when they returned however, the land had been rewilded and they had to set about doing their work again. This is a mystery for the Cacao Twins, and so they decided to hide in the bushes and watch what was happening at night and learn about this phenomenon. It is then that they see all the animals gathering and undoing their work.

Someone perhaps has been playing tricks on us, our grandmother. When we arrived a while ago at our maize field, we found that it had become a great field of grass and a great forest once again," they said to their grandmother and their mother.

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<sup>106</sup> Christenson, *Popol Vuh*, 136.



“Therefore we shall go back and watch over it by night. For it is not good what has been done to us,” they said.

Thus they concealed themselves. They went out again to cut down the trees, and then they hid themselves there, taking cover.

At length all the animals gathered together, coming together as one. All the small and great animals arrived in the very heart of the night, chattering as they came.

And this was their speech:

“Arise trees; arise bushes.”<sup>107</sup>

It is the duty of the Cacao Twins to move beyond this stalemate between cultivation and rewilding of the land described above. To move beyond this stalemate the Cacao Twins learn from the animals of the forest how to rewild the forest; that is to say the animals teach them about the process of the maize milpa turning back into a wild forest. In this story some of the techniques and teaching around long term regenerative forest garden agriculture begin to arise. Jaguars and other animals are part of the team, but in the end, it is the rat who shares the secret, and for this he is rewarded with the fruits of the Cacao Twins, patastle and cacao. In these lines, I begin to see the suggestion of moving beyond a simple rewilding of grass and forest to a more purposeful rewilding of field and forest more akin to a permaculture than a labour-intensive agriculture. The second set of Twins work to find a way of learning from and with nature to extend the life cycles of the field *milpa* another step, and this is how the forest garden milpa begins to emerge. It is Rat that is rewarded for helping the Cacao Twins to understand this transition. The inclusion of the forest garden effectively doubles the food basket of Mesoamerica to include both field and forest garden ecogastronomy options.

Very well then. It is what belonged to your fathers, One Hunahpu and Seven Hunahpu by name, who died in Xibalba. They left behind their gaming things hanging above the house—their yokes, their arm protectors, and their rubber ball as well. Your grandmother did not show these to you, for it was because of them

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<sup>107</sup> Christenson, *Popol Vuh*, 138.

that your fathers died.”

“Is it not true? Do you truly know this?” the boys asked the rat.

Thus they rejoiced in their hearts when they heard from the rat the news about the rubber ball.

This, therefore, was given to the rat as his food—grains of maize, squash seeds, chili peppers, beans, pataxte, and cacao.<sup>108</sup>

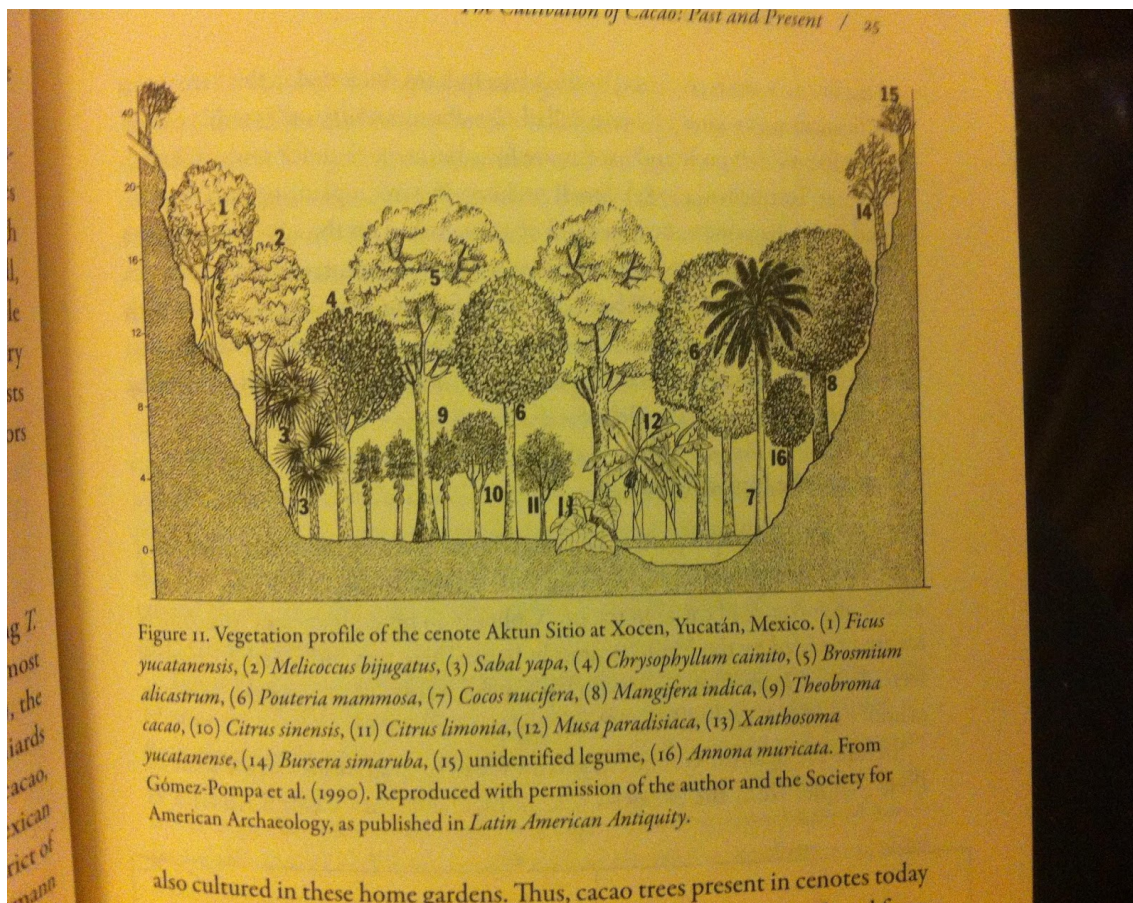


FIGURE 1.26. Cenote forest garden. This image from Allen M. Young, *The Chocolate Tree*, published by the Smithsonian institute shows many of the diverse food and purpose trees of the Mayan forest garden. In particular, this is in a cenote depression in the Yucatan Peninsula and as a result was able to preserve the species long after the practice of forest gardens of old was neglected and the late 20th Century re-discovery was underway.

<sup>108</sup> Christenson, *Popol Vuh*, 140.

## 8.No Cacao Without Maize: The Importance of the Death and Rebirth in Regenerative Spiritual Ecology

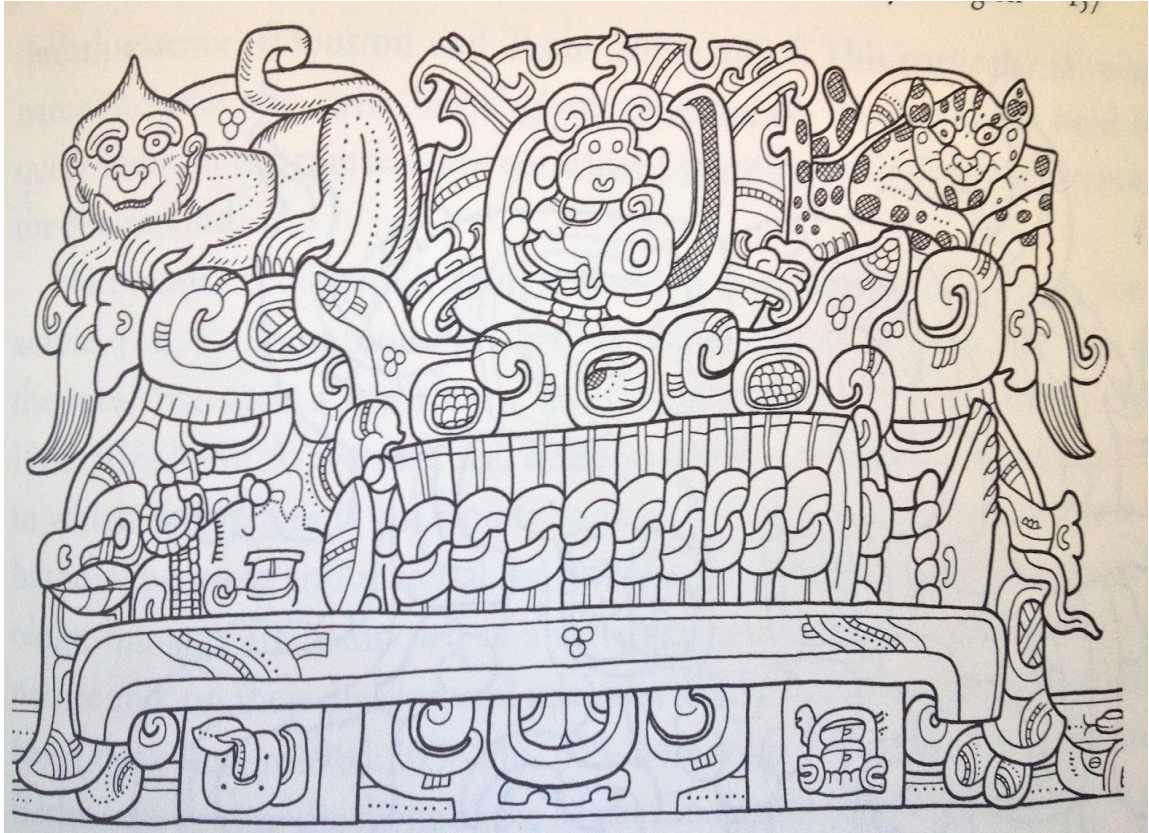


FIGURE 1.27. Mayan glyph of the Maize God on his funerary altar. Monkey, Rain God, and Jaguar preside over his death.

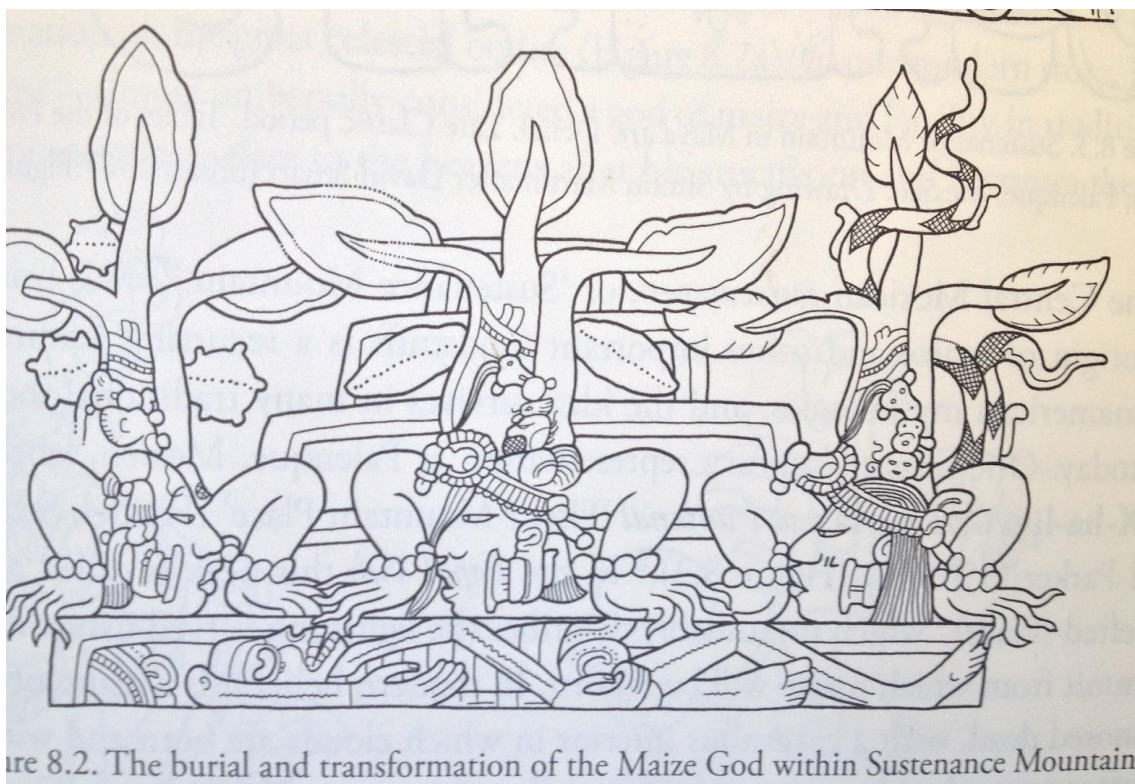


Figure 8.2. The burial and transformation of the Maize God within Sustenance Mountain.

FIGURE 1.28. Maize God's Transformation. In the second tableau/glyph the maize god's skeleton is seen below the soil and from his flesh spring the Three Pillars of the forest garden, the Cacao, the Vanilla, and the Achiote, not to mention many others like the Patastle, the Calabash and the nitrogen-fixing madre cacao that combined with the vanilla fulfills a role akin to the leguminous nitrogen-fixing beans of the field garden.<sup>109</sup>

Cacao is inconceivable without maize. Cacao culture grows out of the previous maize culture as in the above glyphs. The *Popol Vuh*'s messages here can be read as the telling of epochal changes, shifts, and transformations, and this epochal change is from that of the era of the Maize god's fall at the hands of Xibalba to the arising of the regenerative Cacao Twins. An early Nahuatl citation in Sahagun refers to cacao seeds

<sup>109</sup> Simon Martin, "Cacao in Ancient Maya Religion," 157.

“like corn kernels.”<sup>110</sup> The similarity doesn’t stop at maize cobs and cacao pods and the clusters of seeds contained therein. Similarly, nitrogen-fixing beans that climb the maize stalk are like the odiferous vanilla climbing the cacao tree and fed/helped by the nitrogen-fixing madre cacao trees that grow fast to shade the cacao seedlings.<sup>111</sup> Squash and pumpkin of the field garden with their gourd like shapes, delicious flesh and healthy seeds are mirrored and correlated to calabash gourds of the forest garden and patastle seeds not to mention by the shade giving achiote that protects the soil from drying out just like the broad leaves of the squash plants in the field garden. The red spicy chilies and epazote greens of the field garden are mirrored by the allspice, red achiote, and the hierba santa greens of the forest garden. The polyculture of the field garden is complementary and analogous (not equivalent) to the polyculture of the forest garden. Combining the two agricultural systems created a veritable cornucopia as will be discussed in Chapter 2 of this dissertation and is fundamental to the ecogastronomy of Mesoamerica to this day. Attention to the life and death cycle of a field milpa and its connection to the living soil and to the forest it displaced, is an important element to understanding the regenerative and re-evolutionary nature of the cacao forest milpas. The birth of the Cacao Twins chronicled in the *Popol Vuh* is highly significant from an agro-civilizational perspective.

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<sup>110</sup> Karen Dakin and Søren Wichmann, “Cacao and Chocolate: A Uto-Aztec Perspective,” *Ancient Mesoamerica* 11, (2000): 58.

<sup>111</sup> Madre de Cacao is a nitrogen-fixing tree that can grow from 10 to 12 meters high. In many tropical and subtropical countries, the tree is used for various purposes such as live fencing, fodder, coffee shade, firewood, green manure, and rat poison. The tree can also be used for medicinal and insect repellent properties.

This deep connection is why the Cacao Twins plant a maize stalk at their grandmother's house before going to defeat the lords of Xibalba. The maize stalk symbolizes their health and well-being in Xibalba and will let their grandmother know if anything happens to them. The maize plant becomes the living symbol of their well-being and wholeness in the place where the original Maize God and his twin brother were sacrificed. In symbolic terms the wisdom and the ecology of the maize milpa is at the heart of the Cacao Twins' birth and transformation on many levels. This is how the sustainable Three Sisters of the field gives way and gives rise to the regenerative Three Pillars of the forest garden, as depicted in the glyphs in figure 1.28. Maize, like cacao, are the jewels in the crowns of these polyculture traditions but make no mistake the forest garden is not reducible to cacao, nor is the field garden reducible to maize. Maize began and was bred from a wild form of grass<sup>112</sup> and evolved into a plant that depends upon humans for its survival while allowing human civilization to grow and evolve. Similarly, cacao is the fruit of generations of work with the seeds in a long courtship to develop and nurture the beautiful food that we know as the food of the gods. Below is the excerpt from the *Popol Vuh* in which the maize stalk they leave behind with their grandmother represents their health and well-being in the coming trials of Xibalba!

Surely, we must go, our grandmother. But first we will advise you. This is the sign of our word that we will leave behind. Each of us shall first plant an ear of unripe maize in the center of the house. If they dry up, this is a sign of our death. 'They have died,' you will say when they dry up. If then they sprout again, 'They are alive,' you will say, our grandmother and our mother. This is the sign of our word that is left with you," they said.<sup>113</sup>

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<sup>112</sup> Sean B. Carroll, "Tracking the Ancestry of Corn by 9,000 Years," *The New York Times*, May 24, 2010, <https://www.nytimes.com/2010/05/25/science/25creature.html>

<sup>113</sup> Christenson, *Popol Vuh*, 1.

Nothing comes from nothing, and so the deep connection between maize and cacao is a living lineage and wellspring of understanding and teachings that must be renewed if one hopes to understand the IK teachings of cacao.

One simple way to read this teaching in the form of a recipe would be to see how chocolate drinks were not made with cow's milk, but with maize milk. Furthermore, it is important to see that hominy maize, processed by the alkaline process called nixtamalization, would create a nutritionally enhanced traditional “dutching” effect on the cacao. This is the truest, most sustainable, and most nutritious Mayan “milk” chocolate there is, and predates European milk chocolate by millennia! This Mayan milk chocolate is rooted in 10,000 years of ecological gastronomy and food traditions that are buried beneath the European aesthetic of the gods and Industrial chocolate-making traditions.<sup>114</sup> Hence, by renewing our understanding of maize agriculture, and maize gastronomy, we find hidden jewels of wisdom that can instruct our rediscovery of the food medicines we call cacao and chocolate. This understanding is key to orienting oneself in the political geography of cacao and chocolate (see above map). It is important to see these relationships not in an oversimplified way, but as apertures for understanding that can be explored and renewed over a lifetime. However, it is beautiful to note the connection here between generation and regeneration, between polyculture and ecogastronomy, between maize drink and cacao/maize drink. In Chapter 2 of this dissertation, I will expand upon

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<sup>114</sup> The dutching process is not Dutch in origin. It is gleaned from looking at the alkalization of maize and of cacao and was turned into an industrial process by European chemists like many other Indigenous techniques from the periphery were transformed at the center in a typical process of “bricolage,” described by famous intercultural anthropologist Claude Levi-Strauss.

and operationalize this important agricultural paradigm shift and dynamic reevolution from maize field garden to cacao forest garden.



FIGURE 1.29. Drinking and eating chocolate out of a cacao pod in the chocolate museum in San Cristobal de Las Casas, with Mama Naty and Don Flor. Photo by Michael Sacco in 2017.

## 9. Re-evolution: The Spiral Dialectics of Spiritual Ecological Culture Shifts Past and Present

When the Cacao Twins came to the crossroads on their journey to Xibalba they already knew more than their father and uncle. The Cacao Twins sent an insect called



Mosquito ahead of them along the road to Xibalba to reconnoiter. They sent him to find out the names of the true lords of Xibalba: “You shall bite each one of them in turn. Bite the first one seated there and then keep on biting them until you have finished biting all of them. It will be truly yours then to suck the blood of people on the road,” the mosquito was told.<sup>115</sup> It is said that the first step to overcoming the unbearable is to name it, similarly finding out the names of the pestilential lords of Xibalba was the first step to overcoming the power of Xibalba.



FIGURE 1.30. Obvious medicine wheel, cardinal directions, and circle of rocks behind and around cacao Twins as depicted in Montejo and Garay translation and illustration of *Popol Vuh*.

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<sup>115</sup> Christenson, *Popol Vuh*, 149.

When the Cacao Twins return to Xibalba they do not go in blind to the crossroads like their father and uncle. Where their fathers were confused at the crossroads, this next generation is not. Instead, they send the mosquito ahead to scout out the situation. The mosquito bites the wooden figurehead leaders that tricked the first twins. Mosquito gets no blood and no complaint when bothering the wooden figureheads of Xibalba. Then the mosquito proceeds to probe and bite all the other 12 Lords of Xibalba in the room who in turn cry out their names and their rank. Maybe the mosquito is not a mosquito at all, but a teacher. This is what the *Popol Vuh* itself suggests in the text below translated.

Next [after the wooden puppets] he bit the third one seated there, who was One Death— “Ouch!” said each one when he was bitten. “What?” was their reply: “Ow!” said One Death.  
 “What, One Death? What is it?”  
 “I am being bitten!”  
 “It’s just... Ow! What was that? Now I am being bitten!” said the fourth one seated there.  
 “What, Seven Death? What is it?”  
 “I am being bitten!”  
 Next, the one seated fifth said, “Ow! Ow!”  
 “Flying Scab,” asked Seven Death, “what is it?”  
 “I am being bitten!” he said.  
 Then the sixth one seated there was bitten. “Ow!”  
 “What, Gathered Blood? What is it?” asked Flying Scab.  
 “I am being bitten!” he said.  
 Next, the seventh one seated there was bitten. “Ow!” he said. “What, Pus Demon? What is it?” asked Gathered Blood.  
 “I am being bitten!” he said.  
 Then the eighth one seated there was bitten. “Ow!” he said. “What, Jaundice Demon? What is it?” asked Pus Demon.  
 “I am being bitten!” he said.  
 Then the ninth one seated there was bitten. “Ow!” he said. “What, Bone Staff? What is it?” asked Jaundice Demon.  
 “I am being bitten!” he said.  
 Then the tenth one seated there was bitten. “Ow!”  
 “What, Skull Staff? What is it?” asked Bone Staff.  
 “I am being bitten!” he said.  
 Then the eleventh one seated there was bitten. “Ow!” he said next.  
 “What, Wing? What is it?” asked Skull Staff.

“I am being bitten!” he said.

Next, the twelfth one seated there was bitten. “Ow!” he said.

“What, Packstrap? What is it?” asked Wing.

“I am being bitten!”

Next was bitten by the thirteenth one seated there. “Ow!”

“What, Bloody Teeth? What is it?” asked Packstrap.

“I am being bitten!” he said.

Then the fourteenth seated one was bitten. “Ow!”

“What, Bloody Claws? What is it?” asked Bloody Teeth.

“I am being bitten!” he said.

Thus their names were named. Each of them revealed the name of the other. Each of the individuals in order of their rank had his name revealed by the one who sat next to him. Not one of their names was missed until all of the names were named when they were bitten by a hair that Hunahpu had plucked from the front of his knee. It wasn't really a mosquito that had bitten them. And so Hunahpu and Xbalanque heard the names of all of them.<sup>116</sup>

In this way, the Cacao Twins come to know the names of their would-be oppressors and murderers. They learn the names of the 12 Lords of Xibalba and their power structure and rank. Furthermore, the Cacao Twins, when offered a seat on a hot wooden stone bench by the lords, respectfully decline the offer, unlike their father and uncle who sat in the “hot seat” and were tricked. Once again, we see how the Cacao Twins' learnings from their father and uncle's fates prepared them to sidestep the traps their father and uncle unknowingly stumbled into.

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<sup>116</sup> Christenson, *Popol Vuh*, 151.

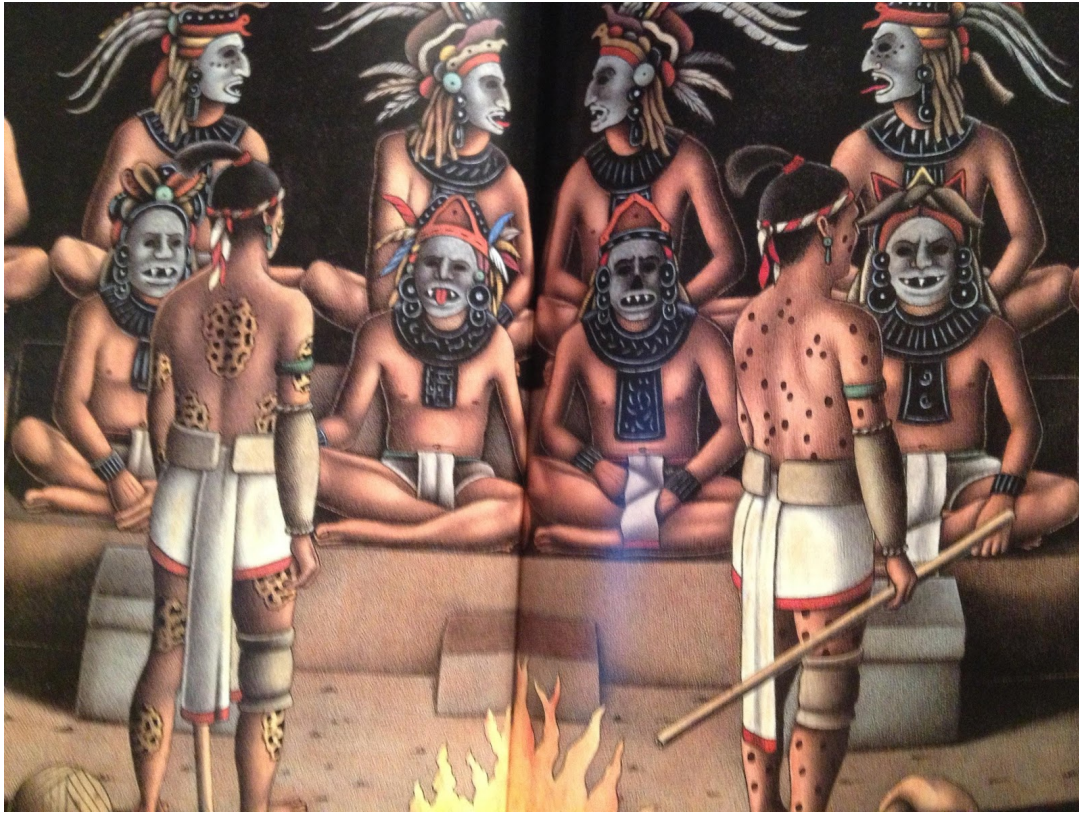


FIGURE 1.31. Confronting the Lords of Xibalba. Luis Garay's illustration depicts the moment in which the Cacao Twins confront the true 12 Lords of Xibalba and not the wooden puppet figureheads. This is contained in the *Popol Vuh* version retold by Victor Montejo.

Next, the Lords of Xibalba set the Cacao Twins the impossible task of burning torches all night long without burning them; a task that their father and uncle could not complete, but a task which they overcome through creatively using the tail feather of the macaw to appear as though it is burning:

But they didn't light the torch. They just placed the red tail feather of a macaw on it as a substitute for flame. Thus, the night watchmen saw it as if it were burning. As for the cigars, they just put fireflies on their tips. All night they would glow brilliantly because of them.

"We have defeated them," said the night watchmen.

But the torch was not used up, for it was only an illusion. Neither did the cigars have anything burning on them. It was merely an illusion as well. Thus, they returned them whole to the lords:

"What becomes of them? Where did they come from? Who begat them? Who

gave them birth? Truly our hearts are troubled, for it is not good what they are doing to us. Their appearance as well as their nature are unique,” they said one to another.<sup>117</sup>

To burn without burning is to not consume. Here perhaps is a reference to the way in which the legacy and culture of their uncle and father could not help but burn up all the precious resources of the forest. Whereas the Cacao Twins had to find a way to keep the torches and cigars lit, without burning them all up! Perhaps this challenge is connected to a growing civilization taking too much wood for their fires and burning too much forest to plant their field gardens. The original Twins forgot to offer more than they took back to the forest and the soil, and perhaps that is what the tobacco cigar (gratitude) and the torch that burns without burning symbolize. This ability to use and burn the fire, but without burning up the thing itself is a new relationship to natural “resources.” This new relationship reminds me of the unique ecological and economic properties of forest gardens that strengthen local communities with food, fuel, and fibre. Moreover, many non timber forest products and spices stimulate and perennially renew the translocal trading networks that are rooted in the forest gardens. In a sense, money grew on trees in Mesoamerica. So did bowls, plates, food, fuel, and spices! However, be careful not to put words of agroecology or capitalism in the mouths of the Cacao Twins for to do so would be to miss the opportunity to see through the aperture or window of the Indigenous teachings of cacao. Needless to say, the Mayan culture had its equivalent of commerce, trade, and currency as connected to agriculture and production, but the uniqueness of these integrated Indigenous traditions cannot be seen through a capitalist framework of

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<sup>117</sup> Christenson, *Popol Vuh*, 153.

agroecology. Instead, the homeomorphic equivalent of economy and trade and agriculture need to be approached in this treatise through the spiritual ecological understanding of the cacao forest garden from a more Indigenous cultural matrix..

The gastronomy of the field and forest garden cultures was an ecogastronomy that was not only sustainable but regenerative when properly practiced. In the modern gastronomy of Oaxaca, these Indigenous roots are alive and well for the most part. There is no question that there is a deep connection between the milpas of field and forest and Oaxaca's rich Indigenous culinary traditions.<sup>118</sup> Oaxaca's amazing ecogastronomy would not be complete without the forest gardens, just as the communal lands of the Indigenous governance traditions would not be perennially renewed without the forest gardens reclaiming, regenerating, and renewal of the lands used for the maize gardens. The act of participating in the regeneration of the forest gardens of Oaxaca, can be a radical one, in terms of reanimating the local Indigenous communities, commons, and marketplaces in a holistic and traditional manner. Similarly, the commodification of the forest gardens could be the undoing of Indigenous culture through over-focusing the community towards industrial farming that is not rooted in ecological proportion. In the same way that nurturing the maize through the "Sin Maíz no Hay País" campaign has meant reanimating the milpa and the traditional food cultures not monoculture organic maize cultivation.<sup>119</sup>

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<sup>118</sup> Esteva, *The Oaxaca Commune*.

<sup>119</sup> Lauren Baker, *Corn Meets Maize: Food Movements and Markets in Mexico* (Lanham: Rowman & Littlefield, 2012).

When Lori Stahlbrand, Wayne Roberts, and Anika Stahlbrand-Roberts visited the forest gardens of Oaxaca in 2008, Wayne had already spoken about the ways in which forest gardens provide food, fuel, and fiber in his book the *No-Nonsense Guide to World Food*. In turn Lori, founder of Local Food Plus, coined the term Subsistence Plus agriculture to denote the way in which these traditional communities and forest gardens were built to flourish and not just for “subsistence.”

At these steps in the *Popol Vuh* the Cacao Twins continue to flirt with the knowledge that allows them to shift from sustainable to regenerative ecology and this is symbolized by the cigars and the torches that burn but do not burn. Their life, death and rebirth set in motion a revolution and re-ordering of society and agriculture. In this sense the *Popol Vuh* must be read in an epochal sense. The Cacao Twins in overcoming the impossible tasks of burning without burning that their father and uncle could not, symbolizes this civilizational paradigm shift.<sup>120</sup>

In the Mayan tradition, time does not just revolve and circle endlessly like a snake eating its own tail or like a phoenix from the ashes to the flames and back again. Yet neither is it a simple linear march of progress. Instead, there are daily, seasonal, yearly, epochal spiraling cycles. As the epochs grow, the roots of the tree of culture go deeper, as branches move higher. In a sense, each generation must strive to become the ripe fruits of the forest garden trees of their time and feed something greater than themselves. Soil and social compost in this sense is an expression of the legacy of the elders.

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<sup>120</sup> Thomas Kuhn, *The Structure of Scientific Revolutions* (Chicago: University of Chicago Press, 1996).

The metaphor of the Tree of Life is a reminder of the symbol of the Tree of Life in the Americas. I wonder if the singular words the Tree of Life are part of the challenge to this understanding. We should be envisioning the plurality of the forest garden polyculture of trees and other beings. The forest garden is symbolized by many different trees and layers of the canopy and the different kinds of life forms of the forest garden in a kind of world in which many worlds are embraced, celebrated, and find their purpose that is not reducible to just a human-centric purpose. As I will discuss in the second Chapter of this dissertation on the Spiritual Ecology of the Forest Garden, we need to add a few more word concepts and layers to the agro-ecological understanding of the forest garden to grasp the Indigenous spiritual ecology of the cacao forest garden. Beyond providing food, fuel, and fibre, the Indigenous spiritual ecological forest garden is also home to flowers, fauna, and family. The Indigenous forest garden commons is a powerful symbol of Mexico profundo that reveals insights into Indigenous governance, food sovereignty, ecology, community, and trade.

While using the tools of logos like “dialectics”, it is important not to reduce our analysis to purely logical tools, as evidenced by one Mayan elder’s preference of the word cosmogony instead of cosmovisión to describe the Mayan “worldview.” In 2012, while Tata Marco Chavarria was visiting the Mohawk community in Tyendinaga as well as Trent University, he made the distinguishing point about using the word cosmogony instead of cosmovisión.<sup>121</sup> The concept of worldview and cosmovisión are fundamentally

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<sup>121</sup> In 2012, with the help of Trent University Indigenous Studies department and Mayan Elder Nana Maria Ramirez, we were able to bring a consoled Chuck Kahau Mayan Elder Tata Marco Chavarria to Canada and to Trent and to Tyendinaga to enact ceremony and share blessings and teachings. One of his teachings was to help me understand the Mayan concept and understanding of the word “cosmogony,” which is a rootedness in the Milky Way that is at the heart of their spiritual understanding of Time and Place.



logocentric and rooted in the prioritization of the clear sight of reason beyond other ways of knowing that are not easily reducible to textual language. Cosmovisión is logocentric in its prioritization of the written word and vision/seeing as the key sense to describe knowing.

Gratitude - Death - Fertility - Sacred Smoke - Regeneration - Renewal - Biophilia - Re-evolution ; these are the first 8 steps in this dialectical interconnected exploration of the 20 teachings of cacao. The number 20 is not exhaustive and is most symbolic in that there are 20 days in Mayan calendar. It is also a way to circumscribe, in a limited way, the 20 key insights of the medicine of cacao.

It is worth noting where the West has long since been obsessed with an anthropocentric view of the world, the Mayan cosmogony is decentred in the vastness of the Milky Way and the dignity and integrity of all beings (not just human beings). The Mayans see a time that arises before humans and carries on beyond the interests of humans. The profoundness of this Indigenous view of being in time and history can be seen by juxtaposing a moment in history where Spanish and Mesoamerican worlds were colliding in the 16th Century. At that moment Europeans were arguing about whether the Sun or the Earth was the center of the universe. Meanwhile, Mayan timekeeper traditions understood that our minor branch of the Milky Way, circles around the Heart of the Heavens (the Center of the Milky Way) every 52,000 years. The modern world can still learn from this way of seeing the cosmos and remember to now move beyond a purely logocentric and humancentric understanding of living and dying in the world. Modernity needs to learn to respect and renew Indigenous ways of knowing and being in the world

to cultivate a more connected, relational, and humble place in Nature. This would truly be a re-evolutionary shift for the emerging intercultural paradigm of the 21st century and help in the healing of the forest garden trees of culture.

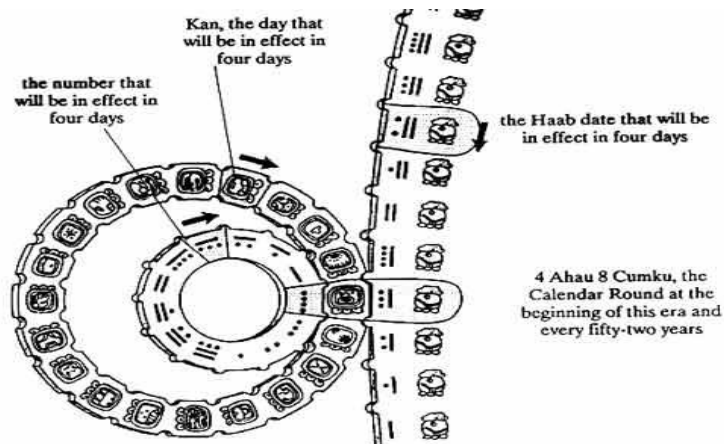


FIGURE 1.32. Mayan Calendar. Above is a glyph depicting the three scales of the Mayan time count, the lunar ceremonial 270-day wheel on the inside, the solar calendar of 360 plus 5 days out of time and the long count wheel that proceeds on the 100,000 of thousands of years.<sup>122</sup>

<sup>122</sup> "Calendar," Ancient Maya: The Civilization that Flourished & Excelled in Developments, accessed November 10, 2021, <https://hhsancientmaya.weebly.com/calendar.html>

## 10. Transformation: Suffering, Creativity, and the Cacao Twins Overcoming of The Impossible Tasks of Xibalba



FIGURE 1.33. Kakai pumpkin seeds and flesh. Below is an image of a locally grown Kakai pumpkin with a hull-less edible seed, that we chose to grow in honour of its symbolic connection with cacao. We have developed many delicious nourishing food recipes with this pumpkin seed, and re-gifted these seeds back to many communities in Mexico that were unaware such a varietal existed. Perhaps the Kakai pumpkin could become a powerful symbol for intercultural solidarity, encounter, dialogue, and reciprocity. However, the role of the pumpkin in the Three Sisters agricultural tradition is very deep and important. Photo taken by Michael Sacco in 2018 in Ontario, Canada.

The road through Xibalba is not a straight inexorable logical road to triumph for the Cacao Twins. Suffering, sacrifices and the mystery of not knowing the next step are part of the journey. One of the last “impossible” tasks set out by the Xibalbans is for the Cacao Twins to survive a night in the house of the bats. To get through the test, the Cacao Twins hide inside a blowgun while bats with razor sharp claws stand ready on the hunt for any sign of prey. At the last moment, as the dawn light is breaking, Hunahpu, believing that they are victorious, pops his head out from the top of the blowgun. At that moment, a bat slices off his head with its razor sharp claws! This is truly bad news because the Cacao Twins had their final challenge in the Ball Game against the Lords of Xibalba later that same day. However, with Hunahpu headless, it seems the Cacao Twins are defeated as were their father and uncle. So Xbalanque, the second Hero Twin, enrolls the animals, in particular the *coati* (native raccoon like animal) to bring a substitute head. The coati comes rolled in a kind of squash/gourd called a chilacayote.

Now after many had come, the coati arrived last of all, bringing a chilacayote squash. She came rolling it along with her nose. This was to be transformed into the head of Hunahpu. Immediately its eyes were carved upon it. Numerous sages came down from the sky. For Heart of Sky, he, who is Huracan, appeared here. He arrived here at the Bat House.<sup>123</sup>

It is interesting to note that to this day, chilacayote is consumed as a sweet drink served in the mountains of Oaxaca and Chiapas and its hulled seeds are used to make delicious seed bars with honey. However, it is also interesting to note the chilacayote’s shape along with its fruits and seeds resemble those of the cacao of the forest trees. A cacao pod is not only like the maize cob. The fruit of the cacao is like the fruit covering the pumpkin seeds

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<sup>123</sup> Christenson, *Popol Vuh*, 162.

that are delicious and nutritious to eat. The calabash is like various pumpkins/gourds of the fields long used for carrying water or serving as bowls and drinking vessels.

Furthermore, the shade of Xbalanque (either patastle or calabash) helps to incubate and protect the red cacao similar to the way the shade of the squash and pumpkin plants shades the soil of the field garden and helps support the growing of beans and corn.



FIGURE 1.34. Chilacayote fruit. This is the inside of the chilacayote fruit still used in Oaxaca for drinking and eating. It has a similar pattern to the kakai hullless pumpkin seeds from the above photo, and the fruit colouring surrounding the seeds is reminiscent of the cacao fruit inside the pod that covers the seeds. Photo taken in February 2020, in Oaxaca Mexico by Michael Sacco.

In what is today the museum on site in Teotihuacan, outside Mexico City, on display are many examples of varieties of cacao-looking gourds that no longer seem to be in cultivation or even existence today. When observing the rose of cacao, the cacao, and the way that some tubers grow, there would seem to be a resemblance to the below pod. The below figure 1.35 from Teotihuacan's museum is somewhere between a cacao pod, a squash, and a rose of a cacao pod. In terms of plant breeding and development, it is clear that there were some profound leaps and gaps that lead to the treasure trove and abundance of the foods of ancient Mesoamerica. This amazing talent for discovering and unlocking the power of nature and its abundant foods for humans was manifested not only in the maize, but also in the pumpkins, gourds, and eventually in the pods and fruits of the forest garden. The pottery pieces and images found in Teotihuacan and other sites clearly indicate that there were other kinds of cacao that have since been lost.



FIGURE 1.35. Ancient cacao variety. Photo taken of excavated pottery shards/pieces from the Teotihuacan site in the Teotihuacan Museum building exhibit 2016.



FIGURE 1.36. Ancient cacao species . Above photo taken of excavated pottery shards/pieces from the Teotihuacan site in Teotihuacan Museum building exhibit 2016. The cacao pods normally have no pod skin where they attach to a tree. The uppermost pottery piece is resemblant of no cacao pods I have ever encountered and looks like a since lost varietal somewhere between cacao pods and rose of cacao.



FIGURE 1.37. Pollinated flower of the Rosita de Cacao Tree or *quinabrae funebris* tree. It clearly resembles in some sense this ancient looking cacao pod from the above with a green seed/pod connection. Photo taken by Michael Sacco later in 2016 in the Lacandón Jungle.



FIGURE 1.38. Criollo Cacao. Photo taken by Michael Sacco in 2016 of heirloom seed-selected cacao varieties that were still native to the Chinantec community of San Felipe de Leon, Oaxaca, Mexico. These rare cacao bean genetics with the white interior are the result of selective breeding from seeds to find less bitter and more rich tasting cacao seeds. These pods were found and scavenged in the hills surrounding the



community who called the pods 'el cacao de los Abuelos' translated to the cacao of the grandparents.

The Mesoamerican civilization gave rise to the gourd, the pumpkin, the cacao, the calabash, the patastle, the mamey, and the guanabana fruits through their incredible botanical understanding and sophisticated plant breeding and selection techniques. When describing the innards of a cacao, it is not totally unlike the innards of a pumpkin or squash. The colour, taste, and texture of the flesh and seeds are similar. The field gourd is to the calabash, what the kakai seed is to the cacao seed, and yet there is no linear evolution between these plant families. This is not a literal interpretation. It is a teaching that recognizes the ancestry and the transformative work of this great agricultural civilization. It is a reminder to take a moment to recognize the “transformative” seed selection and plant breeding cultures that flourished in the Americas as nowhere else. As the above photos and pottery pieces hint, many evolutionary steps in the dance and play that lead to our current bounty of foods from the Americas have been lost. Nonetheless, imagining some of this botanical play, and this biophilic relationships between humans and plants is important for understanding the IK of cacao.

Oftentimes this leap beyond logic means making sacrifices and leaving things behind, while simultaneously taking up key elements into the new remodelling. There is a deep teaching of the seemingly nonsensical substitute of the chilacayote for Hunahpu's head. This suppleness to learn from the *coati*, the chilacayote, Huracan the god of lightning, and the rabbit are key elements and teachers in this transformational journey as shown in the above excerpt from the *Popol Vuh*. The dialectical re-evolution may often mean taking steps that are not “logical” or incremental, but they don’t come from

nowhere. Sometimes breaking with the past means taking quantum leaps of transformative knowledge and being open to the mystery of creation.

So the ball was again dropped into play. The head of Hunahpu was first placed atop the ballcourt.

“We have already triumphed. You are finished. You gave in, so give it up,” they were told.

But Hunahpu just called out:

“Strike the head as if it were a rubber ball,” they were told. “No harm will come to us now, for we are holding our own.”

Thus the lords of Xibalba threw down the ball where it was met by Xbalanque.

The ball landed before his yoke and bounced away. It sailed clear over the ballcourt. It just bounced once, then twice, landing in the tomatoes. Then the rabbit came out, hopping along. All the Xibalbans thus went after him. The Xibalbans all went after the rabbit, shouting and rushing about.<sup>124</sup>

The Cacao Twins use this trick of the chilacayote head, and the fake ball as Rabbit, as feints to regain Hunahpu’s head and defeat the Lords of Xibalba in the ball game.

Thus, the twins were able to retrieve the head of Hunahpu, replacing it where the chilacayote squash had been. They then placed the chilacayote squash on the ballcourt, while the true head of Hunahpu was his once more. Therefore, they both rejoiced again. While the Xibalbans were out searching for their rubber ball, the twins retrieved it from the tomato patch. And when they had done so, they called out:

“Come on! We found our rubber ball!” they said. Thus they were carrying the round ball when the Xibalbans returned.

“What was it that we saw?” they asked.

And so they began to play ball, both teams making equal plays until at last Xbalanque struck the chilacayote squash, strewing it all over the ballcourt. Thus its seeds were scattered before them.

“What is this that has been brought here? Where is he that brought it?” asked the Xibalbans.

Thus the lords of Xibalba were defeated by Hunahpu and Xbalanque. They had passed through great affliction, but despite everything that had been done to them, they did not die.<sup>125</sup>

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<sup>124</sup> Christenson, *Popol Vuh*, 164.

<sup>125</sup> Christenson, *Popol Vuh*, 165.

However, even in defeating the Lords of Xibalba at the Ball Game court, the Cacao Twins know that their hosts do not intend to let them go free. There are just some things you cannot escape. and some Lords of death you cannot defeat, like one's death...or can they? In the coming teachings and steps of understanding life, service, self-sacrifice, grinding, and death, we see a rebirth in an epochal sense. By planting trees and forest gardens that will regenerate soil and culture over multiple generations the Cacao Twins make an important step towards a spiritual ecological and regenerative forest garden commons- in this sense they are able to move beyond their own death.

### 11. Self-Sacrifice/Service and Death: Transformation by Fermentation and Planting Forest Gardens as Service to the Seven Generations







FIGURES 1.39, 1.40, 1.41. Fresh Cacao Pods. Photos by Michael Sacco in 2017 in the Lacandón Jungle of *theobromae* cacao fruit and seeds in 1.40 and 1.41 and of *theobromae bicoloris* in 1.42.

In defeat, the Lords of Xibalba are embittered and so they invite the Cacao Twins for a special feast in their honour and ask them to dance around the fire, with the idea that they will sacrifice them into the fire pit. Hunahpu and Xbalanque know this, and so they dance/jump around and over the fire four times, and then in a final step they jump into the fire, that is to say, the sweet drink positioned at the center of the fire pit and there they perish. Grofe and others like myself interpret this sweet drink and fire as representing the cacao pulp that is being fermented and transformed along with the cacao seeds for three to eight day. The fermentation process needs to be mixed to achieve equal fermentation on all the seeds for at least four days; and perhaps this is the one of the meanings of the dance and jumping around and over the fire four times before the Cacao Twins (seeds)

are killed. The seeds of cacao are alive for the first two days drinking in the sweet water of their own fruit thinking it is water that will help the seed to germinate. During the fermentation process the heat and the acidic fermentation process itself help to kill the seeds that are inflated with the cacao fruit juice as the seed drinks in juice hoping to germinate. When the seeds die because of this chemical process and acidity, the sugars locked away in the seed for sprouting are freed up for tasting and the cacao butter runs more freely from the cellulose of the seed. The mixing of the fermentation during the next few days helps to balance the process and to release some of the acetic, lactic acids and other volatiles of the fermentation process. Below is a simple outline of some of the fermentation chemistry in cacao beans.

1. Acid penetrates the bean. The acid kills the bean, lowers its pH, and produces a sour, acidic taste.
2. Bitter and astringent flavonoids are converted into milder-tasting substances. (These enzymatic processes also turn the bean from a white or purple colour to chocolate brown).
3. Aroma precursors are produced. These aroma precursors are later transformed into aromas during roasting.<sup>126</sup>

The technique and the timing of the fermentation process, such as controlling the heat and the acidity are key to the development of the cacao seeds for chocolate making and for human digestion. This is part of the reason why the Cacao Twins dance 4 times around the fire. Fermentation is a technique that includes many factors and has many different permutations: flavour, chemistry, seed biology, and nutritional teachings are embedded herein. Fermentation is an essential step for cacao, not unlike the way that the

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<sup>126</sup> Samantha Madell, "The Science of Cacao Fermentation," The Tava Chocolate Blog, December 15, 2020, <http://tava.com.au/blog/the-science-of-cacao-fermentation-1-what-happens-during-cacao-fermentation/>

nixtamalization process is an insight into the complex understanding of food chemistry and the human body that First Peoples of the Americas deeply understood. We do know that there was more than one way to do nixtamal (calcined limestone, or calcined shell, or hardwood ash), and so we also must imagine that there are multiple ways of fermenting cacao. In today's world of craft chocolate, fermentation is at the heart of the processes being re-discovered. The *Popol Vuh* is a great place to start if one seeks to rediscover the best of the cultural traditions of the Cacao Twins!



FIGURE 1.42. Cacao Twins co-fermentation experimentation. Photo taken by Michael Sacco in the Chinantla Region of Oaxaca, 2018.

Personally, engaging in fermenting both grapes to make wine and cacao to make chocolate, has helped me to understand the complexity of the fermentation process and to benefit from Old World, and New World cultural traditions associated with it. Combining

these experiences with scientific understanding of how yeasts in the fermentation process of coffee and cacao offer terrific opportunity for developing flavour profile<sup>127</sup> has opened technical lines of research and investigation Furthermore, learning a little bit about the science of biodynamics and the way that vortexing leads to more collisions, leads me to consider that there are myriad techniques and rituals to explore in this step and there is no one right way. However, I do believe that the ancient Mesoamericans were masters of this process.



FIGURE 1.43. Fermentation cut test day 2. Photo by Michael Sacco San Felipe de Leon, Oaxaca, 2018.

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<sup>127</sup> Melissa Clark, “Everything You Don’t Know About Chocolate,” *The New York Times*, Feb 13, 2020, <https://www.nytimes.com/2020/02/11/dining/chocolate-bar.html>



It is time to delve into rediscovering and celebrating these ancient techniques whose vestiges remain at the grassroots in Mexico profundo. Working with hundreds of Indigenous farmers in the Lacandón jungle of Chiapas, has led me to wonder about the vast diversity of cacao flavours that are the results of myriad fermentation variables and see it not as a liability but as an instructive opportunity. On the fourth pass, when the Cacao Twins spread out their arms together and jump into the pit oven, this symbolizes the death of the cacao seeds. It also represents, however, their willingness to sacrifice what is most dear to them for something greater.

The drink mentioned in the Popol Vuh may well have been fermented cacao wine made from the boiled pulp of the fresh cacao pod, known to have been made by the Maya and elsewhere in Mesoamerica.<sup>128</sup>

The heat and acidity of the fermentation process help to loosen the pulp from the outside of the cacao seeds thus allowing them to be more easily cleaned, dried, and stored.

Furthermore, the seeds absorb the sweet fruit and become pickled from the alcohol of its sweetness. Not only does this add to the delicious taste of the cacao seed and develop its flavour and nutritional chemistry, but it also results in some beneficial chemical transformations. By killing the seeds, the sugars that are locked away in the seed for germination are made available for tasting. Furthermore, the acidic fermentation process acts as a type of ceviche style cooking to break up the cellulose of the cacao and to help the cacao butter locked away in the cacao seed to run freer during stone grinding.

Eventually when the seeds are roasted and ground, we call that delicious odiferous mass, cacao liquor—to honour that chocolate is a fermented food.

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<sup>128</sup> Grofe, “Recipe for Rebirth,” 11.



FIGURE 1.44. Cacao fruit juice fermenting with the help of some organic yeast in our Soconusco, Chiapas, fermentation experiments conducted by ChocoSol Toronto with the help of Rayen Cacao Sostenible.



FIGURE 1.45. The fermentation box is covered with banana leaves after 4 days of fermentation taken in November 2020, photos taken by Chris Christou on behalf of ChocoSol fermentation research project.

Fermentation is a key step in understanding the nutrition, the flavour development, and the processing of the cacao and to a lesser understood extent the patastle beans.

Fermenting foods has been a human tradition for millennia. If the Cacao Twins represent not just red cacao and white cacao, but also calabash, guanabana and mamey, perhaps there are other elements of co-fermentation that are buried and twinned in the *Popol Vuh*'s teachings. To this day the patastle, or white cacao, is fermented and enjoyed more for its fruit than its seed in many Central American villages. Grofe's reading of the *Popol Vuh* combined with 16 years of experience in Indigenous cacao producing communities

have been key to unlocking these and many more interesting questions associated with the IK techniques of cacao and chocolate processing. I believe we are just at the beginning of the re-discovery of these important cultural traditions. Below is a co-fermentation of guanabana fruit with theobromae cacao in the Lacandón Jungle of Chiapas, Mexico.



FIGURE 1.46. Guanabana and cacao co-fermentation. Picture taken by Michael Sacco in February 2016.

Yet the *Popol Vuh* is not just a post-harvest technical manual. In the spirit of the Oral twinning of knowledge and the layers of meaning, it is also important to note that the Cacao Twins are willing to sacrifice themselves into the pit to be reborn. They have a

vision of this when they consult the seers Ascended and Descended prior to entering Xibalba. As you might have noticed, regenerative spiritual ecology is part of the lenses of this reading of the *Popol Vuh*, and for that reason, I clearly see that the Cacao Twins are willing to plant forest garden trees in whose shade they will never sit. Their sacrifice is born of their willingness to serve future generations by reforesting and strengthening the polycultures of Mesoamerica. That is to say that cultures and farmers that plant trees and cultivate forest commons are not obsessed with short-term needs or individual profit only. They are able to look up and see the bigger intergenerational and interspecies picture. This is connected to the teaching that only by feeding something greater than one's own life, by putting one's life in service of things greater than the ego, can one truly have the chance to live on.

To engage in cultivating a forest polyculture is to see cultivation on a different time scale and to move beyond the consumption of nature, to the conscious regeneration and renewal of the forests that were cleared for the maize, beans, squash, sunflower, amaranth, chia, and other staple crops. Developing and adopting this vision to the seven generations and service to unseen regenerations of humans, plants, animals, earth, and water, are cultural virtues of many Indigenous communities throughout the Americas. This is akin to the celebrated Mohawk concept of service to the Seventh Generation and not rushing to get all the results immediately. Seeing time and civilization on a vaster scale and non anthropocentric way, helps to remind humans to adopt humility and cultivate ecological resilience. Perhaps it is also a reminder of the importance of solid meaningful little steps and not rushing in such urgency to find the big answers that

remain elusive when we rush for quick solutions. The seed must die so that the tree can grow.

## 12. Heated Stones: Metate as the Molar of Cacao Culture



FIGURE 1.47. Metate chocolate grind. Photo taken by Michael Sacco in 2014 in Teotitlan del Valle chocolate-making ritual with village friends and families of Luis Lazo and Angela Mendoza Lazo.

What follows from this telling of the self-sacrifice and the specific ritualization of the Cacao Twins' death, can be interpreted as the encoded initiation to chocolate making from forest garden fruit to frothing beverage.

The Lords of Death invite the Cacao Twins to jump over the drink at their fire, with the intention of pushing them into the fire. Instead, the Cacao Twins decide to willingly jump directly into the flames. Here, like cacao bean children of their cacao pod father, the twins are burned, and their bones are ground into powder on a *metate*:

Just like hard corn is refined into flour” (Tedlock 1996:130, 131). This reference to corn would at first seem to suggest that the twins represent the preparation of maize. However, a closer analysis of this passage reveals that it parallels the complex, multi-stage process of refining cacao as described in Young (1996:74–79):

- (1) the burial of the seeds and pulp (entering the underworld)
- (2) fermentation (fermented sweet drink)
- (3) roasting (jumping into the fire)
- (4) grinding (bones ground on metate)
- (5) mixing with water (poured into a river)<sup>129</sup>

The *metate* is the traditional grinding stone. The metate grinding stone is the figurative molar of Mesoamerican culture in that it grinds all the food starting with maize and finishing with the cacao. The word *metate* literally translates as “molar” in Nahuatl language. Like maize, cacao is also ground on the stone *metate* but with one notable difference: for grinding cacao the stone *metate* is best heated first or warmed with embers from beneath so that the cacao butters will run free and make the process more fluid.



FIGURE 1.48. Cacao grind ceremony/ritual production in Teotitlan del Valle. Photo by Michael Sacco in 2014.

<sup>129</sup> Grofe, “Recipe for Rebirth,” 11-12.



FIGURE 1.49. Tejate chocolate making workshop photo taken by Michael Sacco 2018 in Oaxaca, Mexico.

This is not a high temperature process. Relative to current day chocolate-making techniques, this is an incredible low-heat, low-shear, minimal processing chocolate-making ritual! Because of these characteristics of the metate the cacao retains its maximum nutrients and the volatiles in the cacao seed are minimally lost to the air. There would be no chocolate if not for the metate! Furthermore, the addition of the heated stones for grinding referenced in the *Popol Vuh* clearly show that the Indigenous peoples had a respect and a grasp of the unique and virtuous properties of cacao butter, which to this day is the only vegetable fat known to humans that catastrophically



disintegrates at body temperature and helps to conduct unique properties to our skin, mouth, and tongue.<sup>130</sup>

Heated stones will be the means by which our murder will be accomplished. Thus when all Xibalba has gathered together to determine how to ensure our death, this shall be the idea that you will propose. If you are asked about our death when we are burned, this is what you shall tell them, you, Descended and you, Ascended, if they should speak to you about it.<sup>131</sup>

To this day, the most nutritious way to grind cacao is through the stone molar of the *metate*. The stone grinding process of Mesoamerica is low-heat, low-shear, low-volume, and low time grind, which keeps the oxidation of the cacao's volatiles and delicate food medicine components to a minimum. Like preprocessing of the cacao and chocolate ingredients, stone grinding cacao is part of the initiation to the traditional cultures of cacao and chocolate. However, perhaps the heated stones are also a reference to the pit oven technique that uses heated stones for processing and cooking crops like agave were also used to create a low temperature long time period of roasting a delicious cacao! The best tasting roasted cacao is cooked at lower temperatures for longer periods of time. This theory is still in its preliminary stages of development as it resulted from witnessing how the agave hearts were cooked in an underground oven of prehispanic design. Seeing this made this researcher wonder about how a large volume of cacao could have effectively been roasted instead of doing it all by hand on a clay cook top with constant movement and lots of smoke. Below is the final product of cacao showing the mirror sheen of the

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<sup>130</sup> “Physics of Chocolate and Food for Thought at Alumni House ‘Chocolatada,’” *Trent University News and Events*, March 30, 2011, <https://www.trentu.ca/news/story/10577>

<sup>131</sup> Christenson, *Popol Vuh*, 166.

cacao butter released on the hot metate stone grinder. The embers beneath but also the friction help achieve this “espejo” effect.

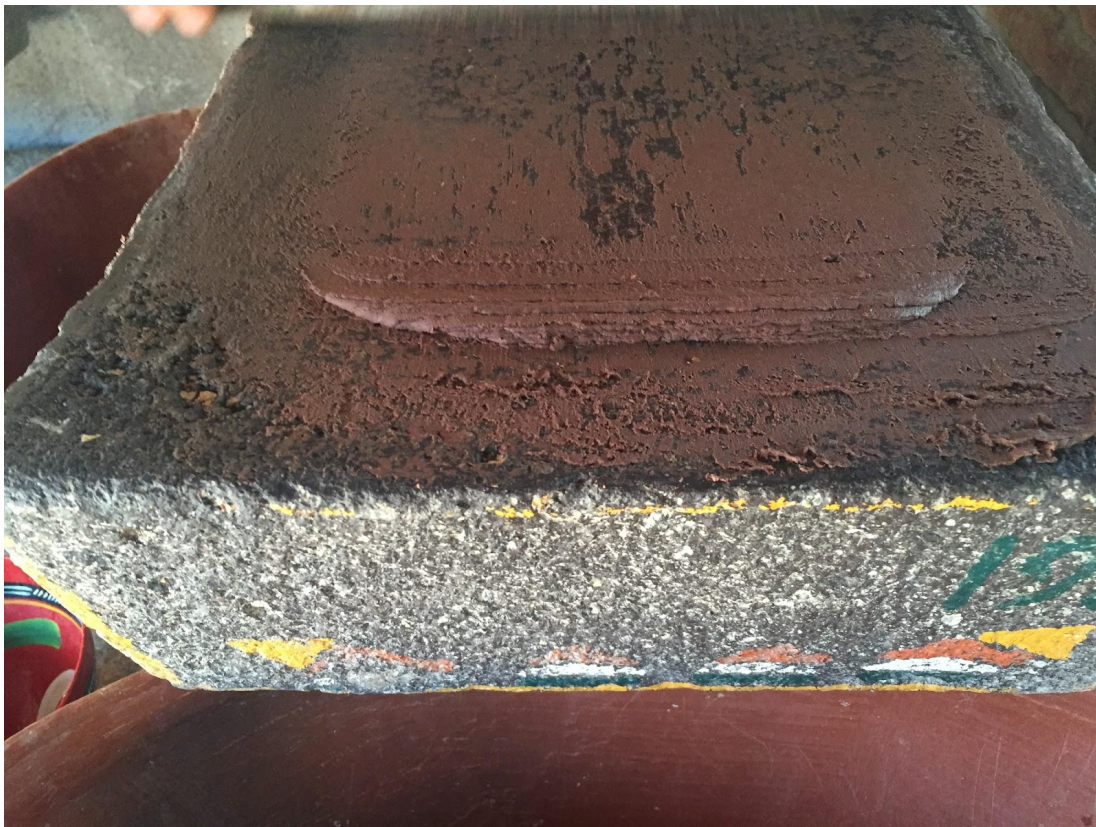


FIGURE 1.50. “Espejo” chocolate grind. Photo by Michael Sacco in Oaxaca Mexico 2018.

### 13. Fire and Hot Stones: The Cultural Use of Fire

We must dig deeper into the symbolism of the hot stones. There are certainly deeper and less obvious teachings buried here. The cultural use of fire and traditional cooking pits that are buried to achieve oxygen deprived cooking are one of Mesoamerica’s most interesting techniques and technologies. Mayan peoples were the masters of working with natural processes throughout the Americas. We know that First Peoples used fire in culturally appropriate ways to clear grasslands and forests (swidden

agriculture<sup>132</sup>), and that there were complex ecologies that they were tapping into<sup>133</sup>.

However, in this teaching associated with the death and rebirth of Mayan culture through forest gardens, there is an instructive lesson around the importance of the cultural use of fire and twin hot “stones” in building up soil. Perhaps, one Cacao Twin represents the biochar, and the other the calcined lime (bone, shell, or stone). Both were important not only in the building of temples and the cooking of maize, but also in the remaking of soils. This cultural use of the white and black hot stones is a deep part of the spiritual ecology of the Cacao Twins and connects to the regenerative ecology of the forest gardens. Furthermore, ash, charcoal, and calcined lime play important roles in the nixtamalization process of maize that makes maize 70% more digestible. For example, tejate, which is one of the oldest known drinking chocolates known to the culture of cacao, is made with ash and a touch of charcoal (see figure 1.51).



FIGURE 1.51. Tejate maize process. Picture taken by Michael Sacco 2018 depicting the nixtamalization process of yellow corn with wood ash for a tejate chocolate drink.

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<sup>132</sup> Matthew Dennis, *Cultivating a Landscape of Peace: Iroquois-European Encounters in Seventeenth-Century America* (Ithaca: Cornell University Press, 1993).

<sup>133</sup> Mann, 1491, 306–10.

We know that Mesoamerican peoples understood how to use limestone, shells and bones for alkaline processing of the maize in order to make it more digestible.<sup>134</sup> In further steps of understanding, First Peoples came to understand the role that ash, charcoal, and calcined lime could play in re-processing their waste and rebuilding their soil and providing the soil of the gods for the food of the gods to grow upon.<sup>135</sup> Combining bone, shell, and limestone in fire is a transformative step and a precursor to the regenerative soil-making of the cacao forest gardens. Just as the use of ash and charcoal with organisms from the soil help to convert waste into fertile, rich self-regenerating terra preta soil.<sup>136</sup>

Our experiments with using cacao as a biochar indicate that it lends itself very well to the process and could be an incredibly nutritious soil amendment in a charcoal format for the same reasons it is so nutritious for humans, with abundant micronutrients of iron, magnesium, zinc, and flavonoids. One research question emerging from this concerns the way in which shells, bones, limestone, and cacao seeds undergoing this oxygen deprived high heat process can be used as soil amendments of the highest quality for soil regeneration and the rebirth of flourishing forests. Operationalizing this research question has been the subject of years of exploration for this researcher personally.

Bone water” is used as a reference to the heron and the maize/cacao deity, and it is possible that this dark, intoxicating drink was a mixture of cacao as “bone water,” the result of the self-sacrifice of the Hero Twins.<sup>137</sup>

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<sup>134</sup> Sophie Coe and Michael Coe, *The True History of Chocolate* (London: Thames & Hudson, 1996).

<sup>135</sup> Maya Mountain Research Farm, “Making Biochar at Maya Mountain Research Farm,” July 4, 2016, *Vimeo*, 5:59. <https://vimeo.com/173389170>

<sup>136</sup> Mann, *1491*, 306–310. Unlocking these questions and techniques will be another decade or two of research and technical process development.

<sup>137</sup> Grofe, “Recipe for Rebirth,” 47.

The ash and the charcoal also would have had their separate uses in layering the compost piles and neutralizing the breeding places for flies and insects while helping in the breakdown of the composting materials. Adding ash, charcoal, and calcined lime in the right proportions to compost piles is an ecological recipe for transforming waste into rich soil. Spiritual ecological understandings led First Peoples to discover and champion the arts of *terra preta*, soil mounding, and swidden agriculture. Today it is important to re-discover these soil making processes from the scientists and corporations that seek to own this knowledge in a proprietary manner, and to learn from the Indigenous soil-making cultures of the Americas in our urban cities, and in regenerating the health and ecology of modern-day gastronomy-spiritual ecogastronomy! The rituals

14. Ka-Ka-Wa/ Fish-Fish-Froth: Aquaponics as Revolutionary Spiritual Ecological Steps in a Transformational Journey from Death to Rebirth in the Spiritual Ecology of the Cacao Twins as Soil Makers



FIGURE 1.52. Mayan Incensario with fish glyphs. Photo by Michael Sacco in 2018.



Figure 5: Cacao glyph from Río Azul cacao pot. After Coe and Coe (1996).

<sup>4</sup> Individual glyphs are identified by their assigned T-numbers from Thompson (1962).

FIGURE 1.53. Cacao Glyph. Image taken from *True History of Chocolate* by Michael and Sophie Coe.

First peoples in the Americas understood that fish cleaned the water on multiple levels and in multiple ways. Today we know that fish aerate the water, eat the particles floating in it, and create complex interactions throughout the entire natural system of plants, animals, water, riverbed, humans, and shorelines. Modern aquaponic agricultural systems are a simplified version of these ancient techniques and are experiencing a renaissance in today's urban agriculture movements.<sup>138</sup> However, their Mesoamerican antecedents were less technological and more impactful on a civilizational scale.

Following their metaphorical transformation as processed cacao, the resurrection of the Hero Twins as two fish is particularly interesting in that there is a known association between cacao and fish in the Maya script. The word kakaw frequently occurs as a common element within the Primary Standard Sequence, indicating the contents of the labeled container on which it is written. In Classic Maya hieroglyphs, kakaw is spelled phonetically using the glyph of a fish scale or fin (T25)<sup>4</sup>, and a fish (T738), both connoting the syllable ka. This is followed by the syllabic glyph wa (T130). These glyphs are commonly shown in succession, as on the Río Azul cacao pot. This is one of the earliest known examples of a

<sup>138</sup> "Ripple Farms."

written form of cacao, dating from the fifth century CE.<sup>139</sup>

In Mesoamerica, the Cacao Twin fish are recognizable as a fish of prehistoric origin with the capacity to survive a dried-up river bed and then to reanimate later like many of their amphibian cousins.<sup>140</sup> However, there is more to this symbolism than just a seeming death and rebirth of a resilient mud loving fish capable of going dormant and surviving drought. Many fish help to clean the water of the food debris and non-toxic refuse that are the effluents of human settlements. In Tenochtitlan, when the Spanish conquistadors arrived in 1521, they were amazed to find one of the largest urban populations at that time living on a shallow body of water without the correlating health and hygiene issues of their smaller European Cities of that time. There was no problem from filthy black waters or diseases caused by lack of hygienic practices. In fact, the waters of Tenochtitlan and lake Texcoco were so clean that the native inhabitants were able to harvest blue green algae from the surface and eat them without getting sick. The hygiene and practices of these people from sweat lodges (temazcal) to disposing of their waste was part of a sophisticated and ecologically rooted soil-making culture.

Undoubtedly, fish and water plant communities played an important role in cleaning the water, feeding the people, transporting the goods, and in creating fertile soil. These techniques or understandings were not limited to Tenochtitlan but stretched further South.<sup>141</sup> Furthermore, the *chinampa* techniques and systems of Mexico City that still exist are a testament to this IK tradition that still flourishes at the roots of Mexico

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<sup>139</sup> Grofe, "Recipe for Rebirth," 38.

<sup>140</sup> See Grofe, and see Popol Vuh, and see *Chocolate in Mesoamerica* or see Mayan glyphs and depictions of cacao, often including fish iconography whether buried in the soil, or in other thematic versions.

<sup>141</sup> Young, *The Chocolate Tree*, 26.



profundo. It is the short sightedness of modern urban encroachment developments surrounding the Chinampas today that are finally, after 500 years, threatening to fully eliminate the educational and functional complexity of the Indigenous technique.

It is possible that the symbolism of retrieving and grinding the submerged bones of fish for the purposes of making the flesh of human beings in the Aztec creation story may also be related to a process of crop fertilization in nitrogen-poor tropical soil. The Mexican chinampa system, the “floating gardens” in which mud and vegetation are dredged up from the shallow bottom of Lake Texcoco for the purposes of creating fertile milpas, consists of an extensive canal system (Coe 1993: 163–64). The presence of abundant fish in these canals may have been used for food as well as crop fertilization.<sup>142</sup>

Therefore when the Hero Twins’ bones are ground and added to the water, they become that froth that symbolizes the cacao drink. However, the froth also symbolizes the way that the waste from one process can feed the fish, and the way in which calcined limestone could be combined with water for many different uses from nixtamalization of corn and sealing the masonry of temples, to the breaking down of white cacao and compost piles. The froth can also be a reference to the importance of aerating the water to clean it, and the connection to fish and aerated clean water.

This expansion can account for multiple, overlapping narratives, such as the varying imagery of rebirth from a water lily, a turtle, a skull, a bird, or a fish. The Maya undoubtedly understood the bottom-feeding behavior of catfish, and their ability to recycle detritus and waste into the living matter of their bodies, which in turn feed other animals such as water birds and humans. If we can assume a physical mechanism for the rebirth of the twins from their own roasted and powdered bones, perhaps these remains, which “straight away sank there beneath the water” (Christenson 2003:149), were swallowed by catfish, which in turn were swallowed by water birds that gave the twins new life and a vehicle for their transformation and rebirth.<sup>143</sup>

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<sup>142</sup> Grofe, “Recipe for Rebirth,” 41.

<sup>143</sup> Grofe, “Recipe for Rebirth,” 42.

The fish then become an integral part of that spiritual ecological reliving, and the trenches that line the roads serve as ways to transport heavy loads, while doubling as sources of nitrogen rich compost that can be collected by the yearly dredging of the fish/transport trenches making fertile mounds all along the road and waterways. This, combined with reeds and roots and water plants, were part of the masterful eco-technical understanding that went into the building of the floating chinampas island gardens from waste products that become valuable productive food islands and whose roots drew whatever water and nutrients they needed right from the lake itself.

Dennis Tedlock suggests that the burning, grinding, and fish resurrection of the Hero Twins may have something to do with a fishing ritual, where fish are "replanted" by throwing fish bones into the water. Such practices, he notes, are known from native cultures on the Northwestern coast of North America. He adds that in Lowland Maya raised-field maize agriculture, fish were harvested in the ditches that ran throughout the cornfields (Tedlock, 1996:278–79). Therefore, the use of fish fertilizers in the Maya area also remains a possibility. If this is part of the origin of Maya fish symbolism, in that the ashes and bones of the Hero Twins are symbolic of a literal fertilization of maize from which human flesh was first formed, then this story would not have arisen as a metaphor for cacao.<sup>144</sup>

Remember that this IK is not fully lost or fully buried. It is still alive at the grassroots and now is the time to rekindle it, to blow on its embers, to celebrate it in ways that cause it to grow and take hold again in a way that will feed the peoples and the soils of today. This technique is about more than making profitable food systems because many of these traditions require a logic and a vision that go beyond our own profit or self-interest, or utilitarian human-centric logic of economics. These traditions require an ability to have a vision as a community of all beings, or as a city that includes citizens of all beings and seeks to foster a culture that is regenerative. This is the great dilemma of today's modern

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<sup>144</sup> Grofe, "Recipe for Rebirth," 36.

cities is their lack of community and their utilitarian focus on economic questions and not the health and wellbeing of soil, water, air, animals, and humans as a whole. It is the great opportunity for Indigenous communities of today to build on the strength of their community and sense of belonging to place. The chinampas agricultural technique is a still living but endangered knowledge in Mexico City is a great example of this. Below is a quote that shows some of the complex ecologies that we can find buried in this amazing aquaponic tradition, to which the fish-fish-froth is an aperture and doorway to understanding.

Canals are used for transport and irrigation, so the fields are often only reachable by boat. The canals are constantly dredged and—along with the mud—chilacastle, similar to watercress, are dumped onto the fields. Chinampas are almost a closed-cycle ecosystem, held in place underwater by files of huejotes or Bondpland willows.

“The huejote is the only tree which can resist this much moisture,” says Gustavo, owner of 12 chinampas. “The roots keep the banks of the canals firm. To make a chinampa you first have to make an enclosure of branches and plant willow trees in the water. Then you fill the enclosure with mud and water lilies.”<sup>145</sup>

The mounds of nitrogen rich soil from the trenches and the fish themselves are an important reminder of the mounding tradition of the Americas. In the Haudenosaunee Creation story, as told by Tom Porter, SkyWoman buries her daughter who becomes a sacred mound and symbol of Mother Earth. From her body spring the three sisters, from her heart springs the sacred tobacco, from her fingernails the roots and tubers and mushrooms and from her hair the edible greens and sprouts and medicines. However,

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<sup>145</sup> de Jong and Graf, “A Mexican Village,” para. 7.

mounding traditions of many kinds, especially with the use of fish as a form of making the soil of the gods, flourished throughout the Americas.<sup>146</sup>

The IK of the role and duty of fish in these complex ecologies is deeply tied to the teaching that we could not have the food of the gods without the soil of the gods, and in the Mayan word for cacao—ka-ka-wa—we find the teaching buried in plain sight.

Fertile soil is close to the heart of Indigenous cultures. So much so, that when Subcomandante Marcos of the Zapatistas talks about their Mayan inspired philosophy he describes it as philosophy that is the colour of the soil.<sup>147</sup> Marcos, like other Indigenous thought leaders, celebrates the deep connection between Indigenous peoples and the health of the sacred Mother Earth. Similarly, when Mohawk Elder Tom Porter retells the story of how SkyWoman's shuffling dance makes the grain of sand multiple and grows the turtle's back<sup>148</sup> it is reminiscent of the Native American tradition of making soil and leaving a place better than they found it through the spiritual ecological cultural traditions that arose over millennia. Instead of graveyards full of rotting chemicals, imagine urban peripheries dotted with sacred groves in which our waste and death could be transformed into the fruits and seeds of sacred forest groves for thought and reflections.

Contemporary Tz'utujil burial practices at Santiago Atitlán may be related to this mythic account. Once placed in the grave, Atitlecos raise a small mound of earth over the body and plant a tree on top which represents the soul of the dead reborn to new life. The community cemetery has long rows of graves bearing trees, giving the appearance of a great orchard or grove. Ximénez described a similar practice in highland Guatemala at the beginning of the eighteenth century and noted that persons were frequently buried in the maize fields, an indication that the dead were reborn as maize (1929-1931, I, 100). This is particularly significant with regard to Atitleco traditions of one of their principal culture heroes,

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<sup>146</sup> Porter (Sakokwenionkwas), *And Grandma Said*.

<sup>147</sup> "Zapatista History," Dorset Chiapas Solidarity, n.d., <https://dorsetchiapasolidarity.wordpress.com/zapatista-history/>

<sup>148</sup> Porter (Sakokwenionkwas), *And Grandma Said*.

Francisco Sojuel, who is believed to have set the pattern for many of the contemporary ritual practices observed today: “When Francisco Sojuel was being persecuted by his enemies they tried to kill him by cutting him into little pieces and sprinkling them with lemon juice and salt. But when they came back the next day they found that his coffin was empty and from it grew a giant zapote tree filled with fruit. People plant zapote trees over the graves of their family in memory of Francisco Sojuel because he did not die” (Christenson 2001, 207). The association between ancestors and fruit trees is also characteristic of ancient Maya thought. The sides of the sarcophagus of K'inich Janab Pakal at Palenque depict ten of the king's ancestors emerging out of a cleft in the groundline marked with kaban (earth) signs. Behind each ancestor is a fruit-bearing tree, indicating that they are rising from their graves in a fashion parallel to the sprouting of world trees.<sup>149</sup>

The Oral tradition of fish mounding is still alive today. Just a few months ago, during a presentation at the University of Waterloo, MJ High, a friend and coworker, was listening to these points with a quizzical look on her face. On our ride back to Toronto, she told me that her Cherokee grandmother taught her to plant the maize, the tomatoes, and the beans atop the mounds where they buried the fish guts and bones from their fishing expeditions. It is in this context of understanding how death and decay can be reborn as trees and fruits and the symbolism of previous life and generations becoming the food for tomorrow's harvest. Each year dies, and it is only in the living and the service that a year has the opportunity to become the fertile soil upon which the next rung of the tree of life is grounded. Indigenous cultures of the Americas adopted the virtue of building soil.

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<sup>149</sup> Christenson, *Popol Vuh*, 43.



FIGURE 1.54. Fish mound mural. I took this picture in Teotihuacan 2018 and noticed throughout the murals buried fish out of whose bodies grew cacao, rose of cacao, and maize plants. Above the good word, the flowering word of the Shaman feeds the earth with his good spirit and understanding and a heart connection between soil and body and good word is evident in this mural and symbolized by the pollinators and the bounty.x

## 15. Renewal and Rightness: Reconciliation and Truth in a New Era

So, after reappearing as two fish, the Cacao Twins reappear as two wandering beggars, and then as two magician troubadours who amaze the people of Xibalba with their magical feats of death and rebirth: killing a dog and bringing it back to life, burning a house and bringing it back whole, sacrificing one another and coming back to life. Furthermore, their dances are expressions of this complex and compelling performance that mesmerize and entertain the people of Xibalba. The Lords of Xibalba, and in particular Lord Death I and Lord Death 7 hear of this great show and invite these poor magicians to come and present themselves before the 12 Lords of Xibalba and show them their talent:

And on the very next day, they appeared again as two poor orphans. They wore rags in front and rags on their backs. Rags were thus all they had to cover themselves. But they did not act according to their appearance when they were seen by the Xibalbans. For they did the Dance of the Whippoorwill and the Dance of the Weasel. They danced the Armadillo and the Centipede. They danced the Injury, for many marvels they did then. They set fire to a house as if it were truly burning, then immediately recreated it again as the Xibalbans watched with admiration. Then again they sacrificed themselves. One of them would die, surely throwing himself down in death. Then having been killed, he would immediately be revived. And the Xibalbans simply watched them while they did it. Now all of this was merely the groundwork for the defeat of the Xibalbans at their hands.<sup>150</sup>

In this researcher's interpretation Xibalba is a symbol of an epoch or empire in which scarcity and centrist control ruled. The horrible names of the lords of Xibalba like Puss, Death, and Flying Scab are symbols of these human hardships. The rule of the 12 Lords of the Underworld symbolizes suffering and scarcity. The Hero Twins garner the support of the common people who marvel at their talents, but they do not seek to go after the Lords. They bide their time and feign timidity until they are commanded to present themselves before the Lords of Xibalba, to which they agree, but they do not ask for payment, and they do not celebrate their lineage, instead they cover their noble lineage and are presented as two lowly orphans.

So they sacrificed his dog and then revived him once more. The dog was truly happy when they revived him. He vigorously wagged his tail when they brought him back to life. Then the lord spoke again to them: "Now you must surely burn my home," they were told. So then they burned the home of the lord. The house was overflowing with all the lords, yet none were burned. Immediately it was restored again. Thus the home of One Death was not lost after all.<sup>151</sup>

The secret to dialectical and spiritual ecological revolutions is not the death and rebirth of *all* elements of the previous order, the secret to spiritual ecological regeneration and

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<sup>150</sup> Christenson, *Popol Vuh*, 169.

<sup>151</sup> Christenson, *Popol Vuh*, 172.

re-evolution is also in the intelligent leaving behind or final death and destruction of certain key limiting elements, or in this case of the two preeminent Lords of Death. The dialectics of change and shift demand a kind of reordering, renewing, death, re-evolving, regenerating and rebirthing and reconciliation. Thus, in the shift from one epoch to another some key elements of the social, political, economic, and ecological order must be left behind while other elements are re-organized. In the age of climate and cultural homogenization these tools and techniques help us to create resilience and fertility in the remaking of the new commons. In the age of truth and reconciliation and social justice movements for Indigenous peoples, it is a reminder that some abusive elements of the system must change and be left behind and others transformed and re-ordered according to an intercultural paradigm.

The Maize God and his twin brother were defeated by the lords of Xibalba and subjugated within their dominion, however, in the shift from the dominion of Xibalba to the renewed era of the Cacao Twins the Maize God is regenerated and the worst of the lords of Xibalba are left to moulder in the past.

This is one of the ways that the *Popol Vuh* can be read on an epochal level. When the era of the first set of Hero Twins time was coming to an end, scarcity and death came to rule, for their vision and epoch of the culture of maize and the field milpa was coming to an end. From an ecological, political, and economic perspective this can be interpreted as the consequences of deforestation and overpopulation on a civilizational scale. The cutting of forests to feed an ever-growing Mesoamerican civilization. As a result, cutting too many forests and overly intensive farming, desertification, drought, famine and



finally war set in. The abundantly generous and civilization building elements of maize and the other crops of the field garden are lost beneath the epoch of scarcity and death symbolized by the death of the first set of Twins and the rise and dominion of the Lords of Xibalba. One reading of this tale is that the death of the first Hero Twins civilization is brought on by the surpassing of an ecological threshold for Mesoamerican civilization. However, after an epoch of darkness, the darkness gives way to the Cacao Twins who master a more renewable and regenerative transformational cycle, and this is why they come to be known as the masters of life, service, self-sacrifice, death and rebirth; and this is why they bring their father the Maize God back to life afterwards reanimating that tradition and bringing it into the new order of the cosmogony of Mesoamerica that now also includes the forest garden and the regeneration of the soil and the commons..

Political order is also an integral element to the reading of the *Popol Vuh*. Governance is a poor translation for the Mesoamericans forms of social, political, economic organization.<sup>152</sup> However, to this day in the traditional communities, where lands are common lands, where *comisariados* (mayor) pay to serve instead of being paid, and where forest commons, field milpas, and forest gardens are part of a complex subsistence plus spiritual ecology we see traces and living vestiges of these beautiful Indigenous rooted political traditions. These communal concepts of politics and governance are not easy to translate into Spanish or into English. One Zapotec intellectual<sup>153</sup> of the Sierra Norte of Oaxaca, Jaime Luna, describes his Zapotec cultural rootedness in place and sense of community as *comunalidad*. Luna argues that Zapotec

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<sup>152</sup> Esteva, *The Oaxaca Commune*, 10.

<sup>153</sup> Martínez Luna, “The Fourth Principle.”

people of the Sierra Norte are not part of the community, but that they are the community inseparable from their unique place in the natural world. This connection and stewardship of land and spiritual ecology is the tip of the proverbial iceberg of Mexico profundo's Indigenous political and organizational traditions. To experience this living ancient tradition, one only has to go to Oaxaca which to this day has more communal lands than any other place on the planet. To journey to Chiapas and Guatemala and dwell in communities still rooted in their ancestral governance and agricultural traditions is to come to appreciate the vastness and the diversity of these Indigenous governance traditions. Moreover, to appreciate the uniqueness of the Zapatista uprising is to see how the Zapatista uprising is the unique product of a deep Mayan culture in dialogue and transformational spiral dance with modern social movements<sup>154</sup>. This is part of the deep beauty and IK inspirations at the base of the Zapatista revolution in Chiapas, Mexico. This commitment to a politics beyond control and scarcity thinking is rooted in a uniquely Indigenous approach to governance rooted in a spiritual ecology and deep dignified relationship to place and to all beings. This type of inclusive re-organization and governance model is symbolized in the overthrow of the Lords of Xibalba:

The first to be sacrificed was the very head of all the lords, One Death by name, the lord of Xibalba. He was dead then, this One Death. Next they grabbed Seven Death. But they didn't revive them. Thus the Xibalbans took to their heels when they saw that the lords had died. Their hearts were now taken from their chests. Both of them had been torn open as punishment for what they had done. Straightaway, the one lord was executed and not revived. The other lord had then begged humbly, weeping before the dancers. He would not accept it, for he had become disoriented:  
 "Take pity on me," he said in his regret.  
 Then all of their vassals and servants fled into the great canyon. They packed themselves into the great ravine until they were piled up one on top of the other.

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<sup>154</sup> Gustavo Esteva, *Celebration of Zapatismo* (Penang: Multiversity, 2004).

Then innumerable ants swarmed into the canyon, as if they had been driven there. And when the ants came, the Xibalbans all bowed down, giving themselves up. They approached begging humbly and weeping. For the lords of Xibalba were defeated. It was just a miracle, for the boys had transformed themselves before them.<sup>155</sup>

I see an example of Indigenous reconciliation traditions in this story. Not all the Lords of that dark epoch are banished and killed. It is not a reverse genocide, but only a re-ordering guided by a higher set of principles than scarcity or power over, that is why the Cacao Twins are seen to usher in an era of re-birth or a veritable renaissance of culture, agriculture and politics in the ancient epic. A type of reconciliation comes to be, and the Cacao Twins of the forest garden reveal their true identity and nature in the process. What teachings might we find about truth and reconciliation from the study of the *Popol Vuh*? What teachings might we rediscover about intercultural dialogue, re-evolution and epochal transformation through study of the *Popol Vuh*? What can this reordering teach us about the potentials of intercultural radical pluralism? These questions will require a whole other treatise; however, I do see the teachings of cacao as inseparable from key elements of these transformation and epochal paradigm/political shifts and reimagining of the political and civilization paradigm of today. Through the study of the Cacao Twins, it is perhaps possible to strategically access elements of these teachings. It is important not to understand the Cacao Twins in a vacuum, as it is important not to reduce our understanding of the beauty of the field and forest gardens to pure environmentalism, pure economic utility, or pure nutrition or aesthetic values. The Cacao twins symbolize a holistic way of understanding the vastness and profundity of the

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<sup>155</sup> Christenson, *Popol Vuh*, 174.

deep culture of Mesoamerica, and though these traditions are still living today, now is a time to re-examine the ways in which organizational and governance structures and communities of plants humans and animals can play roles in healing, re-generating, re-newing, re-discovering, and remaking these traditions anew! As Gustavo Esteva often said: “changing our traditions in the traditional way.”

## 16. Rebirth of the Forest Garden: Rebirth through the Forest Garden Spiritual Ecology as Epochal Paradigm Shift

Books have been written about the rise and fall of civilizations according to their soil conditions and this perhaps is the root of the concept of culture.<sup>156</sup> For a civilization and culture to flourish in the long run, like a plant, it must be rooted in good soil, because agriculture and a clean environment are the basis of our ability to survive as human beings in the long run. The Lords of Xibalba represent a time in which scarcity, pestilence, war, and famine ruled. Through the lenses of spiritual ecology, what I see is the connection between the Maize and the field garden and the structure of civilization.

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<sup>156</sup> Linda Qiu, “The Dirt on Dirt: 5 Things You Should Know About Soil,” *National Geographic*, December 6, 2014, <https://www.nationalgeographic.com/culture/article/141205-world-soil-day-soil-agricultureenvironment-ng-food>; Anabel Ford and Ronald Nigh, “Origins of the Mayan Forest Garden: Maya Resource Management,” *Journal of Ethnobiology* 29, (Fall/Winter 2009): 213–236.



FIGURE 1.55. Wall mural in Teotihuacan shows a combination of field and forest garden crops growing atop soil mounds of fish and other complex deities, just as the Maize god's funerary mound became the gateway for a soil mound regeneration of the forest garden in the glyph below. Photo taken by Michael Sacco 2018.



FIGURE 1.56. Maize God's funeral.<sup>157</sup>

However, it is only because of maize and the culture of the field, the culture of the milpa, the brilliance of the ancient peoples of Mesoamerica that a great civilization arose in the first place. Yet, after millennia of cutting forest to plant maize, beans, squash, and other crops, surely there were limits to growth. Hence, one of the main points of these teachings is to understand how to become the masters of death, rebirth, and regeneration, the Cacao Twins needed to find a way of renewing the soil of cultures through reforestation. Moreover, in this epochal shift they reordered the place of the maize field gardens/milpas while adding a new level to the beauty and diversity of the Mesoamerican food basket. It is in this sense that we can see that the Three Sisters of the field garden are reborn and re-invented as the Three Pillars of the Forest Garden (cacao, vanilla, achiote). This epochal shift is embodied in the Mayan ceramic drawings picturing the funeral of the Maize god above, and the rebirth of the forest garden from his corpse in the glyph below. In the below glyph taken from a Mayan ceramic vase the skeleton of the Maize God gives rise to the forest garden.

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<sup>157</sup> Martin, "Cacao in Ancient Maya Religion," 157.

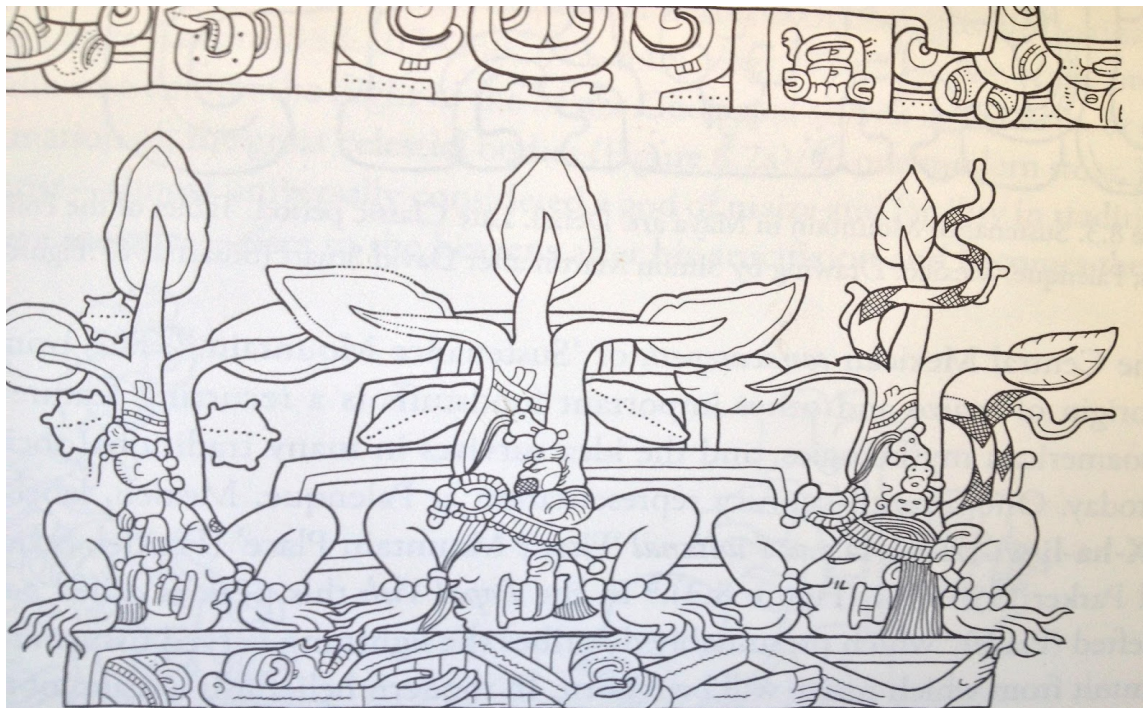


Figure 8.2. The burial and transformation of the Maize God within Sustenance Mountain. The dead god lies on a bier. His body is reduced to a skeleton surmounted by anthro-

FIGURE 1.57. Birth of the forest garden from the Maize God's corpse.<sup>158</sup>

Forest gardens provide food, fuel, fibre, flowers, fauna, and a commons for family and community of all beings to flourish. Forest gardens strengthen the ecological food basket and the subsistence+plus economy of the small-holding producers of Mesoamerica to this day. Moreover, forest gardens are reborn out of the dialectical transition from wild forest to field garden, and through the fingers of culture that includes building soil mounds, selective planting, and selective cultivation back towards a mature forest. Forest gardens represent a shift back towards a spiritual ecological tradition that is not only sustainable but are also regenerative in the long-term cultivation of soil and culture. This is the kernel of the spirit of rebirth in the story of the Cacao Twins. It is through this

<sup>158</sup> Martin, "Cacao in Ancient Maya Religion," 157.

long-term spiritual ecological cycle that the field garden where the Maize god flourished can be reanimated, and from which the trees and ecologies can regenerate the waters that are the blood of the sacred mother earth.

This eloquent symbolism describes the life-giving energy of the sun that allows maize to grow and life to flourish. The new sun of this world was reborn in an act of self-sacrifice, allowing life to emerge from death, just as all seeds symbolically die and are sown in the underworld of the earth, later to be reborn as a new plant of the next generation. In the Classic period, the Maize God follows this cyclical pattern, as do the Maya whose bodies, according to the *Popol Vuh*, are made of maize.<sup>159</sup>

Furthermore, though the *Popol Vuh* centers in what is now current day Guatemala, Belize and Mexico, this forest garden revolution stretched right from the Amazon basin with its *terra preta* traditions and luscious food crops and medicines, to the temperate forest gardens of Ontario's Maple trees, pawpaws, pine nuts, sumac, blueberries, elderberries, and wild turkeys. These plants and animals are part of the spiritual ecology of the forest gardens of the North that are begging for a renewal today as well. The Cacao Twins cannot flourish in Ontario, the regenerative forest garden commons and the relationships between field and forest garden can, do, and could again on a civilizational level be regenerated in Ontario, if and only our Canadian society would embrace a commitment to a regenerative ecology and economy rooted in agriculture of fields and forests inspired by Native tradition. Below the Cacao Twins water and reseed the land on the Turtle's back out of which their father, the Maize God re-emerges, renewed, and reborn.

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<sup>159</sup> Grofe, "Recipe for Rebirth," 56.





FIGURE 1.58. Resurrection of the Maize God by the Cacao Twins glyph<sup>160</sup>

## 17. Cacao as Currency: What Growing Money on Trees Teaches us About Wealth, Prestige, and the Gift Economy of Mesoamerica

In the cacao economy of old, the richest man or woman was not the one who accumulated/banked the most cacao, but the one who gave the most through the redistributive potlatch system that still flourishes in Mexico profundo's Indigenous traditions and festivals today. Oaxaca's largest industrial chocolate maker today is called Mayordomo which is a co-opted reference to the traditional role of the chief benefactor of

<sup>160</sup> Marcos Eduardo Ramos Ponciano "Eccentric Caches of Buenavista del Cayo: Contextual Analysis and Cosmological Significance," (Master's diss., San Diego State University, 2018).

the village festivals and communal construction projects. One who sponsors an event or festival is called the mayordomo.

In ancient Mexico, red cacao was considered the gold standard, white cacao (patastle) the silver standard, and peanuts the bronze standard that were used as alms for the poor. However, even these three seeds form an ecological system with the white cacao shading the red cacao, and the leguminous peanuts adding nitrogen to the soil through their leafy matter and nitrogen-fixing properties. Furthermore, on a nutritional level a paste of the three would be protein rich and delicious as a drink, as a paste, or as an additive to other foods. Or even the oil from the peanuts and cacao would be useful for cooking and/or cosmetics.

Comparing this to the gold, silver, and bronze as a currency system in juxtaposition can reveal some of the different values around wealth and prestige rooted in a culture that used cacao as currency.

One day, I was walking with a pure silver coin in my right pocket and a few cacao beans in the other. As I peeled and snacked on the cacao beans, I meditated on the philosophical and practical differences between cacao and silver while at the same time remembering that they were both used as currency. At that time, I recently learned of the metallurgical properties of silver<sup>161</sup> that causes it to kill microbes that it comes into contact with, and for this reason silver is used in cleaning water, or silver spoons for minimizing bacterial contamination while eating. Furthermore, I came to understand how

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<sup>161</sup> Yan Zhou, Ying Kong, Subrata Kundu, Keffrey D. Cirillo, and Hong Liang, "Antibacterial Activities of Gold and Silver Nanoparticles Against *Escherichia coli* and *Bacillus Calmette-Guérin*," *Journal of Nanobiotechnology* 10, Article no. 19 (2012), <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3405418/>

gold is good for our body's chemistry and that it is associated with the electrochemistry of our brain's healthy functioning. As a metal, gold is beautiful and can be pounded thin to create beautiful artifacts. Perhaps these use-values were part of the reason humans first came to value these precious metals so much in the early days of Western civilization. However, beyond the use value of gold and silver they came to have symbolic value and to be associated with wealth and power. Their metallurgical and mineral properties allowed them to be stockpiled, accumulated over generations, concentrated in vaults, buried in the ground or vault for several lifetimes. This lends itself to an accumulation-oriented currency system.

Cacao on the other hand is good for the brain, good for the teeth, promotes blood flow, and can be a quintessential spice in enhancing our taste buds' enjoyment of food. Cacao with its antibacterial shell and its myriad of uses became a way to facilitate trade in Mesoamerica. Trade through a currency standard facilitates the trade of unlike for unlike through the intermediary of a commonly accepted currency of value. Cacao was recognized on a civilizational level both in terms of symbolism and value. Unlike gold and silver, cacao could not be buried in a vault for all time, nor was it dug from the ground or panned from the rivers. Instead, cacao grows on trees, and rots in the vastness of time no matter how well it is stored. However, properly stored cacao keeps for 20 years and beyond. Furthermore, when the Spaniards arrived in Tenochtitlan Montezuma's cacao vaults contained millions of kilograms of cacao. The Spanish conquistadors who landed proclaimed their crusade for God, gold, and spices. The conquistadores quickly realized the value of the cacao as containing all three of these values! Two of Cortez's

generals raided the cacao vaults and seized the wealth for themselves to acquire the wealth of Tenochtitlan through trade in local currency.

Rooted in cacao currency are the values of Mexico profundo, especially considering it is a currency that grows on trees. However, even these values vanish and are stripped away from cacao when it is removed from this cultural matrix of the forest garden traditions of the Americas. Cacao cultivation in the many parts of equatorial Africa is a terrible example of how cultural context is key to the spiritual ecological currency of cacao. In many African countries, cacao trees have become synonymous with child slavery, destruction of the jungles, and the extractive exploitative economics of industrial manufacturing of chocolate. In the hands of Cortez' generals, cacao began its slide away from its use as a culturally appropriate and ecologically rooted currency towards the accumulation-oriented avariciousness of the Old World currency schemas.

Cacao currency that grows on trees was known as a blessed currency because it did not promote the avariciousness that gold and silver currencies engendered in the European psyche. Furthermore, it was a wealth that all families with a little forest plot could cultivate as part of a subsistence-plus eco-economy. Not only could they feed themselves, but cacao, vanilla, patastle, and achiote from the forest gardens afforded them durable currency to trade with artisans from the cities and other villages who were mastering skills and trades that were not local. Mexicans and Guatemalans know that their ancestors were master artisans, traders, and businesspeople, but the elders know that they were able to do this in a way that did not allow economic interests to trump all other

ecological, social, spiritual and use values. As Gustavo Esteva wrote,<sup>162</sup> Now is the time to put economics back in its rightful place, a marginal one” to the life and spiritual ecology of the communities of Mexico profundo. The similarities and distinctions of cacao currency reveal elements of the unique characteristics of the cosmogony of Mesoamerica.

Cacao as currency is rooted in an ancient tradition of use value and symbolic value that did not compromise or compete with locally produced goods. Vandana Shiva<sup>163</sup> described this kind of trade currency as the spice of life trade, and it is a good way of understanding how spices for their potency, their use value, and their durability can be an excellent medium of exchange valued by humans in vastly different circumstances and contexts.

## 18. Conviviality and Pleasure: Chocolate as a Spice, Drink, and Healthy Luxury

If it were the end of the world, ask yourself: would I rather be locked in a room full of money, a room full of gold and silver, or a room full of cacao and vanilla? If it was truly the end of the world the only value of the money would be as fuel to heat the room, the gold and silver could have value, but your most pressing need would be feeding yourself so you would starve before you could enjoy your wealth.

Cacao and vanilla on the other hand could support you almost indefinitely if you could only find a clean water supply. However, you might want to choose your

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<sup>162</sup> Gustavo Esteva, *Grassroots Postmodernism: Remaking the Soil of Cultures* (London: Zed Books, 1998).

<sup>163</sup> Conversation at the University of Toronto Hart House when Paul Decampo and Arlene Stein of Slow Food helped Host Vanadan Shiva at Hart House. I had the opportunity to meet personally with Arlene for 10 minutes and explore the symbolism of the cacao trade from the international perspective of Slow Food.

co-occupants carefully as someone who eats a bunch of cacao seeds can tend to be a little accelerated and perhaps even a little bit “squirrely”. It was said that Moctezuma would drink up to 30 frothing cups of chocolate a day. This surely would keep him energized. Furthermore, we know that chocolate is associated with weddings in Oaxaca to this day, and funerary rights as well. At a wedding, the froth is a symbol of life, celebration, and joy; drinking chocolate enlivens the festivities. In the funerary wake the flat frothless chocolate is a balm for the grief of the bereaved family and assuages the spirit. Chocolate helps to relax the grieving throat muscles and soothing the irritated throat, and nourishing the body whose stomach has been upset are part of the medicine of cacao for the bereaved. That little bit of chocolate has an overall warming effect on the forlorn soul while simultaneously and powerfully nourishing the body.

*Chocolatl* literally means bitter water and it is from this *Nahuatl* term that we derive our modern word chocolate. This frothing bitter drink nourishes the body and is pleasurable to drink for many reasons. Firstly, the cacao butter froth that forms atop the chocolate drink catastrophically disintegrates in your mouth leaving a silky luxurious feel and paving the way for the vanilla or floral elements and spices in the chocolate drink to dance on the taste buds. Furthermore, cacao has pleasure inducing properties associated with its consumption, and science has confirmed that compounds like anandamide and phenylethylamine are present in significant levels in the cacao and chocolate, both of which are neurotransmitters associated with pleasure. The stimulating properties of the theobromine stimulant animate those who drink chocolate not unlike caffeine would a coffee drinker. There was even a name for the ancient celebrations that would feature the

chocolate drink and in which participants would become drunk on chocolate, called the *chocolatada*.<sup>164</sup> Although we know that the peoples of Mesoamerica had many recipes for chocolate including alcoholic or consciousness altering ones, that is not the spirit of the *chocolatada*. To drink chocolate together, or as the Maya said to *chokola j*, is to engage in a good, clean, and stimulating spirit of creativity and energization, this is what others would describe as conviviality. This is the spirit of the daily ritual of hot or cold drinking chocolate, and a version of this spirit is what made the chocolate houses of Europe hotspots for political and social discourse even despite the lack of cultural context.

Yet there is more to drinking chocolate than the pleasure of the taste, and the pleasurable body sensation of being energized. Cacao and chocolate are also powerful spices. Cacao has more than 1200 chemical compounds and high levels of antioxidants and micronutrients like zinc. Zinc and improved bloodflow are associated with the function of the taste buds on the tongue. A little bit of cacao solids and cacao butter combined with vanilla, or rosita de cacao flowers, or other spices and foods helped to promote the blood flow on the tongue and to enhance the taste of those precious and delicious flavours. Furthermore, the saliva, the cacao butter, and the cacao solids have a synergistic effect in the mouth when melted. Together all three combine to stimulate the taste buds on the tongue by improving the blood flow and dispersing the flavours and antioxidants smoothly throughout the mouth with the help of the melting cacao butter and saliva. These physiological flavour enhancing properties are part of the basis of the concept of cacao as spice. However, the complementarity of cacao with other ingredients

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<sup>164</sup> Coe and Coe, *True History of Chocolate*.

is what led to the pre-Hispanic recipe known as *mole*. It was the food of the gods, cacao, that put the “holy” in the *mole*! Making a *mole* inspired sauce is as simple as making a concentrated oil, fat, or caramelized vegetables and grinding them with a bit of roasted cacao nibs or blending them with a bit of pure or spiced chocolate. This simple recipe is the beginning of the more complicated and ancient culture of *mole* with its hundreds of recipes.

On another level, we must recognize that to invite someone to a chocolate drink was literally to directly consume their wealth, and perhaps the form of this gesture, combined with the properties and the pleasure of cacao, make it a wonderful symbolic vehicle for bringing people together. Perhaps it is this consonance and resonance between form and content, that make a well-made, properly packaged, and meaningfully gifted piece of chocolate the perfect piece of food to keep the depressing dementors<sup>165</sup> of today's world at bay, and perhaps it is this unique and mouldable element of chocolate that still connects its form, its function, and its symbolism to the beauty of the gift economy of old. Beautiful chocolate is a powerful gift.

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<sup>165</sup> In today's popular *Harry Potter* books, the hero can keep the soul-draining energy of the Dementors at bay by eating a bit of chocolate.





FIGURES 1.59 AND 1.60. Chocolate Skulls. Photos taken by Michael Sacco Toronto 2020 of moulds and calaveras made at ChocoSol.

Over the years, I have celebrated chocolate in thousands of ways, and I have witnessed its power, from the cold troubled rainy woods of the Black Family farm during Soupstock,<sup>166</sup> to the markets, festivals, and solstice chocolatadas of Oaxaca, Toronto, Guelph and beyond. I know that chocolate is not a panacea for the problems of today's world. That is to say, chocolate cannot solve all of our problems. However, it can be a unique teachable moment, a perceptual doorway or aperture, a disruptor for getting people to think, imagine, and feel differently. Moreover, I can say that in the dark night of the soul in which our very hopes and dreams for a just and fair and ecological tomorrow are under siege by the cruel realities of today's industrial economic order, or our very health and family are in danger or worse yet succumbed, a dark delicious bit of stone ground food of the gods chocolate can be the symbolic shawl to "abrigar esperanza" (keep hopes warm) in the dark night of the soul. To keep our hopes warm for just another day, to delay and defer the loss of the hope for meaning, so that the possibility of the sun's return might warm them to life again. This is the spirit of "*abrigando esperanza*" that Gustavo Esteva celebrates,<sup>167</sup> and that lends itself so well to the concept of the eco revolutionary chocolate. It is not the idea that everything will work out, or that the world is some overly simplistic Hallmark card. Rather it is the idea that "something" makes sense, and that basic human dignity and a clean human spirit is something worth struggling for and something that energizes and motivates humans. In this context a well-made bite or drink of chocolate, made with full attention to the spiritual ecology,

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<sup>166</sup> "'Soupstock' Protests Mega-Quarry Environmental Impact," *CBC News*, October 21, 2012, <https://www.cbc.ca/news/canada/toronto/soupstock-protests-mega-quarry-s-environmental-impact-1.11790>

<sup>167</sup> Esteva, *Grassroots Postmodernism*.

clean rituals of production, and proper ceremonial understanding can become the symbolic shawl or *abrigo*, to keep our hopes and dreams warm. Chocolate in this sense can be revolutionary and this sense of the chocolate made with this kind of heart and good mind was the basis for the “chocolate manifesto” that maestro Gustavo Esteva and I worked on for almost two decades! Holding the form and the content of a good, clean, tasty, ecological, socially just, properly targeted, and perfectly timed bit of chocolate is the challenge of revolutionary chocolate! Through the symbolic vehicles of cacao and chocolate, like the maize for the “Sin Maíz No Hay País” campaign, one can find a way to continue manifesting these values in both literal and symbolic ways, such that the form and the content, the means and the ends can remain whole. It is the human mind that struggles to grasp and savour this complexity all at once, and it is through the complex dance of these teachings that I struggle to elucidate this point. Chocolate is not the panacea, however; properly prepared and shared chocolate can be the aperture and the symbolic doorway for this Indigenous wisdom to shine forth.

## 19. Cacao is the Food of the Gods: Food and Medicine, Nourishment, and Potentiator

In 2012, a team of chocolate makers stood huddled in the middle of a woods in the Highlands of Ontario.<sup>168</sup> It was cold, blustery, at times sunny, and at times rainy. One *Anishnabeg* Elder and traditional fisherman Andrew Akiwnezie described the weather as troubled and declared that it was a good sign. His interpretation was that we were a group

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<sup>168</sup> Heather Loney, “Tens of Thousands Attend Toronto’s Soupstock, Mega-Quarry Protest,” *Global News*, October 21, 2012, <https://globalnews.ca/news/299452/tens-of-thousands-attend-torontos-soupstock-mega-quarry-protest/>

of chefs, farmers, and community members fighting a proposed mega-quarry in Ontario's headwaters. If the weather was not troubled, then we (according to his interpretations) would have had something to worry about. However, on that cold fall day, we served a 100% cacao drink to the people who visited our fundraiser food station in the cold, wet woods of Soupstock. The cold and the wind were taking it out of the people and for the first time in our experience the Ontario public savoured the 100% chocolate drink and gulped it down without even a peep of complaint about bitterness. Why? My theory is that outside of the creature comforts of today's modern society we are better able to sense the nourishment and the power of a hot cacao-chocolate drink. Perhaps this unmediated relationship to nature and food is part of the way in which First Peoples came to recognize the power of cacao and *chocolatl*.

When people ask me what my favourite chocolate is, the answer is simple. It is called 100% gratitude. This is a blend of pure roasted and ground cacao nibs and nothing else. The ritual for best enjoying this bite of dark chocolate is with a glass of herbal tea first thing in the morning and preferably looking east towards the rising sun. Though the chocolate is bitter, it cleans your teeth, it gets the blood flowing, it stimulates the bowels, and nurtures a sense of well-being. Gratitude is not just about being grateful, it is also about understanding that life is a gift with sacred duties. Furthermore, with this gift of life comes suffering and comes the grief and bitterness of loss and death. It is learning to take time in this ritual and practice on a daily basis that reminds us to be grateful for the sacred gift of life and to serve a purpose greater than our own individual life and death, so that we can participate in traditions and worlds that will live on beyond our demise. It is

more important than ever to practice gratitude when life is most difficult, most bitter, or when we are experiencing loss. This is part of the medicine for the bitterness of the cacao. My elder and mentor Stephen Jenkinson poetically states that grief is still loving and honouring that which you have lost.<sup>169</sup> Grief and gratitude in this sense are siblings. The cacao does not only feed and nourish us with its proteins, its fats, and its fibres. It nourishes us with its many micronutrients that our bodies, brains, blood, and bones need to flourish and rebuild themselves. It improves our blood flow and respiratory function. However, there are deeper secrets in the medicine of the 100% gratitude bar ritual, only some of which are rooted in the chemistry, and others in the habit, the practice, the ritual, and the ceremony of partaking in cacao food and drink.

When you combine cacao with other medicines, it makes them more powerful by enhancing the blood flow, the digestion, and the bodily function of blood circulation. Elements of cacao feed the good probiotics of our gut, while simultaneously keeping us regular and cleaning our colons. The cacao in this sense doesn't just enhance the pleasure of taste through blood flow in the tongue. It enhances the power of the medicines through activation of the vasodilator properties of the cacao. and the unique properties of cacao butter which is a terrific vehicle for oils and other medicines to penetrate our taste buds and enter our blood flow directly into our bloodstream through the mouth!

On the ranch of a famous old-time *cacaotero* Don Tito Jiménez, in Pichucalco, Chiapas, Mexico 2011, Don Tito marvelled at this wonderful food that three generations of his family before him and two after were stewarding. He marvelled at the ways in

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<sup>169</sup> *Griefwalker*; directed and written by Tim Wilson, featuring Stephen Jenkinson (2008, National Film Board), 70 min., <https://www.nfb.ca/film/griefwalker/>

which cacao cleans the blood, nourishes the body, and raises the spirit. After generations of working with the cacao, he was still moved to wonder and be grateful for the healing properties of the cacao and stated: “it truly is the food of the Gods.”

Chocolate was one of the first foods the conquistadors marvelled at as they watched Aztec warriors hiking all day sustained only by a bit of dark frothy chocolate. Not only did the chocolate drink nourish the Indigenous warriors and raise their spirits, it also helped to lower their muscle recuperation time and keep them energized on their long walking campaigns. Today’s athletes could learn a thing or two from the simple healthy diet of Indigenous merchants and warriors who walked 1,000s of kilometres fully loaded and without pack animals.

Furthermore, cacao makes other medicines stronger and more potent for our bodies because it contributes to improved blood flow while adding its own healthy nutrients into the mix. It is pleasurable to eat and drink, while simultaneously being good for us. As a crop it encourages ecological forest gardens and must grow in some shade. Its fats are healthy fats that clean our arteries and nourish our skin and body. This ancient seed still has many other recipes and remedies to teach us today, but in the political geography of cacao traditions (food of the gods, aesthetic of the gods, industrial candy of the masses, super food) it is more important than ever to rediscover and renew our understanding of cacao and chocolate as a food and a medicine and not as a candy bar or a sinful decadence. The 21st Century challenges of the world of chocolate and cacao lovers is to renew, regenerate, and rebuild the culture of cacao so that it can become a powerful symbol and vehicle for regeneration, rebirth, and renewal. Planting the saplings

of tomorrow's forest gardens in memory of our loved ones, and in service of future generations is not only an ending, but also a re-newed beginning. Spiritual ecological food baskets of the forest are a powerful symbol and vehicle for service to future generations. Cacao is the food of the gods precisely because its teachings and meanings are so deep, like the rings of a tree and its deep roots, yet its fruits feed us and its branches protect us.

## 20. Cacao as symbol of IK: Chocolate as the Medium and the Message for the New Poets

In our study hall at Trent University's Indigenous Studies department there is a placard on the wall of a woman holding a baby. It invites us to find the unique gift in this child that only they have to offer to the world. I interpret this as a beautiful reminder that every being has basic dignity and a gift to offer if they choose to cultivate it, and if they have the necessary love, nurturing and support to do so. No one person can do it on their own, nor can anyone do it for you, and this is the spirit of *floreCIMIENTO*. Isa Hinajosa of the Universidad de la Tierra put this insight into imagery in Oaxaca 2003. See the below image of *floreCIMIENTO*: *floreCIMIENTO* must always begin in the heart and in an interconnected spiritual community. Secondly, notice the wind which is as old as the hills carrying the seeds from previous generations. Thirdly, notice that when the community comes together in the good heart/mind they become the fertile soil for these seeds to take root in our heart/mind consciousness. Then the *floreCIMIENTO* begins to grow and spread. The flowering first takes root in the heart. Then the heart leads to the good word as in the second figure. The third figure shows how the good heart and the good word combine to

create the good mind, which is a flowering word and mind. Finally, the word itself begins to flower and journey out into the world and bear fruits. *The flowering word of florecimiento* and regeneration pushes forward into the world and becomes part of the river of time carrying the seeds and traditions and hopes to others on the winds of time and tradition. Wherever there is a good heart/mind in community these seeds of hope can be kept warm and take root, and this is the fertile soil for regeneration and rebirth.



FIGURE 1.61. Florecimiento. An original drawing done by Isa Immanuela Hinojosa, and gifted to Michael Sacco in 2004.

It is in this spirit of IK and *florecimiento* that one can see cacao as a vehicle and as a vessel, a means and symbolic ends. However, the context, the ritual, the attitude, the chains of translation are inseparable from the results sought—there is no guarantee that the arrow of your chocolate intent will hit its mark when you send it out into the world. The tension between light and dark, between healing and hurting remains a clear and



present danger when working with cacao despite good intentions. Cacao and chocolate are not panaceas, but properly respected and positioned cacao and chocolate can be powerful vessels and vehicles for creativity and radical hope. This chocolate manifesto is not a doctrine, it is a creative invitation. This chocolate revolution is not a destination; it is a transformative process thousands of years in the making and rooted in IK. The spiritual ecology of cacao and chocolate and their teachings emerge from the art and skill of bringing the means and the ends together on an epochal level in terms of creating a regenerative and spiritual ecological connection to forest, to food and to community. Celebrating the IK teachings of cacao and chocolate is to celebrate and strengthen a cacao culture and tradition that is delicious, nutritious, ecologically regenerative, socially just, and spiritual. Meditating on these 20 teachings is part of learning about what the medicine of cacao can teach in the context of current social, environmental, and intercultural challenges. Celebrating the IK teachings of cacao is about renewal of soil-based initiatives and actions; it is about re-discovering and strengthening these Indigenous cultures of cacao and chocolate today, to renew them, remake them and carry them into tomorrow's ecological harvest.

The renewed Cacao Twins of today challenge us to deepen our understanding, to enrich our lexicon, and to move beyond the narrow confines of a cacao imprisoned by the economic matrix, to a new intercultural matrix that is simultaneously: socially just, profitable, and spiritually ecological. The Cacao Twins remind us to plant trees and serve ecological re-generation that goes beyond our individual benefit to the benefit of all Creation in a beautiful and poetic sense, and this is deeply connected to the way in which

the Cacao Twins become the masters of service, self-sacrifice, death and rebirth.

Meeting the climate catastrophe of today demands this kind of radical actionism!

Reflecting and meditating upon the 20 teachings of cacao is good food medicine for renewing our relationships to food, soil, nature, community and place. From an intercultural perspective, re-discovering IK and the beauty of the gift of cacao is a reminder to cultivate a deep respect and dialogue with other cultures and traditions. Watering these roots and tending to wisdom forests can be balanced with the poetic *floreCIMIENTO* of new seeds and seedlings designed to regenerate the spiritual ecological forest gardens of the Americas (tasks and projects that we will explore in technical terms in chapter 2 and chapter 3 respectively of this dissertation). What is needed today is a new kind of poet. The new poets, rooted in place, are re-making the commons through *floreCIMIENTO*. The new poets of the intercultural forest garden commons are masters of bringing the means and the ends together in ways that regenerate nature, feed the people, and express a dignified way of living, dying, and being reborn through service to the 7 Generations. They are not writing in flowering words alone, but in flowering actions, soil making cultures, and forest garden polycultures as well. They are making the connections between the rituals of daily living, regenerative agricultural models, and the sacred Mother Earth.

The challenge to renew and rediscover the beauty and teachings of cacao is not an attempt to make things as they were, but instead to make things as they could be in a intercultural and ecological sense of renewal and rebirth. Culture and nature in this IK sense are inseparable. Savouring cacao and chocolate through these teachings is not just

an act of tasting, smelling, touching, seeing, but also thinking, praying, hoping, and dreaming. When Elder Rebecca Martel asked me what the medicine of cacao was teaching me, she sent me on a journey of reflection and re-discovery looking at cacao and chocolate as IK medicine; this knowledge has become part of my medicine bundle and my duty to share and steward these teachings with humility and through service. If asked to write this difficult chapter on the *mythos* and Indigenous knowledge teachings of cacao again I would write it differently, but I would still celebrate that it is a thoroughly researched work of fiction. Writing down these teachings is to create an iteration of the knowledge, not a definition.

Keeping the symbolism and Oral teachings of the medicine of the cacao intact, and re-discovering and savouring its teachings is not easy. It means a constant growing, renewing, adapting, and leaving behind all at once. It means struggling to find the elusive “knowledge” of the medicine or *materia prima* of the cacao. This knowledge is a “savoir” in the sense of having a taste or a “saveur” or “sabor.” It is this IK in cacao that carries its wisdom, and one must be able to taste it to know it. However, wisdom cannot be pinned down and defined in a textual sense. Like the *mythos* that resists reduction to logos, wisdom resists reduction to formulas. Wisdom in the IK sense is a relationship. IK is not in the object of knowledge it is in the “knowing” and the living relationship with knowledge, that is to say dwelling. Philosophically speaking, the challenges of re-discovering the teachings of cacao, are the same challenges of defining wisdom.

20 years ago, Tom Pruiksma, a member of the Universidad de la Tierra’s Intercultural Seminar on Orality defined wisdom in a deeply poetic and poignant manner.

He said: “Wisdom is saying the right thing, in the right way, at the right time, with the right words, by the right person, to the right person, ready to hear it.” Following this definition of wisdom, I would say that in order to make a eco-revolutionary intercultural chocolate with proper ceremony and wisdom it is about: “making the right chocolate, in the right way, at the right time, with the right ingredients, by the right people, at the right moment, from the right producers, for person who is ready to fully savour, appreciate and share it.” Knowing this, is to appreciate and cultivate a ceremonial relationship to cacao and chocolate in a way that is respectful of its Indigenous wisdom origins.

Yet, just as there is a respectful way to approach this knowledge of the medicine of cacao there are just as many ways to lose and profane the IK of cacao and chocolate. This is the tension and the mystery of holding the means and the ends, the medium and the message together in the rituals, ceremonies, and cultures of cacao as we walk the political geography of cacao today. The danger is that the chocolate in the hands of industrial production becomes just another means to an economic end regardless of the impacts on health and environmental costs. The former is a symbolic product, and the latter is a commodity. The lines that distinguish symbolic vehicles from commodities are not easy to identify and are constantly re-drawn.

After close to two decades of work and research of cacao, I have come to describe this research quest as a type of actionism. An actionist food researcher is someone who puts the rituals and habits, and meanings associated with a regenerative spiritual ecology at the center of their daily habits, thoughts, and actions. The actionist research that will unfold in the next two chapters has encountered many real challenges and problems, and

has sought to put ecological regeneration and social justice back into the rituals of cacao cultivation and chocolate production. A cacao and chocolate actionist is someone searching for the “wisdom” of cacao and chocolate day by day, production by production, ritual by ritual. So be careful when you eat this kind of chocolate because in doing so you become part of a radical political project. Chocolate in this sense is a powerful revolutionary bullet that goes straight to the hearts and minds of those willing to participate in making a world in which many worlds can be embraced. Chocolate in this sense is good for the soil, good for our bodies, good to taste, good for our food communities, and good to think; cacao and chocolate in this sense are truly the foods of the gods.

## Chapter 2: The Spiritual Ecology of the Cacao Forest Garden: Understanding the Regenerative Ecology of the Transition Theory

### Key Research Questions for Chapter 2:

What are the key elements to understanding the Indigenous cacao forest garden?

How is the “Sin Maís no Hay País” campaign and cultural understanding of the Three Sisters milpa a methodological antecedent to this approach to understanding the Three Pillars cacao forest garden milpa?

How are Indigenous cacao forest gardens an expression of a regenerative ecological approach to agriculture? How did they take up into themselves many of the best elements of the Three Sisters milpa garden and combine it to create an abundance best described as a cornucopia?

How are Indigenous cacao forest gardens a symbol and vehicle for both ecological and intercultural regeneration? How can forest gardens foster local resilience and Indigenous subsistence plus food models?

What does it say about cultures and initiatives that plan their agricultural work not on the annual scale, but on the perennial scale of a generation? How are subsistence, economic, ecological, and socio/political elements accounted for in the spiritual ecology of the cacao forest garden?

## Methodological Approach of Chapter 2

The primary methodology of this research is that of intercultural dialogue between Western and Indigenous to North American ways of knowing. Different ways of knowing, or “saberés”<sup>170</sup>, in dialogue are key elements of acting on these proposed intercultural initiatives and imaginative alternatives to current agricultural practices. Without eliminating commerce or utility, the importance of these proposals is not reducible to economics only as in the dominant agricultural paradigm. Exploring the overlaps between agroecology and Indigenous spiritual ecology also means exploring different concepts of commerce and utility while at the same time prioritizing nature and many other beings in the decision-making process of agriculture and the needed paradigm shift.

## Juxtaposing Western Agroecology and Indigenous Spiritual Ecology

Gardens are simultaneously a material and a spiritual undertaking. That’s hard for scientists so fully brainwashed by Cartesian dualism to grasp. “Well how would you know it’s love and not just good soil?” She asks. “Where’s the evidence? What are the key elements for detecting loving behaviour?”<sup>171</sup>

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<sup>170</sup> Gustavo Esteva, “Constructing A Historical Knowledge of Struggle,” Prepared for the Featured Presidential Session “Incorporating Indigenous Knowledges into the Latin American University: A Discussion,” in the 62nd Conference of the Comparative & International Education Society “Re-mapping Global Education: South-North Dialogue, Mexico City, March 25-29, 2018.

<sup>171</sup> Robin Wall Kimmerer, *Braiding Sweetgrass: Indigenous Wisdom, Scientific Knowledge, and the Wisdom of Plants* (Minneapolis: Milkweed Editions, 2015), 123.

As an English, French, and Spanish speaking environmentalist interested in studying regenerative Indigenous cacao forest garden traditions, there are several intercultural conceptual presuppositions that I needed to unpack before jumping into the analysis of Indigenous agricultural models described below as the transition theory. Setting the stage to understand the intercultural difference between Western notions of agroecology of the forest garden and Indigenous notions of spiritual ecology is challenging in the English language. The cultural presuppositions of the English language are rooted in a deep *mythos* of Western concepts that can make it difficult to clearly see the nuances of IK spiritual ecological understandings. As mentioned in chapter 1, seeing the culturally shaped conceptual lenses with which one sees is not a straightforward task. Struggling to establish a critical distance from the culturally shaped matrix is precisely what many English speakers will have to do to explore the differences between agroecology and Indigenous spiritual ecology of the forest garden in an intercultural sense. Intercultural encounters, dialogues, comparisons, and experiential initiation can be transformative for learners and lead to authentic learning that reaches beyond the confines of one's own cultural way of understanding.

A comparison of Creation stories from both Indigenous and Western cultural traditions is an interesting place to begin to examine these cultural presuppositions and different views of the human place in nature. Examining the *mythos* (presuppositions) is notoriously difficult to discuss with analytical tools (*logos*), and some allowance for a degree of simplification is needed for this intercultural thought exercise. This is the challenge of the current introduction seeking to juxtapose and analyze the difference



between spiritual ecology and agroecology. The goal is not to show which is better, but instead to look at the intercultural dialogue that is possible between Indigenous and Western approaches to ecological regeneration:

Western science and technology, while appropriate to the present scale of degradation, is a limited conceptual and methodological tool—it is the “head and hands” of restoration implementation. Native spirituality is the ‘heart’ that guides the head and hands... Cultural survival depends on healthy land and a healthy, responsible, relationship between humans and the land. The traditional caregiving responsibilities which maintained healthy land need to be expanded to include restoration. Ecological restoration is inseparable from the spiritual responsibilities of caregiving and world-renewal.<sup>172</sup>

In methodological terms, this chapter is an intercultural dialogue between the Western environmental concept of agroecology of forest gardens, and the Indigenous concept of the spiritual ecology of forest gardens. We must bring elements of comparison and critical analysis to this process to find a way of operationalizing the forest garden regeneration without reducing it to a purely utilitarian approach. It is not a comparative study in the sense of comparing the pros and cons of each model, but a comparison that attempts to draw inspiration, understandings, and insights from both/and as we struggle to move towards a deepened understanding of the regenerative spiritual ecological beauty of the cacao forest garden.

The forest garden is simultaneously a place of: economics, politics, community, ecology, spirituality, and culture. The ecological regenerative potentials embodied in the sociological pillars of the cacao forest garden are urgently needed in the context of the present human induced climate catastrophes. The reality of the negative impact of human activities on the global climate and communities is a “factual” presupposition that is

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<sup>172</sup> Kimmerer, *Braiding Sweetgrass*, 337.

fundamental to the ecological and intercultural imperatives of this discussion. Accepting this presupposition, leads to the need to explore *both* the agroecology *and* the spiritual ecology of the cacao forest garden. Both agroecological and spiritual ecological approaches are valid, and both are needed.

When the colonists on the Massachusetts shore first saw indigenous gardens, they inferred that the savages did not know how to farm. To their minds a garden meant straight rows of single species, not a three dimensional sprawl of abundance.<sup>173</sup>

The differences between Creation stories in Western and Native American cultures is a unique place to begin seeing the differences between the Western concept of the agroecological approach, and the spiritual ecology of the Indigenous forest gardens. Neither Creation stories are meant to be taken literally or interpreted in a definitive sense. Robin Wall Kimmerer in her amazing intercultural work on ecology, botany, and intercultural regeneration compares the two Creation stories of Western and Indigenous cultures in the following insightful way:

On one side of the world were people whose relationship with the living world was shaped by SkyWoman, who created a garden for the well-being of all. On the other side was another woman with a garden and a tree. But for tasting its fruit she was banished from the garden and the gates clanged shut behind her. That mother of men was made to wander in the wilderness and earn her bread by the sweat of her brow, not by filling her mouth with the sweet juicy fruit that bent the branches low. In order to eat, she was instructed to subdue the wilderness into which she was cast. Same species, same earth, different stories. Like Creation stories everywhere, cosmologies are a source of identity and orientation to the world. They tell us who we are. We are inevitably shaped by them no matter how distant they may be from our consciousness.<sup>174</sup>

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<sup>173</sup> Kimmerer, *Braiding Sweetgrass*, 129.

<sup>174</sup> Kimmerer, *Braiding Sweetgrass*, 7.

The transition theory that emerges from the below analysis is a deeply regenerative approach to agriculture. Moreover, understanding the meaning and the context of the Indigenous inspired cacao forest garden is a critical vehicle that produces ‘values’ that go beyond merely economic and utilitarian approaches to regeneration. On a symbolic level the Indigenous cacao forest garden is a powerful symbol of the intercultural and intra-natural commons. On a practical level the cacao forest garden is a safety belt that connects campesinos to the land and can help to preserve and protect the forest habitats within 20 degrees of latitude<sup>175</sup> of the equator. Below is a quote from a recent article on just this point and opportunity of the cacao forest garden taken from the Caribbean island of Trinidad:

By supporting both biodiversity and livelihoods, traditionally-grown cacao falls within a people and nature framework.<sup>176</sup>

Story and experience have been fundamental to my coming to see and appreciate these cultural differences and overlapping opportunities between Western and Indigenous approaches to ecological regeneration.

## Comparing Creation Stories

Intercultural thinker, poet, and teacher Stephen Jenkinson came to ChocoSol in Toronto in 2014 to give a presentation on the question of: “If the World Tree withered, what is the duty of young people in these times?”

**And Should the World Tree be Withered...** Toronto  
Event Navigation: Saturday, May 10, 2014 (6:30pm–10pm)

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<sup>175</sup> Cacao is almost exclusively within 20 degrees of latitude of the equator.

<sup>176</sup> University of St. Andrews, “How Ethically Sourced Chocolate Can Support Wildlife,” *Phys Org*, April 5, 2021, <https://phys.org/news/2021-04-ethically-sourced-chocolate-wildlife.html>

As without so within, the ancients said. In the West we've lived long enough—too long—apart from all that grants us our life. Wish and hope as we will, consequence must now be our truer companion. This is an evening for grief and wonder, and some prescription scribbled in the sand for what a withered world might now ask of younger folk.

In that presentation, Stephen Jenkinson shared a bit of his interpretation of the Old Testament's "Genesis" and story of Adam and Eve's expulsion from Eden! Essentially, he argued through the analysis of human expulsion from the Garden of Eden limits and shapes the Western imagination and relationship to nature. Like Robin Wall Kimmerer, author of *Braiding Sweetgrass*, Jenkinson argued that these fundamental "myths" shape the Western mental space resulting in a separation from place at a deep cultural level. One is rarely 'aware of myth in this sense'<sup>177</sup> and understanding Original Sin of the Judeo/Christian world in this sense is equivalent to what Vachon describes as a cultural presupposition. A deep challenge and outcome of this concept of expulsion and Original Sin in the Judeo/Christian sense is that it can lead to a fundamental sense of homelessness and struggle against the wilderness. Jenkinson suggested that this story of expulsion from Paradise/Eden continues to cause an alienation from place for the inheritors of this cultural legacy. In other words, the myth of Paradise Lost created a deep disconnection from nature and place in the West. This "myth" of Paradise Lost sits close to the base of the Western cultural narrative that is in desperate need of re-evolution, paradigm shift, and overcoming today. In this sense the West is not wrong or inferior to Indigenous ways

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<sup>177</sup> Do not mythologize Indigenous stories and myths. Instead, one ought to be constantly revisiting, rethinking, and struggling to unpack Indigenous stories in a serious manner, attempting to understand the ways that myth constructs the basis of cultural presuppositions and remains generative without becoming reductionist. Indigenous ways of knowing require researchers to move beyond purely rational and logocentric ways of knowing to include "dwelling" and "dreaming" and being in relationship to the knowing.

of being in the world. However, in the context of climate catastrophe the Western cultures must establish a more regenerative relationship with nature:

Knowing that you love the earth changes you, activates you to defend and protect and celebrate. But when you feel that the earth loves you in return, that feeling transforms the relationship from a one-way street into a sacred bond.<sup>178</sup>

Inspired by Jenkinson's insight, I have come to see that "if we don't deal with this 'withering beauty in the world'" on a deep societal level that tomorrow's hopes and harvests will continue to diminish. The regeneration of the forest gardens of the Americas can be a powerful vehicle, vessel, and symbol of this deep cultural re-orientation. The West is not devoid of these attempts to move beyond utilitarianism or anthropocentric views of nature. However, anthropocentric values of utility and economic value drive the dominant Western agricultural paradigm. This lack of proportion in "using" nature is in part justified in a deep sense because of cultural concepts of fighting and using the wilderness just to survive and is connected to the concept of a hostile nature! At its worst this Western approach to dominating nature reduces the world to a "standing reserve"<sup>179</sup> for human needs. This human-centric view of nature is a clear and present psycho-ontological rot at the root of modern civilizations' environmental paradigm. Scholars like Caroline Merchant have been exploring this Western concept for decades. Merchant author of *The Death of Nature: Women, Ecology, and the Scientific Revolution* (1980) writes:

I am interested in the role of consciousness and symbols about nature, the interaction between productive and reproductive forces in human and nonhuman history, and the place of ecological change in understanding development over

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<sup>178</sup> Kimmerer, *Braiding Sweetgrass*, 125.

<sup>179</sup> Martin Heidegger, "The Question Concerning Technology," in *The Question Concerning Technology and Other Essays* (New York: Garland Publishing, 1977), 17.

time. Studying the past can sometimes suggest guidelines for the future and in this sense environmental history plays a role in policy formation. An analysis of ecological history as the history of an expanding power over nature by social institutions and ideologies, together with identifying possibilities for overcoming an instrumental approach to nature, could lead to a sustainable partnership with the natural world.<sup>180</sup>

Looking across the cultural ocean from Europe, non-Indigenous researchers must distinguish uniquely Indigenous concepts about nature. Unlike Judeo/Christian narratives, Native Americans do not believe in a God that expelled them from Paradise. Indigenous people of the Americas know and deeply connect to the abundance of Mother Earth, and they express this connection through a deep and long connection to place. They are not homeless; they are profoundly at home with Creation stories that go back as many as 50,000 years<sup>181</sup>. Indigenous agricultural models express this regenerative spiritual ecology through the Three Sisters milpa and the Three Pillars forest garden, as discussed in detail below. This intercultural dialogue is not about which approach is better, but it is about re-imagining and unpacking the opportunities of these regenerative agricultural models in the age of climate catastrophe.

There is no simple way of undoing the last 500 years of colonialism, or the power of science and technology to predict, control and dominate nature. Instead, the intercultural imperative challenges intercultural environmental researchers to undertake the deep work of drawing on both of these ecological and culturally shaped approaches. Critical thinkers from both the Western and Indigenous traditions know that the World Trees are withering, and that modern cultures must change or risk extinction. The

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<sup>180</sup> Department of Environmental Science, Policy, and Management, “Carolyn Merchant,” accessed July 22, 2021, <https://ourenvironment.berkeley.edu/people/carolyn-merchant>

<sup>181</sup> Doug Williams, “Anishnabeg Creation Story,” (Speech, 45th Annual Elders and Traditional Peoples Gathering, Trent University, Peterborough, ON, February 2014).

regenerative spiritual ecology of forest gardens is a powerful vessel, and symbolic vehicle for just this kind of regeneration and re-imagination.

The Indigenous cacao forest garden is an expression of a profound alternative to economic or utilitarian centric approaches to agriculture, and yet it does so while carrying forward economic value generating propositions with trees that literally grow money! Regenerating the cacao forest gardens can be a vehicle for moving beyond degenerative supply chains, to regenerative supply chains without reducing the approach to commodity selling and buying. Soil, water, plants, and animals must be brought into a soil matrix of agricultural decision-making that no longer externalizes the costs of production onto nature. It is this externalization of the costs that has made capitalist industrialism profitable at the expense of the health and wellbeing of people and the planet. In the section below this both/and approach suggests that forest gardens not only provide for the “food, fuel, and fibre” needs of humans, but can also be a place for “family, fauna, and flowers” that go beyond the anthropocentric and economic centric approach to environmental regeneration.

## Comparing Cultural Concepts of Production

An excellent way to understand some of these intercultural distinctions between agroecology is through the *Development Dictionary* analysis of the concept of production. Jean Robert's exploration of the term “production” is compared to the Indigenous milpa's productivity. In the context of this intercultural comparison of the concepts of agroecology and spiritual ecology Robert's reflections are especially

enlightening. Furthermore, by juxtaposing the difference between “production” in the Western economic sense of the term, and the more ancient form of “production” in the premodern Western sense allows for a more interesting and nuanced discussion of the concept of “production” that is not overly simplistic or either/or oriented. Robert’s analysis of the maize milpa is especially thoughtful in this respect, he writes:

Experts point out, corn imported from the US grain belt is cheaper than the product of the local milpas because North American grain is produced following the norms of economic productivity. But some Mexicans insist that the *milpa* obeys another logic, and incarnates another kind of life. Further, they know that corn from the *milpa* has a different taste; it has taste, they say.<sup>182</sup>

The *Development Dictionary* is a set of essays from the early ‘90s that sought to deconstruct and analyze the critical stepping stones that could lead beyond 5 decades of the false promises of development. Fundamentally, the *Development Dictionary* is highly critical of modern development that has led to climate collapse and the dismantling of Indigenous cultures. Thinkers like Gustavo Esteva, Jean Robert, and Ivan Illich who write in the *Development Dictionary* see that millenary Indigenous traditions describe clear alternative paths forward beyond critiques to practical and proven alternatives! Similar to the intercultural discussion above between Western concepts of agroecology and Indigenous spiritual ecology, the *Development Dictionary* essays firmly point towards emerging intercultural ways of renewing understanding of key concepts by drawing on inspiration from the best of both traditions and critical understanding. In his essay on “Production” intercultural scholar Jean Robert of Cuernavaca Mexico (Swiss

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<sup>182</sup> Jean Robert, “Production,” in *The Development Dictionary: A Guide to Knowledge as Power*, ed. Wolfgang Sachs (London: Zed Books, 2010), 199–200.



philosopher and architect by training) utilized the old Latin meaning of the word production, *producere*, which literally meant to lead forth, to describe a more ancient and less harmful approach to understanding the concept of production in the context of Mexico Profundo.

Looking at the milpa, I imagined a cycle of moving energies, but I was wrong. Energy is quantitatively conserved and dissipated; not so the peasant's *enjundia*. This is not conserved, nor is it dissipated. It emanates from a man's body and, if the weather and other factors are favourable, is recreated by the plant. It does not circulate in a closed system, but is given and taken. Sometimes it is lost, sometimes given back abundantly – *con creces*. The strength which flows from a man's body calls for other, natural flows or emanations—the warm caressing of the sun, the showers of rain from the sky, like successive anointings of earth and crop. In the milpa, labour is an act of propitiation, not an input.<sup>183</sup>

In particular, Robert applied this pre-modern Western word concept of *producere* (to lead forth, to reveal) in an intercultural sense to the Indigenous milpa. Implicit in Robert's critical understanding is the importance of moving beyond systems thinking and pure scientific or economic reductionism to understand the maize milpa beyond a utilitarian/economic flow of energies, inputs and outputs. To do so he draws upon the best of his Western training and upon the insights gathered from his intercultural encounters with the maize milpa of Mexico profundo. As Robert describes, the productivity of the Three Sisters milpa is not the productivity of industrial production, it is the productivity of spiritual ecology that he describes as "enjundia". The *milpa* as a place is a key building block of the deep civilizational culture of Mexico profundo.<sup>184</sup> The milpa agricultural approach is not a systems approach, though it does have many rigorous and systematic

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<sup>183</sup> Robert, "Production," 201.

<sup>184</sup> "America Profunda," pamphlet from 2003 Coloquio Simposio Foro in Mexico City.

elements embedded in it. The milpa agricultural model is a symbol and a hospitable place out of which a renewed intercultural and regenerative ecological commons can emerge. Jean Robert notes that the destruction of the milpa production system is also tied to the destruction of the commons of Mexico Profundo, and this is part of what the *Development Dictionary* describes as the disaster of development. At the root of this tension, is a fundamental difference between agroecological technical approaches, and Indigenous spiritual ecological approaches, he writes:

The commons—formerly contributing to people’s subsistence—could now be destroyed through enclosure in the name of a productive imperative. For the commons are an obstacle to production since they allow people to subsist independent of producing economic value.<sup>185</sup>

Similar to the maize milpa commons described by Jean Robert above, I have come to see that the cacao forest garden is not just a vehicle for regenerative agriculture, but also a symbol and a vehicle for the regeneration of Indigenous spiritual ecology forest gardens. The cacao forest garden forms a complex interweaving of food, fuel, fibre, fauna, family and flowers and is the cultural projection of uniquely Indigenous concepts of governance and community. In this sense the Indigenous forest garden is a powerful symbol and metaphor for what an intercultural forest garden of politics could look like, What follows below is a technical interpretation and analysis of a regenerative connection between the maize milpa and the cacao forest garden. Like Jean Robert’s above comment of the commons, I do not want to see the Indigenous cacao forest garden commons reduced solely to a technical or economic justification, and that is one of the intercultural challenges of this research.

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<sup>185</sup> “America Profunda,” 213.

## The Emergence of the Cacao Forest Garden

Cacao forest gardens arose as a response to the ecological limits to the maize field garden on a civilizational level, as discussed in Chapter 1 interpretation of the Popol Vuh. Cacao forest gardens as an agricultural model have moved beyond the limitations and challenges of the labour intensive maize field garden. The cacao forest gardens take up the pillars of human need/utility into its structure and simultaneously regenerates wild environments, preserves habitat, and cleanses the waters and the soil. As an agricultural model the Indigenous forest garden goes beyond a labour-intensive annual model of agriculture to a perennial and more permaculture approach to agriculture . The combination of both field and forest garden transformed into a highly regenerative form of agriculture that fostered abundance in a multitude of ways.

## From Sustainable Maize Milpa to Regenerative Cacao Forest Garden

### 1. Without Maize there would be no Cacao

Among fruit, cacao appears to have a particular relationship with maize. As....noted, the seeds inside a cacao pod are arranged much like the kernels of an ear of maize in both form and color, though they are somewhat larger. An early Nahuatl citation in Sahagun refers to cacao seeds “like corn kernels”... This visual observation may have been connected to the symbolism of the decapitated head of the Maize God as an ear of maize inside a cacao pod.<sup>186</sup>

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<sup>186</sup> Grofe, “Recipe for Rebirth,” 4.

Before there was cacao, there was maize. In the *Popol Vuh*, the death of the Maize god provides the materia prima for the Cacao Twins to be conceived both literally and figuratively!



FIGURE 2.1. *Sin Maíz No Hay País*. Photo of book cover by same title photo taken by Michael Sacco.

Before there could be a Three Pillars forest garden milpa, there needed to be a Three Sisters field garden. Similarly, before I could conceive of this lineage and this methodological approach to studying cacao, I needed to participate in and be initiated to the “Sin Maíz No Hay País” campaign and the profound millenary and IK cultures embodied in the maize milpa. The below transition theory suggests that tying together the

field milpa and the forest into a continuous cycle creates moves from a sustainable agriculture to an abundant and regenerative agricultural model.

This research journey began in Mexico in 2003, when upon completing my Master's in Environmental Studies at York University, I returned to Mexico to work with Gustavo Esteva and architect Cesar Anorve in various projects including the launch of the National "Sin Maíz No hay País" Mexican campaign. In 2003, Esteva was spearheading the maize campaign nationally in Mexico at that time! I was fortunate enough to be at the Museo Nacional de Culturas Populares in Mexico City, to see the national launch of the maize exposition that travelled the whole country, and I was fortunate enough to be included in many of the regional workshops, symposia, and Indigenous community trips that Esteva spearheaded in Oaxaca. Our student research team at the Universidad de la Tierra in Oaxaca was charged with documenting, animating, and supporting the regional Oaxaca campaign between 2003–2006! This work on the maize milpa was the groundwork that led me to see the cacao forest gardens of Oaxaca, and Chiapas with a unique set of methodological lenses, and lead to the concept of the milpa transition theory from maize milpa to cacao forest milpa. Maize is not just a crop, or a set of calories. It is the doorway and aperture through which one can more clearly understand Mexico Profundo. Extending these insights to cacao, and the forest garden in an operationalized understanding of the ecologically regenerative potential of these connections is part of the unique contributions of this research on the cacao forest garden milpa and builds upon the complexity and symbolism of the maize campaign

work and research. Below is a recent article on the Mayan milpa cycle that posits a similar theory:

The Maya milpa cycle is an ancient system of land use that sequences from a closed canopy forest to an open field dominated by annual crops (the milpa), to a managed orchard garden, and then back to a closed canopy forest...The resultant forest is a highly managed, anthropogenic landscape that we call the “Maya Forest Garden.” Far more than merely a type of farming, the milpa cycle is the axis of Maya natural resource management...A fundamental misconception of the milpa cycle is that fields are “abandoned” to lie fallow after several years of annual crop cultivation. In reality, in the “high-performance milpa”...fields are never abandoned even when they are forested. Thus, it is more accurate to think of the milpa cycle as a rotation of annuals with successional stages of forest perennials during which all phases receive careful human management.<sup>187</sup>

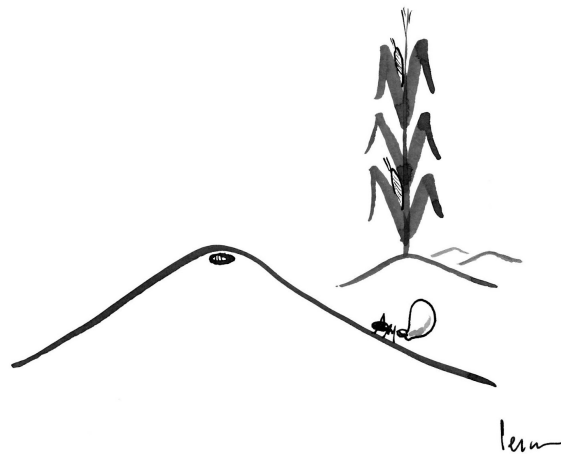


FIGURE 2.2. Ant and Maize. Illustration by Cesar Anorve, 2003. Digital files given to Michael Sacco by artist Cesar Anorve.

## 2. Key Lessons from the Three Sisters Companion Crops

The Three Sisters refers to the companion crop of maize, beans, and pumpkin/squash. The maize is the staple food and leader of the Three Sisters with her

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<sup>187</sup> Ford and Nigh, “Origins of the Mayan Forest Garden.”

golden hairs flowing from atop the cobs. She is abundant, stands proud, and is generous in her abundant contribution per acre of food nutrients. Her more subtle and shy sister, the beans, climb up the maize and uses her structure in a supportive and complimentary way. The beans' leguminous nature contributes to feeding the soil and the maize with the nitrogen they fix in the soil taken from the air. Squash is the athletic sister jumping all around, protecting the earth from the hot sun, protecting her sisters with her prickles from the midnight marauding of racoons, and helping to string together plants with her tendrils so that a great wind cannot easily blow down the corn stalks wrapped in climbing beans. The squash sister is voluptuous, and her flowers and leading tendrils are as tasty as her ripe melons and gourds! However, the Three Sisters is also an allusion to the way that the matriarchs of old, the keepers of the hearth, the human embodiments of the Mother Earth, worked together in Indigenous matrilineal familial plots to nourish their families with the eco-gastronomy food baskets from their Indigenous milpas. They didn't just feed their family, they fed their people, and saved the seeds of milpa wisdom. These food synergies and polycultures are the basis of climate change alternative eco-gastronomy food systems, and are ripe for re-imagining in the 21st Century. Small plot intensive, low emission, resilient, nutritious and complete proteins, combined with simple tools and techniques for processing, are just some of the appropriate characteristics of this Indigenous eco-food basket that fundamentally have changed human civilizations.



FIGURE 2.3. Three Sisters Tortillas. Photo taken by Michael Sacco in Oaxaca City in 2009.

Maize is so much more than a staple food. Maize as a symbol is inseparable from the understanding of what it is to be of Mexico Profundo,<sup>188</sup> and perhaps one of the most successful apertures and doorways for understanding Indigenous food culture in Mexico today. Here is how one Zapotec scholar Melquiades Cruz from the Sierra Norte of Oaxaca phrased it during a Universidad de la Tierra seminar Oaxaca in 2004:

We are the people of maize. The grain is our brother, fundamental to our culture, and our reality today. It is at the heart of our daily lives. It appears without fail in our diet, and we know that it is in most of the products we buy at the tienda. It is the heart of our rural life and an indispensable one in our urban lives. The maize and *comunalidad*<sup>189</sup> are what explain us, they determine our way of thinking, sensing and being. We cannot conceive ourselves without them.<sup>190</sup>

<sup>188</sup> Bonfil Batalla, *México Profundo*.

<sup>189</sup> *Comunalidad*, is a reference to Zapotec Jaime Luna's work on describing the communal character of Zapotec communities of the Sierra Norte of Oaxaca. *Comunalidad*, Luna argues, is not reducible to belonging to a community, it is to be the community in a non-dualistic sense, something that the Spanish language word *comunidad* did not properly express.

<sup>190</sup> "Somos gente de maíz. El grano es hermano nuestro, fundamento de nuestra cultura, realidad de nuestro presente. Está en el centro de nuestra vida cotidiana. Aparece sin falta en nuestra dieta y sabemos que está también presente en la cuarta parte de los productos que adquirimos en las tiendas. Es el corazón de la vida rural y un ingrediente infaltable en la vida urbana. El maíz y la *comunalidad* son lo que nos explica, lo que determina nuestra manera de pensar, de sentir, de ser. No podemos concebirnos sin ellos."



### 3. Re-discovering the Eight Sisters

However, there were in fact more than just three sister crops in pre-Hispanic Mexico. The amaranth, chia, and sunflower plants were three more strong sisters/pillars standing tall in the garden plots of ancient Mesoamerica and contributing to the resilient ecogastronomy of the Indigenous milpa. From the moment they sprouted as delicious micro greens, to the moment their seeds were ready for harvest sunflower, amaranth, and chia were leaders in the field garden of ancient Mexico, and protein pillars in their nutritionally rich diet! Let's not forget about chilies and tomatoes that added spice, sauce, and nutrients but also whose essences could be used in water concentrates to deter insects or slugs from the milpa plants. If chilies and tomato leaves were not enough to protect from pests, the sacred tobacco and marigolds would adorn the milpa field gardens both helping in ceremony, but also keeping pests and pesky browsing deer at bay with their poisonous flower heads and powerful medicine (nicotine) filled leaves. Perhaps it is not even the 8 sisters, but the 12 sisters or 24 sisters. The key here is to see that when we talk about the maize milpa, we are not referring only to a reductionist understanding of the Three Sisters, but to a whole matrix of diversity and pluralism with some key pillars and Indigenous techniques holding the food polycultures together in highly supportive and interconnected ways. This is why it is only logical to look at the way that these brilliant Indigenous techniques and insights were extended to the milpa of the forest garden in such a way as to regenerate the soil and the lands previously used by the maize milpa. Below is a description of this agricultural system from the Mohawk tradition that is

deeply resonant with the Mesoamerican agricultural traditions for reasons that will be discussed later:

When SkyWoman buried her beloved daughter in the earth, the plants that are special gifts to the people sprang from her body. Tobacco grew from her head. From her hair, sweetgrass. Her heart gave us strawberries. From her breasts grew corn, from her belly the squash and we see in her hands the long-fingered clusters of beans.<sup>191</sup>



FIGURE 2.4. Epazote and Squash Flower. Picture of maize tortilla, with squash flower, and epazote “weed” taken in Oaxaca Mexico by Michael Sacco.

#### 4. Celebrating the Edible Weeds of the Maize Milpa Known as Quelites

In Gustavo Esteva’s article on “Celebrating the Otherness of the Other,” in *Decolonizing Methodologies* he celebrated traditional Mexican campesino knowledge systems.<sup>192</sup> Recent articles have talked about how campesinos from rural Mexico could identify up to 500 different kinds of edible weeds.<sup>193</sup> This appreciation of the green hairs

<sup>191</sup> Kimmerer, *Braiding Sweetgrass*, 122.

<sup>192</sup> Gustavo Esteva, “Hosting the Otherness of the Other: The Case of the Green Revolution,” in *Decolonizing Knowledge: From Development to Dialogue*, ed. Frédérique Apffel-Marglin and Stephen A. Marglin (Oxford: Oxford University Press Scholarship Online, 1996). doi:10.1093/acprof:oso/9780198288848.003.0007

<sup>193</sup> “Quelites,” Biodiversidad Mexicana, last modified May 19, 2021, <https://www.biodiversidad.gob.mx/diversidad/alimentos/quelites>

of the sacred mother earth is an example of an Indigenous agricultural technique and knowledge in need of renewal and rediscovery. The translation for *quelite* into English is edible weed, but it is so much more than just an edible weed and so the English word and concept don't do justice to the Indigenous meaning of the word. English speakers must recognize the cultural limitations of translation between the word *quelite* and edible weed. The Western and the Indigenous (of the Americas) agricultural visions are radically Other (in a deep intercultural sense) from one another. Being aware of these differences is the source of finding some of these opportunities like the re-imagining of the role of weeds in a highly sustainable annual cropping garden. *Quelites* in the Indigenous sense are the abundant hair of the sacred Mother Earth if we use the metaphor of the body of Mother Earth to understand the milpa. The *quelites* are hardy and proliferate easily, not unlike the hair of humans. In terms of their role in the milpa it is important to understand how beneficial weeds are 10 times better than noxious weeds like poison ivy from a perspective of the culture and agriculture of the field!

Moreover, culturing the weeds in a plot is analogous to trying to cultivate good gut fauna or a healthy head of hair. Nature abhors a vacuum, so if you don't allow it to fill with goodness slowly and through a selection (weeding and breeding) process, chances are something unhelpful will slip into your garden. In this way Indigenous farmers allowed edible weeds to go to seed, while noxious weeds were eliminated early on in the season, a practice not unlike combing the hair of Mother Earth. This is one of the fundamental gifts of the Indigenous spiritual ecological approach to agriculture that we would describe as a kind of permaculture technique in modern language. In this way, with

every year the milpa needed to be weeded less and less, and more and more foraging and harvesting of the quelites would occur starting in the early Spring with the first sprouts.

Weeds are like the hair of Mother Earth, metaphorically speaking. If you cut, comb, wash, and tend that hair periodically it will flourish and be beautiful, but if you abandon it, and don't comb it, that hair will become dreadlocks and full of knots, and bugs.

Cultivating quelites is about turning a chore into a harvest by changing the lenses of perception from a simplistic concept of agriculture to a polyculture of abundance.

Similarly, the metaphor of a healthy gut or soil biome works with this Indigenous concept of quelites, and as will be seen later also will refer to soil-making/mounding.



FIGURE 2.5. Huitlacoche on Maize. Ben Prowse holding Huitlacoche (corn smut). Photo taken by Michael Sacco in 2012.

## 5. Huitlacoche As Example of Finding Opportunity in IK agricultural knowledges

Until 20 years ago almost every farmer (not including Indigenous Zapotec, Zuni or other Indigenous farmers of the Americas) north of the Rio Grande saw corn smut as a liability.<sup>194</sup> However, Indigenous farmers from Mexico have known that huitlacoche (corn smut) is a delicious and nutritious food! Fleming College ecological restoration graduate Ben Prowse pictured above is holding the funky fungal corn kernels from such a harvest. Interestingly enough, the fungus sells for a much higher price per kilo than the maize to those who appreciate this delicious lysine rich plant symbiosis! Secondly, huitlacoche fungus is part of the diverse approach to using everything the milpa produces. Not only is this specialty crop not a plague, but it is high in protein and lysine. It is especially complimentary in the maize milpa because the one amino acid missing in maize is lysine!<sup>195</sup> Therefore, this fungal “plague” when seen through the lenses of Indigenous agricultural techniques is actually a nutritious and delicious addition to the ecogastronomy and polyculture approach of the milpa! Huitlacoche enhances the diversity, the nutrition, and the pleasure of the gastronomy, but moreover it is another example of the ways that the maize milpa is a source of inspiration and insight for reimagining a more abundant agriculture in the 21st Century. Below is a caricature by

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<sup>194</sup> Martha Mendoza, “Corn Smut? Tastes Great and Good for You, Too!” *Seattle Times*, April 27, 2010, <https://www.seattletimes.com/business/corn-smut-tastes-great-and-good-for-you-too/>

<sup>195</sup> “Corn Smut,” Wikipedia, last modified October 12, 2021, [https://en.wikipedia.org/wiki/Corn\\_smut#Industrial\\_biotechnology](https://en.wikipedia.org/wiki/Corn_smut#Industrial_biotechnology)

Cesar Anorve depicting a pop-up food stall in Mexico serving quelites and huitlacoche as the main attraction of the Three Sististers menu.



FIGURE 2.6. Maize Market Stand . Illustration by Cesar Anorve, 2003. Digital file given to Michael Sacco.

## 6. Eco-gastronomy of Indigenous Maize Milpa

The term eco-gastronomy arose out of the Slow Food movement!<sup>196</sup> Originally Slow Food was about the culture of the convivial table and food as being about so much more than quickly stuffing calories into our bodies. That definition of the Slow food movement, which was a European reaction to industrial cheap fast food, expanded to

<sup>196</sup> “Slow Food Terminology,” Slow Food, accessed January 21, 2020, <https://www.slowfood.com/about-us/slow-food-terminology/>

describe foods that were “good, clean and fair!” To be “good, clean, and fair” meant that the quality of “life and the health of the planet” needed to be included in that definition. Traditional peasant gastronomies from around the world tended to be more ecologically rooted in local sustainable and seasonal traditions. This is true for Europe as it is for the Americas, where these seasonal crops were combined with the other food staples like beans, corn, and squash that could be harvested and stored to create a plethora and cornucopia of delicious foods. Only in the last 50 years has most of the food that a modern industrial urban dweller eats comes from a distance greater than 100 km and this dislocation and industrialization of the food system has had negative impacts on the health of the eaters, the workers, and the environment. With this cheap fast food that is cheaply mass produced in distant mega-factory-farms has come the destruction of local farms, food cultures, and Indigenous to place food traditions.

In the case of maize, local consumers replaced local maize with cheaper imports of lesser quality for example and this had a disastrous effect on the campesino economy of Mexico. Local handmade corn tortillas were replaced with industrially made tortillas of lesser nutritional and ecological quality. Defending these local food traditions is what gave rise to Slow Food and the Sin Maíz No Hay País food movements, both of which I would describe as not merely reactive social movements around food, but as proactive and culturally regenerative social movements celebrating the complex relationships between food to: community, social justice, health, and climate resiliance. Eating locally and regionally, supports the culture and ecogastronomy of the place that starts with the local farmers! Like Mexican milpas, Italian and French market gardens were a beautiful

European expression of this eco-gastronomy flourishing in the 19th and 20th century.

Here is one concise definition of the term: “Ecogastronomy links food and humans, while bringing attention to the responsibility that all people have for the health and well-being of our food ways.”<sup>197</sup>



FIGURE 2.7. Turkey Tamales. Turkey tamales banana leaf basket in the Lacandón jungle. Photo taken by Michael Sacco in December 2008.

However, Indigenous peoples of the America’s had a profoundly unique approach to eco-gastronomy rooted in the spiritual ecological traditions of the Americas. Below are tamales that I made in a Tojolobal household one Christmas in the Lacandón jungle. The filling is locally grown maize by the family. Then we killed a turkey from the back patio. We harvested cloves, allspice, and achiote from the forest garden, and used some onions and herbs from the kitchen garden. The steamed turkey meat was shredded and used in the “recado” or filling of the tamales, and the rest was used in a soup. Finally, we

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<sup>197</sup> Anthony Triolo, “What is Ecogastronomy,” Ecogastronomy, 2020, <https://ecogastronomy.com>  
 “Ecogastronomy,” Wikipedia, last modified November 17, 2021,  
<https://en.wikipedia.org/wiki/Ecogastronomy>



harvested the banana leaves from the side of the household lot and cured them gently over a fire. We steamed the tamales which were then stored for days in a cool spot, and not in a refrigerator. There were no food miles, no food waste, and no single use plastics at all in this traditional eco-gastronomic meal. This Christmas meal was a deep Indigenous expression of what the term eco-gastronomy could mean, and still does mean in many isolated foodsheds where cheap food imports have not destroyed the local food traditions.

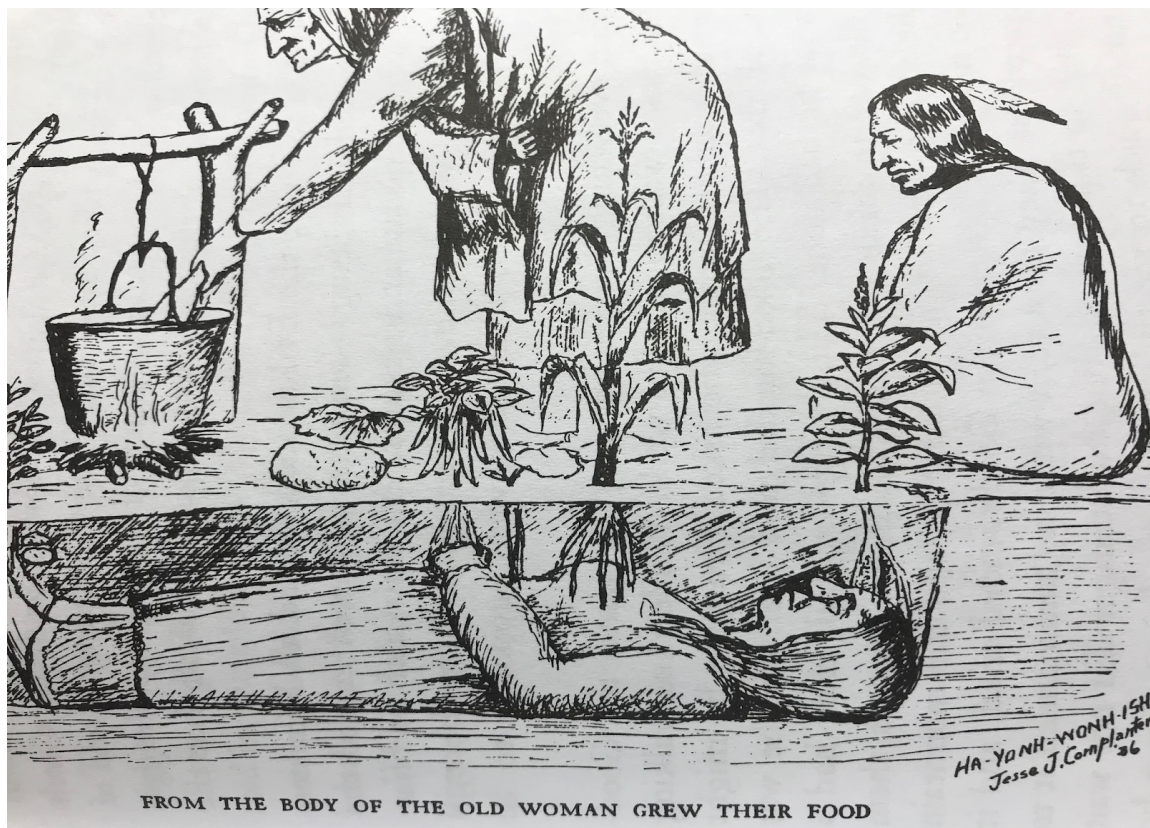


FIGURE 2.8. Mother Earth. Jesse Cornplanter draws his rendering of SkyWoman's daughter's mound transforming into the three Sisters and sacred tobacco, which is slightly different from Tom Porter's because the Corn emerges from the heart and the Tobacco from the head.<sup>198</sup>

<sup>198</sup> Jesse J. Cornplanter, old Mohawk knowledge keeper. Found this book and picture at Tom Porter's native craft shop in Canajoharie, New York.

## 7. Soil Mounding as an Expression Sustainability in the Maize Milpa

The Mohawk Creation story as it is retold by Tom Porter in his writings, has clarified and added to my understanding of the Mesoamerican field and forest gardens. However, this clarification and connection to the Mayan and Aztec milpa gardens is not the result of chance. According to Tom Porter the Mohawk elders tell of a time when they came from a land far to the South. Mohawk elders, according to him, talk about how they are “first cousins with the Mayans and Aztecs.”<sup>199</sup> Below is a picture I took of the wise and hilarious Tom Porter laughing with a smiling Don McCaskill during an informal research and social visit to Tom’s home in upstate New York in 2018. I presented Tom with dried sacred tobacco and sweetgrass from my garden. I also gifted him living tobacco and sweetgrass plants in a birchbark basket as a sign of respect and gratitude. That short visit turned out to be very transformative and brought 20 years of research home for me as an intercultural researcher, as will be discussed in the concluding thoughts section of this dissertation. Because of Tom Porter’s close friendship and collaboration with Robert Vachon his insights and Mohawk spiritual ecological understanding have formed the bedrock of this intercultural research for more than two decades. The opportunity to check in with Tom Porter and our mutual friend Don McCaskill was a once in a lifetime privilege and honour.

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<sup>199</sup> Porter (Sakokwenionkwas), *And Grandma Said*, 59.



FIGURE 2.9. Tom Porter and Don McCasKill. Visit with Tom Porter and Don McCasKill. Photo taken by Michael Sacco.

Similarly, on a visit to the Mohawk territory of Akwesasne in 2011, I first noticed and asked about this similarity between Mexican and Mohawk traditions. Our Trent IK class was visiting the Long House in Akwesasne with our professor and Mohawk Faithkeeper Skahendowneh Swamp. When I commented on the similarity, one of the Mohawk dancers quickly replied: "we are the keepers of the Great Law, and the Mayans are the keepers of the Great Time." Below is an excerpt from Tom Porter's book *And Grandma Said* where he talks about the death of SkyWoman's daughter who becomes Mother Earth, and of the origin of the Three Sisters mound garden:

And her daughter was laying there on the ground. So the mother took a container...and she went and got dirt. She carried it back and she began to put the dirt on her daughter. She began to cover her body. And then she got some more.

She kept on doing that until the dirt piled up on top of the daughter. She didn't bury her under the ground. She put dirt on top, like a mound. That's different. This is when we began calling it "our Mother the Earth" because this is the first time these people became part of the earth. . . . And where her head was in the mound, there appeared above it one plant. It grew there. That was corn. And right next to it came what they call squash, pumpkins, watermelons, cantaloupes, and those kinds of things. They have vines on them. And a third one that started growing right there could wrap itself around the corn. And that was the beans. In Iroquois country you'll always hear those three called the Three Sisters, Ahsen Nkontateno:sen. . . . And so that was the Creator's gift and our Mother's gift to give sustenance to future generations who would be coming from there. And they would keep those seeds that came from our Mother's head, from Mother's Earth's grave. And those three kinds of food are what we're going to be the main foundation of our diet, our fundamental sustenance for the future. Directly above where her heart was in this mound grew another plant called plantoien'kwa'on:we. That's sacred tobacco. And the Creator said, "I give that to you as a special gift through your mother." That's why it came from her heart. And that's where prayer has to come from—is the heart. . . . And then the other parts of Mother Earth's body grow wild turnips, wild onions, wild cabbage, and all kinds of things that we can use to eat. So that's why even the milkweed that grows out there, when they're young, they're good to cook up. Different things out there that people think are weeds are good food for you. Because they came from her body.<sup>200</sup>

It is important to understand what elder Tom Porter is sharing both literally and symbolically in the above quote. For example, I have heard in other stories slightly different versions of how the sacred tobacco grew from the head and the Three Sisters from the heart and body, and Robin Wall Kimmerer tells another slightly different version of the plants that sprung from SkyWoman's daughter's body in her book *Braiding Sweetgrass*. However, in all those Indigenous teaching versions of the story it is clear to this researcher that the "dirt" is not something trivial, something inert or dead. In fact, the Mohawk Creation story elevates that bit of "dirt" (or sand from the bottom of the deep sea that the muskrat gives to SkyWoman) to one of the most "generative" and

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<sup>200</sup> Porter (Sakokwenionkwas), *And Grandma Said*, 59.

“nourishing” and “sacred” elements of all Creation.<sup>201</sup> Just as SkyWoman’s daughter’s death allowed her to transform into Mother Earth; similarly, the death of the Maize God as told in the *Popol Vuh*, shows how the death of Three Sisters milpa, gave rise to the rebirth and renewal of the Three Pillars forest garden.

The Mohawk’s keeping of the Great Law and its stories, is a powerful window and doorway to find ways of renewing and participating in the regenerating of these spiritual ecological field and forest garden traditions that stretch from South to North in the Americas. These Mohawk teachings shed light and understanding from different perspectives on the Mesoamerican milpa traditions and vice versa. The story of how Mother Earth came to be called such, is a story that reveals the sacredness of soil and the importance of making soil mounds that sustain the maize milpa.

## 8.Sustaining Soil Fertility Through Mound Culture

Soil fertility is a limiting factor for the productivity of the maize milpa. What this means is that a Three Sisters garden will have diminishing returns if the soil is not fertilized regularly or left fallow for years. This may seem like common sense but remember that the Three Sisters is a very well-balanced polyculture in terms of beans putting nitrogen in the soil, and squash shading the soil from the sun, and the maize producing abundantly in tightly packed kernels on the cob. However, even despite these and other benefits, the act of taking the maize, beans, and squash nutrients out of the field year after year, depletes the soil over time. The Three Sisters are a highly sustainable and

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<sup>201</sup> Porter (Sakokwenionkwas), *And Grandma Said*, 52.

abundant milpa agriculture system, but they extract a great toll from the soil with every harvest. Therefore, mounding techniques emerged from understanding the effects of this harvest on the soil, and resulted in the development of mounding techniques.

Furthermore, the mounds favoured the crops grown on the higher mounds, while at the same time nourishing them better. The mounds themselves were most certainly made from ingredients that would help enrich the soil, whether it was a rotting stump, buried corpse, or bottom-feeding fish.<sup>202</sup> The soil mounds were not just lumps, but complex cultural techniques and soil making recipes. The emphasis on the importance of the soil and not just the seed is an important contribution of Indigenous peoples of the Americas to the global discourse on botanical cultivars early in the Columbian exchange.

In the book, *1491: New Revelations of the Americas Before Columbus*, author Charles Mann speaks about how prior to first contact with Indigenous agriculture European farmers simply broadcast the seeds on the soil top. It was only through learning from Indigenous peoples that the concept of planting the seed in fertile soil as a concept and approach took off in Europe.<sup>203</sup> When SkyWoman buried her daughter in the dirt of the Mohawk Creation story, that land became the sacred Mother Earth. Her daughter's body both literally, symbolically, and spiritually speaking became the embodiment of this connection of life, death, and rebirth through the soil, and symbolized the beneficent and loving relationship between humans and the sacred loving Mother Earth.

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<sup>202</sup> On our visit to Tom Porter, he shared that as a young person growing up in Akwesasne, they used the bottom feeders as the basis for their soil mounds, but that they ate the more delicious fish!

<sup>203</sup> Mann, *1491*.

The abundance of these maize milpa gardens resulted in the harvesting and removal of nutrients from the land. The land needed yearly renewal, just as the waste and by-products of culture needed a place to be downcycled in the form of added nutrients. This mounding approach helped in the overall cultural sustainability of the annually planted Three Sisters gardens. Soil mounding on fish, on compost, rotting wood or rotting corpses (see above drawing from Jesse Cornplanter), and the use of inputs like ash, charcoal, and calcined lime from bone, shell, stones, were part of the soil mounding techniques. Yet, mounding in the maize milpa was a labour-intensive soil-making work that needed yearly travail. Without steel or mechanized tools this form of highly sustainable agriculture had inherent limits to growth and required continued cutting of new lands to feed the growing populations of Mesoamerica. This resulted not just in the problem of annually intensive labour and transportation but also deforestation and drought which arises out of deforestation of vast areas. As in other civilizations around the world, the deforested areas put environmental pressures on the region, especially in the population centers like Mesoamerica that had millions of inhabitants in tightly woven urban centers. As argued/interpreted from the *Popol Vuh* in Chapter 1 of this dissertation, this collapse of the agricultural model is perhaps what gave rise to the death of the Maize God and his twin brother in an epochal sense at the hands of the Lords of Xibalba. This ecological deterioration from deforestation and soil degradation (perhaps exacerbated by natural climatic change cycles) in an epochal sense gave rise to the power of the pestilential lords of Xibalba who represented scarcity, war, disease, malnutrition, and suffering. Xibalba in this epochal interpretation is associated with the scarcity and disease

that come with environmental degradation, climate change, and overpopulation. In the epochal sense, the maize paradigm of civilizational growth hit its limits to growth. This epochal limit to growth and shift discussed in Chapter 1 of this dissertation is not unlike the current climate collapse and crisis facing modern capitalist production systems, with one major difference. Today's climate collapse is on a global scale as human activity reaches a monstrous new scale of impact.

Today, once again in the age of climate collapse, forest gardens may once again become a pivotal and strategic point in regenerating and renewing our agriculture. Below, Cesar Anorve's caricature of the maize cob baby, expresses the deep connection between, seed, soil, humans, and food.

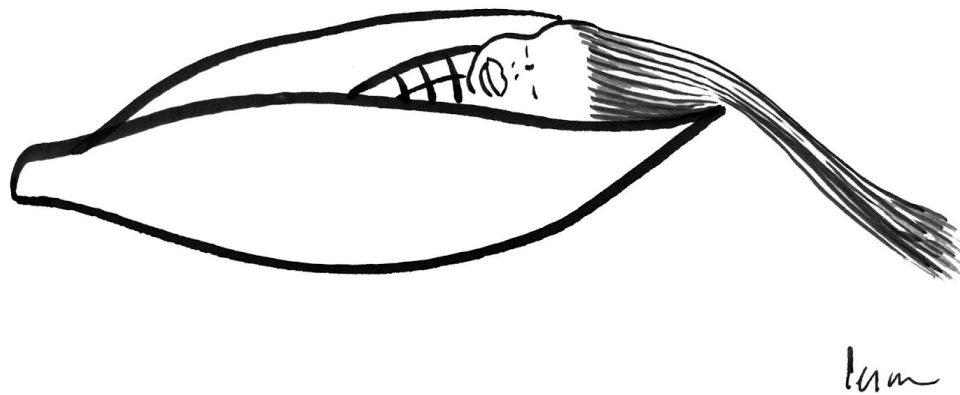


FIGURE 2.10. Corn Cob Baby. Illustration by Cesar Anorve, 2003. Digital file given to Michael Sacco.

## 9. Cultural Use of Fire

The land gives us so many gifts; fire is a way we can give back. In modern times, the public thinks fire is only destructive, but they've forgotten, or simply never knew, how people used fire as a creative force. The fire stick was like a paintbrush on the landscape. Touch it here in a small dab and you've made a



green meadow for elk. A light scatter there burns off the brush so the oaks make more acorns. Stipple it under the canopy and it thins the stand to prevent catastrophic fire. Draw fire rushes along the creek and next spring it's a thick stand of yellow willows. A wash over a grassy meadow turns it blue with camas. To make blueberries, let the paint dry for a few years and repeat. Our people were given the responsibility to use fire to make things beautiful and productive—it was our art and our science.<sup>204</sup>

Indigenous peoples of Mesoamerica deeply understood that fire was not just a destructive force, but a gift, and a transformative tool and technique. The process of nixtamalization of maize is a key point; for nixtamal shows the depth of understanding of alkaline ash and calcined lime had on transforming the digestibility of maize by removing the hard outer pericarp of the maize kernels. Without the use of fire and oxygen deprived fire pits, calcined lime would have been unthinkable for first peoples and their most important food would have been much less digestible. Furthermore, preliminary research indicates an awareness amongst pre-Hispanic peoples that ash, charcoal, and calcined lime were important tools in the cradle-to-cradle Indigenous cultural approach of transforming waste back into soil. Fire was a technique not only for clearing the land, for renewing the soil, but also for making the charcoal and calcined lime used in soil-making techniques.

The Mohawk Creation story tells of how when maize was first given, it did not need to be cooked with lye to be digestible. It was the Trickster Twin who made this happen, and as a result lying the corn meant cooking it with ash or alkaline water to make it more digestible and nourishing. Moreover, what that teaching shows, is that the Mohawk people, like the Indigenous peoples of Mesoamerica understood the important

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<sup>204</sup> Kimmerer, *Braiding Sweetgrass*, 363.

role that alkaline ash, or calcined lime from stone, shell, or bone played not only in unlocking the nutrients of maize for the human body, but also that they had a sophisticated understanding of the properties of calcined lime. To this day in Mexico clay comals (clay cooktops) of the hearth are made more resistant to stains, cracking, and erosion, when they are continuously resealed with alkaline white ‘bone water’ made from dissolving calcined lime in water. This same understanding was central to the waterproofing and construction of great pyramids of the Maya and the Teotihuacanos. They used the white washing as a way to fill in the cracks in the stone and protect it from water erosion.

However, it is very important to understand the cultural way households and communities of the First Peoples of Turtle Island produced the ash and calcined lime for their cooking and for sealing clay and stone surfaces. It is also important to remember that they did not have matches or lighters. Putting these two points together and working with many different Indigenous communities in Mexico to see how nixtamalization of corn was made from the ashes produced in the hearth, lead me to see that the daily morning ritual of unburying the embers of the night before and blowing on them could create the valuable by-products of ash, charcoal, and calcined lime from the bones and shells of yesterday’s ashes and waste. Midday the fire was fed, so that the people could be fed. In the afternoon the hearth was where the family gathered to keep warm and eat. At night the fire was put to bed, by burying it in the ashes and most likely some dirt in many instances. Perhaps the bones and waste shell were occasionally added to the fire during its final stages of the day, and then buried with the fire, so that right there out of the

household waste, the elements needed for lysing the corn, or sealing the pottery were created at the same time as transforming the household waste into something useful through the fingers of Indigenous customs. Furthermore, charcoal would be created by this process. One theory that this research has suggested needs more exploration: out of this daily fire, food, and waste cycles, the culture of creating biochar or *terra preta* emerged through the fingers and hands of Indigenous household soil-making cultures. The theory which needs more exploration is that ash, charcoal, and calcined lime from bone shell or stone were combined to help break down and dry out humanure and other organic compost in the soil-making cultures of the peoples of the Americas. This allowed the eventual emergence of large urban centers like Tenochtitlan that did not suffer from the problems of human waste and the associated diseases of unsanitary cultures. However, research in the Amazon jungles study of *terra preta* sights suggests a close connection between charcoal and the compost piles of villages,<sup>205</sup> Just as research into the waste disposal methods of Tenochtitlan and its chinampa systems does as well.<sup>206</sup> In this sense fire was not just fire, but also helped to create the building blocks for other key food processing and waste processing and building materials.

Furthermore, fire, ash, and charcoal were used culturally by first peoples to clear grasslands, and forests for cultivation. This use of fire as a tool and technique, was and still is an important part of the Indigenous traditions of the Americas. Charles Mann's excellent treatise *1491* discusses this Indigenous cultural use of fire in greater depth, as

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<sup>205</sup> BBC Science & nature, "The Secret of El Dorado: Programme Summary," accessed July 22, 2012, <https://www.bbc.co.uk/science/horizon/2002/eldorado.shtml>

<sup>206</sup> Ashenburg, "Clean Aztecs, Dirty Spaniards."

does the classic text *Cultivating a Landscape of Peace*, where it compares the Iroquois usage of fire to Mayan swidden agriculture. In chapter 3 of this dissertation this knowledge and research questions are transformed into a soil making technique called caca carbon, which transforms the disposal of humanure into a carbon and nitrogen regenerative soil amendment.

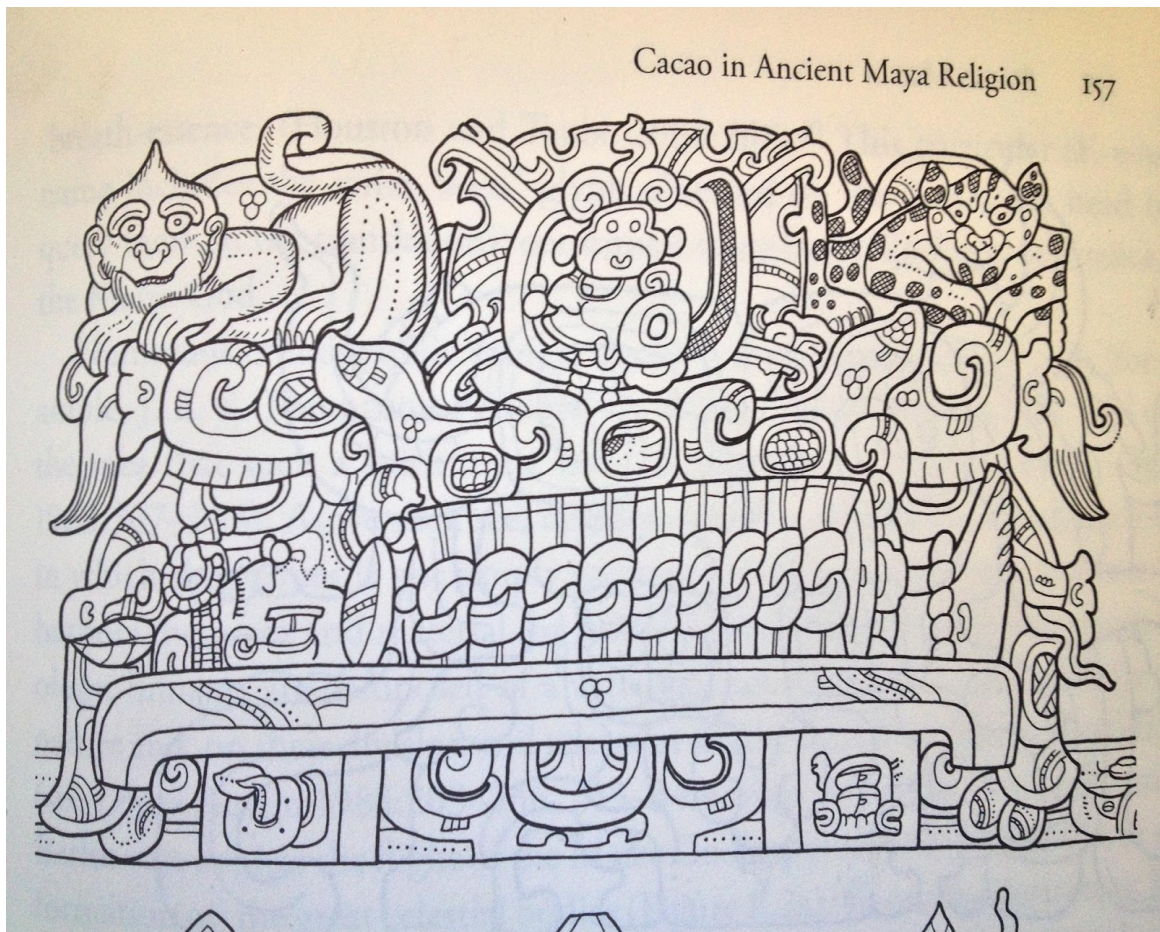


FIGURE 2.11. Maize God's Funeral. Above pictured is the funeral of the Maize God from Chocolate in Mesoamerica which originally adorned one half of the side of a Mayan ceramic vase.

## 10. Transition Theory: From Forest, to Maize Field, to Cacao Forest Garden!

The milpa system of the present-day Lacandón, consists in cutting down the primary or secondary tropical rainforest and then burning the stubble and plant selected species in the milpas. They plant and harvest their milpas for two to five consecutive years, but before abandoning the milpa they plant different species of trees which have economic value, this allows the reestablishment of the vegetation with an “enriched” rainforest (Baer and Merrield 1981: 177-209; Nations and Nigh 1980: 8). The central idea which can be gleaned from the agricultural system of the modern Lacandón, is the slow replacement of the non-economic species for economic ones, always trying to preserve the ecological balance of the tropical forest ecosystem. The present-day Lacandón milpas are characterized by the large diversity of species under cultivation, because, in addition to planting maize, beans and squash, they grow several different types of roots and tubers, fruit trees, cacao, annatto, cotton, tobacco, among many other species<sup>207</sup>

As the above Mayan glyph shows, taken from the side of an ancient pottery vase, the Maize God eventually must die, and as suggested from the above citation, the milpa of maize must eventually be transformed to renew the soil and cultivate the ecological abundance of the rainforest. In the above glyph, presiding over the death of the Maize god are the monkey, the jaguar, and the rain god who, I believe, represent and heralds the forest gardens. Similarly, in the *Popol Vuh* the first set of Hero Twins are defeated and killed. Simply put, the Maize god must die, just as the maize milpa must die to be transformed, regenerated, and eventually reborn. This process of the death of the Maize god, the lineage of the maize god being transformed into the Cacao Twins, the regeneration of the best of the field garden techniques and teachings of maize, and finally

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<sup>207</sup> Laura Caso Barrera and Mario F. Aliphath, “Cacao, Vanilla and Annatto: Three Production and Exchange Systems in the Southern Maya Lowlands, XVI-XVII Centuries,” *Journal of Latin American Geography* 5, (2006): 38.

the mastering of life, service, self-sacrifice, death, and rebirth in both agricultural and civilizational ways referred here to as spiritual ecological transition theory!

The death of the Maize god is the necessary precursor to the reemergence of the Cacao Twins of the forest garden. The Cacao Twins' life journey as told in the *Popol Vuh* discussed at length in Chapter 1 shows how they take up the tools, techniques, and teachings of their father and uncle, winning the heart of their grandmother in the process. It shows how they defeat the lords of Xibalba, but recognizes that they cannot truly defeat the Lords of Death, unless they embrace their own death through service, self-sacrifice, and death and rebirth. The death and transformation from maize milpa to cacao forest garden milpa is one example of this rebirth, just as the fire's death and transformation to ash, charcoal, and calcined lime for transforming waste is another example of death and rebirth through regenerative techniques and processes of using fire.

Eventually, the Mayan teachings go so far as to show how the Cacao Twins are able to bring their father the Maize god back to life. The Maize god emerges from the soil of Turtle Island in the Mayan glyph below.



FIGURE 2.12. Maize God Resurrected.<sup>208</sup>

Buried in the dirt of this myth/story and the above glyph are teachings about the renewal of the field garden through the forest garden. The Cacao Twins revive the soil and the land for the Maize God to re-emerge and be renewed. The Indigenous teachings buried in these stories are the content of Chapter 1 of this dissertation. In Chapter 2, the goal is to explore the ways of operationalizing these teachings into a regenerative transition theory approach to regenerative agricultures of field and forest gardens. The transition theory suggests an evolutionary and temporal connection between the removal of the forest to plant the Three Sisters field garden, the maturation and death of the maize milpa, and the regeneration of the soil and the community of all beings through the emergence of a cacao forest garden milpa for the seven generations to come.

In the Maya lowlands, under the milpa system, a plot of land is cleared to plant maize associated with corn-beans-squash and tubers. However, many arboreal species are not destroyed when the original vegetation is being cleared. Some trees are protected and even encouraged to grow thus giving these species an ecological advantage in the succession process which is being established when the milpa is abandoned after two or three years of agricultural production.<sup>209</sup>

As sustainable as planting companion crops of maize, beans, and squash can be when done properly, it also removes a lot of nutrients from the soil and field, and this is one dimension of how this researcher interprets the story of the death of the maize god. Not just that, but deforestation when undertaken for millennia would eventually pose a limit to growth to burgeoning Indigenous populations in Mesoamerica. The transition theory suggests a deeper connection between the Three Sisters and the Three Pillars field and

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<sup>208</sup> H. E. M. Braakhuis, “The Tonsured Maize God and Chicome-Xochitl as Maize Bringers and Culture Heroes: A Gulf Coast Perspective,” *Wayeb Notes* 32 (2009), [https://www.wayeb.org/notes/wayeb\\_notes0032.pdf](https://www.wayeb.org/notes/wayeb_notes0032.pdf)

<sup>209</sup> Caso Barrera and Aliphat, “Cacao, Vanilla and Annatto,” 38.

forest milpas; as argued in Chapter 1 of this dissertation, the former proceeded to re-evolve and regenerate into the latter. In the below quote agro biologists analyze the benefits of this transition theory. In the image below see a Mayan glyph depicting the emergence of the Three Pillars from the corpse/body of the Maize god.

The management of the milpa cycle is an essential tool for the creation and maintenance of the Maya forest garden landscape over time and across space. The cycle is initiated in closed-canopy forest when a modest 2–5 hectare clearing is made with cutting tools and fire, selecting for economic species and encouraging the resprouting of other species. In the following several years, annual cropping is practiced and fields are visually dominated by maize but also include many types of companion crops (Nations and Nigh 1980; Teran et al. 1998). As a cultivated field, the milpa has its own ecology of herbs, tubers, and plants that deter pests of the main crops, enhance soil nutrients, and maintain moisture in the soil (Gleissman et al. 1981). Even before this phase of annual crops is over, the selection of trees and bushes for the woodland stages begins. Human intervention is most intense during the early years of regrowth. Ecological studies have shown that events in these early stages largely determine the rate and floral composition of the later phases of succession (Chazdon 2008; Nigh 2008). Through enrichment, planting and selection of woody species during the initial phases of the milpa, the Maya farmers shape the forest recovery to their needs.<sup>210</sup>

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<sup>210</sup>Ford and Nigh, “Origins of the Mayan Forest Garden.”



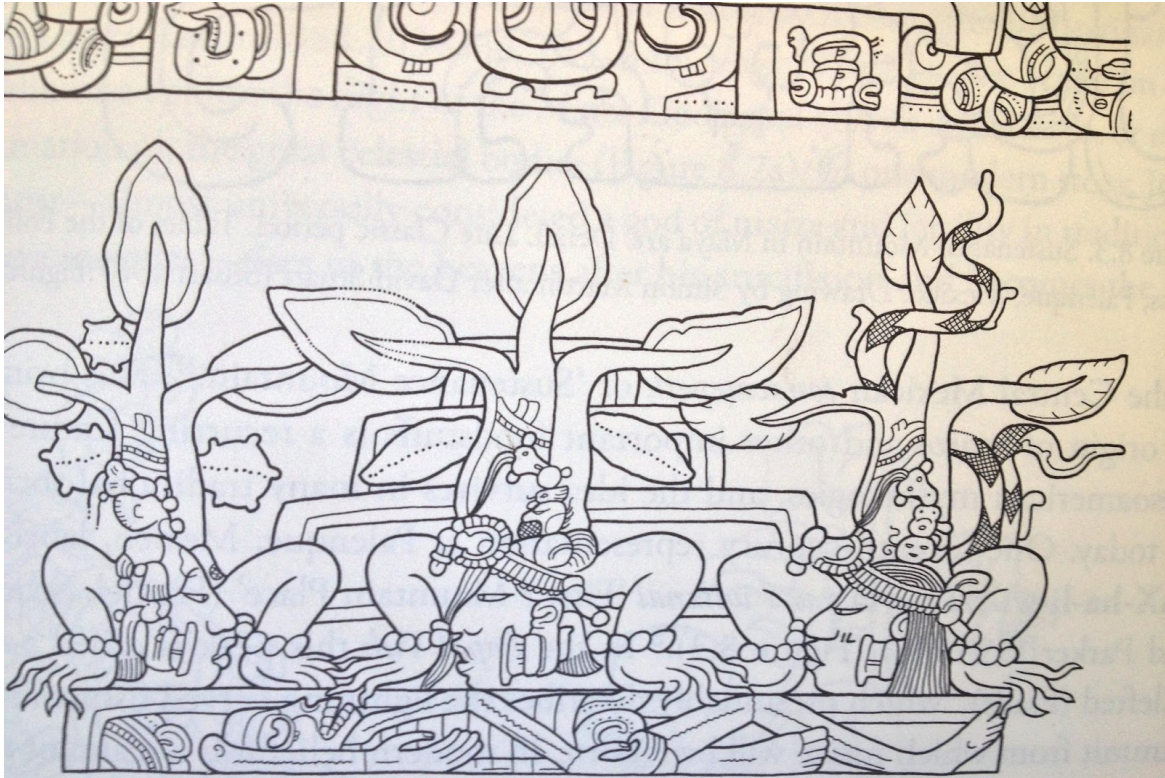


Figure 8.2. The burial and transformation of the Maize God within Sustenance Mountain. The dead god lies on a bier. His body is reduced to a skeleton surmounted by anthro-

FIGURE 2.13. Maize God Transformed. Mayan glyph depicting the emergence of the Three Pillars from the corpse/body of the Maize god.<sup>211</sup>

In 2006/7/8 I had the opportunity to cultivate a bit of marginal land on the edge of an urban ravine in Toronto, Canada. It was in this context that I began to see and imagine the potential for an intercropping between field and forest. Having walked thousands of kilometres of forest gardens and maize plots in Oaxaca and Chiapas Mexico in traditional Indigenous communities, a connection began to emerge between forest garden and field garden. One moment on the mountainside of the Chinantla region of Oaxaca in particular stands out, where the swidden agriculture gave way to a hillside of maize and beans, but a few avocado trees were seen dotting the hillside and interacting with the forest perimeter. At that moment in 2008 a lightbulb went on in my brain. Doing the work, digging one's fingers in the soil, and working with the plants themselves always yields deeper understanding than simply observing or reading.

<sup>211</sup> Martin, "Cacao in Ancient Maya Religion," 157.



FIGURE 2.14. Urban Maize Milpa. Urban maize milpa, Toronto 2009. Photo by Jessica Nordahl.

## 11. Three Pillars of the Forest Garden: Cacao, Vanilla and Achiote

...the Maya developed an extremely sophisticated intercropping system that allowed them to jointly cultivate cacao, vanilla and achiote. The first two are plants in the shade, while the third is a type of bush that needs full sun as it neither flowers nor bears fruit in the shade. The intercropping of shade-loving and sun-loving plant species implies an advanced handling of the vegetations' structure, composition and function from an agro environmental point of view.<sup>212</sup>

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<sup>212</sup> Fernández and Barrera, "La Tríada del Chocolate," 89.

Like the Three Sisters, the Three Pillars forest milpa plants were mutually beneficial companion crops that helped each other grow and develop and replenish the soil. The cacao, like the maize, was the leader of the three. However, the odourless cacao flowers required specialized small midges to be successfully pollinated. Therefore, the vanilla orchids climbing the cacao trees and planted alongside in forest gardens as vines, helped to attract the pollinators. Furthermore, both vanilla and cacao are shade-loving plants. This technique allowed for a highly intensive cultivation in the shade of other forest garden trees/pillars. The achiote, like the squash, helped to protect the soil with shade and leafy matter, while also providing shade for the cacao. The bright red flowers of the achiote attracted pollinators, and its leaves, and seeds had a slight allopathic effect that could keep some pests at bay. Achiote trees were traditionally planted at the edge of the forest gardens to keep pests and sunlight in check. In fact, in some instances the cup-like canopy of the achiote has even been used as a shade for cacao seedlings.



FIGURE 2.15. Cacao Twins. Calabash gourd with mamey, cacao, and jaguar pods surrounded by vanilla orchid. Photo by Michael Sacco in the Chinantla region of Oaxaca Mexico in 2018.

In terms of gastronomy, the alkaline vanilla complimented the acidic cacao and could be cured and stored. Whereas the red achiote provided an appealing red oil to colour the cacao and add a pleasing but subtle flavour to the chocolate. The achiote is easy to dry and store. Combining the Three Pillars with the Three Sisters was not only ecologically regenerative, not only nutritionally complimentary, but it was also an example of spiritual ecology that created abundance and could be described as a cornucopia! As the below research conducted in the early part of the 21st century by

Mexican researchers into Indigenous forest milpas of cacao, vanilla, and achiote shows, this knowledge is poised for renewal and regeneration.

K'iche in Verapaz also planted achiote bushes around their cacao tree plantations. Our informants pointed out that there are three species (of cacao) differentiated by the color of their husks—red, white, or green—which can be warty or smooth. They say they grow these three crops because they were taught to do so by their parents in order to make their “chocolate beverage.”

Growing polyculture together in highly sustainable manners not only creates delicious gastronomy as in the instance quoted above, but polyculture in the Indigenous forest garden is also a profound example of ecogastronomy because of the highly sustainable and regenerative techniques and synergistic qualities. The researchers continue below:

1. Cacao trees and Madre de cacao— trees bearing different types of legumes—that serve as a support for vanilla vines. They produce a great amount of organic material within the ultimate area that enriches the soil, increases cacao productivity and keeps the land fertile.

What's interesting about this point is it clearly shows that the Three Pillars actually have a fourth pillar that takes one of the key sustainability elements from the Three Sisters milpa which is the integration of nitrogen-fixing plants. Madre cacao is a nitrogen-fixing tree. Furthermore, the madre cacao doesn't just shade the cacao (hence the name) and fix nitrogen in the soil; it also adds to the organic matter on the forest floor, feeds bird species with its tiny fruits, and doubles as a shade and green fencing for the forest gardens.

2. The achiote bushes mark the edges of cacao plantations due to their need for full sun. They also contain allelochemicals that protect the system against blights by acting as natural insect repellents.

3. The vanilla orchid attracts insects that contribute to the natural pollination of the system.

4. Shade trees— leguminous tree species, mainly the Madre de cacao (*Gliricidia septum*) —also protect against rain erosion and produce fruits and seeds that feed several animal species, many of which further disperse pollen and seeds.

This complex intercropping system has provided the basic components to make chocolate based beverages.<sup>213</sup>

Prior to the arrival of the Spanish, the Three Pillars was a major forest garden culture throughout Oaxaca, Chiapas, Veracruz, Tabasco, and parts of Guatemala. However, the forest garden agriculture was undermined in succeeding waves of colonization by the Spanish between 1521 and the end of the 17th Century. First by the Spanish lack of understanding of the forest garden concept and secondly by their focus on plunder and exploitation to feed distant markets. Thirdly because it took more than 50 years for the Spanish colonizers to begin to appreciate the true value of cacao, vanilla, and achiote, the forest garden agriculture was already in decline:

...a wide difference in the agricultural and commercial systems of pre-Conquest and colonial Central America. The Indians had developed a highly successful system of diversified agriculture, which largely sustained an elaborate trade system. Much of this system was erased upon European contact, replaced with monoculture agriculture and a world-based commerce that dominated the region in the colonial period and through the modern times.<sup>214</sup>

Until the late 20th Century, at the earliest, the concept of the forest garden lay dormant in the existing discourses of cacao forestry, although it continued to flourish in the grassroots Indigenous communities of the Americas. In this sense cacao forest gardens are not a new discovery! They are a re-discovery of the profundity of IK that is both delicious, nutritious, and ecologically regenerative. In the 21st century, agroecological concepts of the forest garden, and the role that the Three Pillars could play in this renewal and regeneration of the world's endangered forests are hopeful prospects for improving the complex relationship between culture and nature, economy and

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<sup>213</sup> Fernández and Barrera, "La Tríada del Chocolate," 89.

<sup>214</sup> Young, *The Chocolate Tree*, 33.

ecology. Cacao forest gardens are poised to become central to the regeneration of food and resource supply chains and inspire alternative approaches to agriculture and forest management. In this current exploration, it is the hope of this researcher to add a few key elements to the discourse: (a) there is a deep interconnection between the sustainable, and regenerative Three Sisters milpa and the Three Pillars forest garden milpa, (b) there is an abundance and beauty created by the combination of forest and field gardens that is not reducible to use-value, and (c) the forest garden is a powerful vehicle, vessel, place, and symbol for a renewal of the intercultural commons rooted in an abundance that is not reducible to resource abundance nor economic abundance, but to a cultural abundance that could be described as a type of cornucopia. Cacao culture is inseparable from maize culture, and this research suggests that like the symbol and strategic point of maize in the “Sin Maíz No Hay País” , cacao is an important aperture and doorway for the renewal of Indigenous ecological knowledge practices and techniques.

Cacao and vanilla are planted in the shade, whereas maize is grown under the open sky, because of its demand for sunlight. Annatto is a small tree which grows well in the open sky and requires little shade; it occupies an intermediate position between the previously described extremes. At the level of home gardens, the combination of arboreal species, bushes, herbaceous plants and other species imply great sophistication in the management of the structure, composition and function of the vegetation from the ecological standpoint.<sup>215</sup>

## 12. The 12 Pillars: Patastle, Calabash, Mamey, Madre Cacao, Avocado Allspice, Rubber, Copal, Ceiba

As depicted in their art, the ancient peoples of Mesoamerica possessed a sophisticated insightful perspective on their own existence, one that included a sense of

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<sup>215</sup> Young, *Chocolate Tree*, 39.

duty to understand the natural world. They understood that they were a part of nature and thus they viewed nature as a friend and partner, rather than as a hostile enemy. This wisdom extended to the conviction of the Mayas and other Indigenous peoples in the region that it was their responsibility to acknowledge and foster the natural bond linking humankind, nature, and the heavens. Respecting nature was the means to ensure the survival of themselves and future generations. It was largely because of this holistic view and approach to working with nature and learning from nature that these early peoples were so incredibly successful at developing a diversified agriculture of cacao and other crops within the forests.<sup>216</sup>

As evidenced in the previous section on the Three Pillars of the forest garden, there were in fact other key trees like the madre cacao in the forest garden. Just as there were other key food crops in the Three Sisters milpa like amaranth, chia, sunflowers, chilies, tomatoes, marigolds, and tobacco. The forest garden also had a flourishing polyculture of complementary and synergistic trees and understory plants. For example: when we talk about the CacaoTwins in the *Popol Vuh*, there can be many interpretations and meanings. The first set of Twins according to this researcher's interpretation are the theobromae cacao, and theobromae bicoloris, the red and white Cacao Twins. The white cacao is associated with the jaguar and shades its younger brother, while the red cacao benefits from its sibling's shade and compliments it as a drink. However, a second set of Twins are key to the forest garden and that is the mamey tree and the calabash trees. The calabash is a bowl, cup, or water carrier that grows on trees and when broken can be

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<sup>216</sup> Young, *Chocolate Tree*, 21.



downcycled in a number of ways without creating garbage. The mamey trees grow tall and shade the forest garden. Their fruit is delicious and nourishing and the oil from the seed is good for hair, skin, lips, and adds a subtle flavour and luscious foam to a cool frothing cacao beverage. The leaves of the mamey tree add dramatically to the organic matter on the forest floor and promote a healthy humidity and habitat for midges that pollinate the vanilla and red cacao.

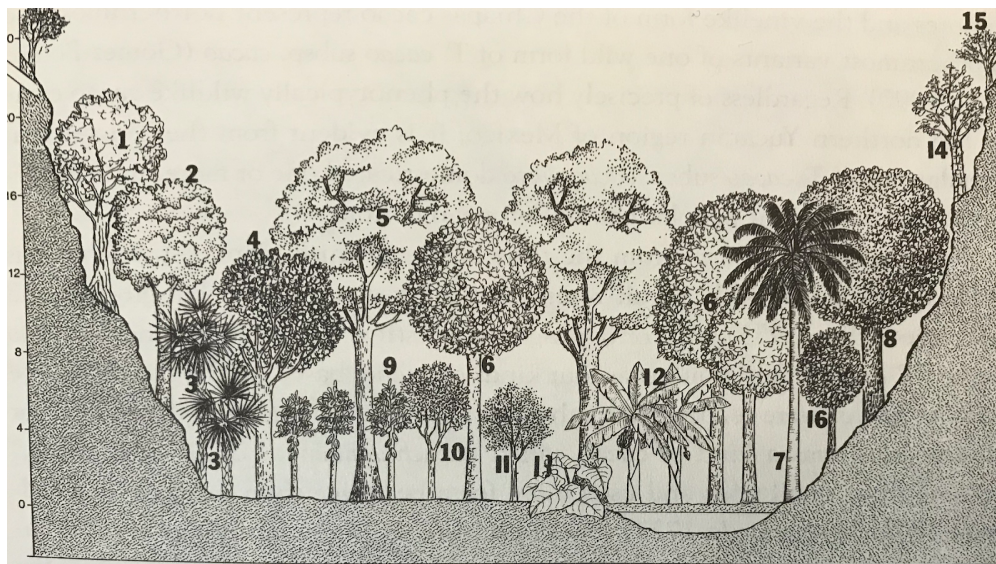
In fact, mamey seeds are a key ingredient in the prehispanic *tejate* drink that is one of the oldest known cacao/maize/white cacao beverages known to cacao culture. The *tejate* is an example of the ecogastronomy of old par excellence. Not only because it combines red cacao, white cacao, mamey seed, maize, but also because it is traditionally served in the *jicara*, and the secret ingredient is the rose of cacao which is a medicinal flower and cousin to the cacao that flourishes in the forest garden. During the past 15 years through the vehicle of our social enterprise, ChocoSol, we have supported transplants of rose of cacao seedlings from the central valleys of Oaxaca to the cacao producing communities in the jungles of Oaxaca and Chiapas as a way to explore the regeneration of the flavours and medicines of the forest garden. This diversity strengthens biodiversity first, food resilience secondly, and perhaps also opens the door to a new more balanced commercial crop basket when properly integrated in a focussed and quality driven manner. Finally, and as an expression of the connection between field and forest ecogastronomy, the *tejate* cold drink is made more nourishing through the addition of maize processed with ash (not calcined limestone). The ash not only makes

the maize more digestible, but it also helps to maintain the froth to the tejate cold beverage when it is prepared.

The *Popol Vuh* is an oral epic that was penned in the 17th Century but Orally composed millennia earlier. Therefore, in Oral cultures, unlike textual cultures, it is common for a symbol to have multiple meanings. Therefore, the Cacao Twins are not just two, but four. Therefore, multiple interpretations are not just probable, but are also “true.” IK is less descriptive in a textual sense, and more symbolic in the sense of being a keeping place for knowledge and complex context based teachings. This point was discussed at length in Chapter 1 on the teachings of the cacao section where we discussed Oral knowledge twinning. It has been debated in other places whether the cacao or the calabash tree were the “fruit tree” described in the *Popol Vuh*. It is my interpretation, however, the answer is both/and. Meaning not only cacao and calabash are symbolized by the tree at the mouth of Xibalba, but also the jaguar and mamey trees. These were key elements of the forest garden that gave rise to the regeneration and return of the Maize God through first regenerating the forest, the soil, and the food supply.



FIGURE 2.16. Jaguar Cacao Pod. Fresh pods have a green colour and a hard shell. Photo taken by Michael Sacco in 2018.



Vegetation profile of the cenote Aktun Sitio at Xocen, Yucatán, Mexico. (1) *Ficus yucatanensis*, (2) *Melicoccus bijugatus*, (3) *Sabal yapa*, (4) *Chrysophyllum cainito*, (5) *Brosimum alicastrum*, (6) *Pouteria mammosa*, (7) *Cocos nucifera*, (8) *Mangifera indica*, (9) *Theobroma cacao*, (10) *Citrus sinensis*, (11) *Citrus limonia*, (12) *Musa paradisiaca*, (13) *Xanthosoma yucatanense*, (14) *Bursera simaruba*, (15) unidentified legume, (16) *Annona muricata*. From Gómez-Pompa et al. (1990). Reproduced with permission of the author and the Society for American Archaeology, as published in *Latin American Antiquity*.

FIGURE 2.17. Cenote Forest Garden. A Mayan forest garden in a cenote. This is a wonderful illustration of the multilayer canopy of the forest garden and the diversity of food and polyculture trees. This polyculture is brilliant, and the cacao is the understory. There is no patastle (white cacao), but there are mamey and others.<sup>217</sup>

Furthermore, following the theory that the best and most successful elements of the field milpa were taken over into the forest garden, nitrogen-fixing trees known as “madre de cacao” were used to shade cacao trees and regenerate the soil of the forest garden, just as the leguminous beans and peanuts were used in the field gardens of old. In the Smithsonian backed study of *The Chocolate Tree* by Allen Young, he describes how the Indigenous farmers of Costa Rica were experts of using and shaping these nitrogen-fixing trees to shade the cacao.<sup>218</sup>

The tree which doth bear this fruit is so delicate, and the earth where it groweth so extreme hot, that to keep the tree from being consumed by the sun, they first plant other trees which they call “the mothers of the cacao” and when these are grown up to a good height fit to shade the cacao trees then they plant the cacaotales of the trees (orchards) of cacaos, that when they first show themselves above the ground those trees which are already grown may shelter them and as mothers nourish defend and shadow them from the sun.<sup>219</sup>

Madre de Cacao is a Tree that not only resists drought, survives in marginal soils all the while making them richer but has pest controlling properties. Here is what one reforestation article had to say of this simple and resilient tree:

Madre de Cacao is a nitrogen-fixing tree that can grow from 10 to 12 meters high. The tree is referred to by many people as a quick-stick due to the characteristic of growing almost right away just by cutting it and directly planting it in the ground. Adaptable to almost any soil environment including infertile soils, the tree is tolerant to salt spray and water logging and it can also tolerate drought for up to 6 to 8 months. This tree can be potentially weedy, but rarely causes a problem. Its ubiquitous characteristic makes it a good alternative for feeds due to its

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<sup>217</sup> Young, *Chocolate Tree*, 26.

<sup>218</sup> Young, *Chocolate Tree*, 26.

<sup>219</sup> Young, *Chocolate Tree*, 28.

availability in almost all areas in the country. In many tropical and subtropical countries, the tree is used for various purposes such as live fencing, fodder, coffee shade, firewood, green manure and rat poison. The tree can also be used for medicinal and insect repellent properties.<sup>220</sup>

Today the avocado tree enjoys more fame than ever, but this popular fruit is also a pillar of the forest garden, as are the enormous ceiba jungle trees in whose shade I have often felt the majesty and sacred beauty of the forest garden. Copal incense which is the resin from an ancient tree native to the forest gardens, rubber trees, and allspice trees are just a few of the many other trees that played important roles in the diversified food forests of Mesoamerica. It is important to see how the forest could and did respond to the specific needs of the region. The many pillars of the forest garden are not hollow vessels, they are powerful foods, medicines, spices, colourants, and symbols. These products represent a deep wellspring of Indigenous spiritual ecological knowledge and techniques. The Three Sisters and the Three Pillars are gateways to renewing our understanding of what regenerative healthy human agriculture could look like in the 21st Century food commons and forests. The 12 pillars of the forest garden encourage us all to pay more attention and be rewarded for our study and meditation on these Indigenous food crop bundles/polycultures. Cacao trees and other fruits do not produce abundantly beyond 20 years of age. They need to be cut back at the trunks so that the tree can send more energy to the fruit than to the trunk. However, after two or three such cutbacks, trees can become tired. By the end of this 60 year cycle the hardwoods like ceiba, cedar, or pine planted in the forest gardens reach an age and growth that makes them a valuable and useful forest

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<sup>220</sup> Belize Photos, "Madre de Cacao: A Simple & Elegant Tree," *Belize Travel Blog*, accessed July 22, 2021, <https://belize-travel-blog.chaacreek.com/2013/01/madrede-cacao-a-simple-elegant-tree/>

garden product. In cutting the forest at this stage the renewal of the milpa cycle begins again, and the Indigenous principle of tending the land for the Seven Generations is beautifully embodied in this agricultural model that can span more than 100 years!

### 13. The Edible Weeds of the Forest Garden

Below in figure 2.18 is a picture of two young Tojolobal youth in a forest garden in the Lacandón jungle of Chiapas Mexico. Leyver is holding the *acayu* otherwise known as *hierba santa*. *Hierba santa* is a peppery minty flavoured edible weed that grows in the understory of the cacao forest gardens. Its stalk can be peeled and the meat from inside savoured in the tender parts, but the leaf is most commonly used in tamales and in teas and as a seasoning. In pre-Hispanic times *hierba santa* from the forest garden weeds/*quelites* was also combined with epazote weeds from the field gardens to add a “green” chili kick to drinking chocolates. The flavour is a lot like a mint chocolate but with a unique kind of spicy kick on the tongue.



FIGURE 2.18. Hierba Santa Forest Garden Weeds. 2008 photo of Leyver Gomez in Lacandón jungle Chiapas Mexico by Michael Sacco. Leyver is showing the Acayu or *hierba santa* green used in traditional chocolate and maize for flavouring.

In the forest garden, coffee orchards of the Sierra Sur of Oaxaca Ojo de Tigre and a dozen other edible weeds are promoted and transplanted in the Indigenous governed shade coffee orchards. At midday those same greens play a starring role in the soups and steamed greens on the table with fresh tortillas. A walk to the milpa of the field or the forest, in this *quelite* agriculture is like a stroll down the fresh herbs aisle of the forest grocery store!



FIGURE 2.19. Ojo de Tigre Quelite from the Tierra Blanca Zapotec community in Oaxaca, Mexico. Photo by Michael Sacco.

Regenerating our understanding of the crops that flourish in the shade, and in short prolific growing cycles is a key to diminishing the need for herbicides, and

labour-intensive de-weeding campaigns and machete hand clenaing. Instead, the forest garden reveals how a vibrant, productive, semi-wild forest floor can promote midges, feed fauna, shade the soil, and nourish humans all at once. The forest garden is alive and nurtured at the roots, the forest floor, the understory, the mid-story, and then the over-story. It is a work of spiritual ecology in which humans can help to foster a type of architectural living matrix in multiple levels of the forest canopy and understory.

## 14. Forest Gardens Provide Food, Fuel, and Fibre

*Istle* is the fibre from an agave succulent, oftentimes that was crushed to extract the juice for pulque or for other food and beverage purposes. Agave succulents form an important part of the forest garden in temperate forests in places like Oaxaca. Cooking the hearts of the succulent agave is an age-old source of nourishment in the form of syrup and pulque (fermented maguey drink). In the modern era they are cooked and distilled for making mezcal and tequila. However, the maguey succulent was an important soil regenerating crop of old.<sup>221</sup> The plant was not just good for syrup, beverage, but also for arid soils. The by-product of the process of extracting the juice from the maguey left a valuable fibre called *istle* and pictured below. The net bag in the below picture, used for harvesting the fresh beautiful woody pods of the cacao is made of *Istle* fibres. It is a coarse but versatile fibre reminiscent of hemp or jute. *Istle* fibres were used as the nets for tumplines carried by forehead and on backs on the winding paths of the forest and

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<sup>221</sup> Ronnie Cummings, “Agave Power: How a Revolutionary Agroforestry and Grazing System in Mexico Can Help Reverse Global Warming,” Ecosystems Restoration Camp, December 18, 2019, <https://ecosystemrestorationcamps.org/agave-power-how-a-revolutionary-agroforestry-and-grazing-system-in-mexico-can-help-reverse-global-warming/>



field gardens of Mesoamerica. I learned this firsthand on many occasions as I participated in using this ancient technique to carry 50–80 kg loads of cacao and coffee out of the winding paths of the *cacaotal parcelas*. These nets would have been the fibres used for moving the fuel and the food of the forest gardens



FIGURE 2.20. Istle Net. 2012 trip to Chinantla region and Lacandón jungle, photo taken with researcher's camera by Gustavo Ojeda in Oaxaca Mexico.

In the *No-Nonsense Guide to World Food*, Dr. Wayne Roberts talks about how forest gardens are an agroecological system that produce renewable resources of food, fuel, and fibre without being depleted. That is to say that an agroecological approach to harvesting food, fuel, and fiber from forests means cultivating a better balance in forest agriculture. Agro-ecologists describe this system as non-timber forest products.

About 1.6 billion people depend on forest livelihoods, according to the FAO's forestry department. Forests are equal opportunity workplaces. They don't discriminate on the basis of color, religion, or formal education. They have no reales against women who bring their children to play beside them while they work....<sup>222</sup>

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<sup>222</sup> Wayne Roberts, *The No Nonsense Guide to Food* (Toronto: Between the Lines, 2013), 68.

A key element to the forest garden orchards is the by-product created through pruning and thinning the forest garden which creates a sustainable and abundant source of wood for the household hearth. Furthermore, select hardwoods are selected to be grown out for as many as 80 years to increase their value, and to be used for building or for sale. This long-term cultivation is not reducible to use-value nor is it mutually exclusive to it either. Cultures willing to plant crops that will be harvested in 80 years are certainly not interested merely in their own short-term interests, but rather see themselves as part of a larger time cycle— this is the sense of serving the Seven Generations past and future.

A multiple-use forest, managed as a grocery, pharmacy, hardware, and clothing store without walls, provides security for the very people likely to face hunger. Food, fibre for clothes, fibre for building materials, materials for crafts, fuel, medicine, fodder for livestock: it's one-stop foraging.<sup>223</sup>

A forest garden orchard of cacao, patastle, vanilla, mamey, and other fruit crops, will have its most fruitful years during the first 30 years of its lifespan. However, the hardwoods that went into the ground at that first moment, will come into their full worth upwards of 40 years all the way to 200 years. Thus, leaving another level of succession and planning that allows the fruits a chance to be cut to the base, and to renew the understory of the cacao orchards again. This planting of trees for future use beyond the current generation is an expression of an Indigenous service to the Seventh Generation.<sup>224</sup>

Biomass harvested from pruning and selective logging for personal, community level, and even commerce level trade, is a form of forestry that is gaining traction in the 21st century and is rooted in these ancient cultures. One of the Mohawk forest garden

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<sup>223</sup> Wayne Roberts, *The No-Nonsense Guide to Food* (Toronto: Between the Lines, 2013), 69.

<sup>224</sup> Seven Generations Productions, "Seven Generations," accessed July 22, 2021, <http://www.7generations.ca/about/seven-generations/>

equivalents to the ceiba tree of the Lacandón jungle would be the white pines that were the symbol of the Haudenosaunee Confederacy. The white pines literally and symbolically made the rafters for the LongHouses. Is this one of the meanings that the White Pine of Peace has both literal value in its use as a construction material, but also symbolic value because of the LongHouse culture it fostered with its intrinsic wisdom and eco-agricultural teachings? The white pine, like the cacao in this sense, is not merely a resource input or commodity, it is simultaneously a symbol of the Indigenous cultures and spiritual ecological traditions. This deeper understanding challenges one to move beyond the agroecological to the spiritual ecological dimensions of the Indigenous forest garden, and to see the deep interconnection between culture and agriculture.

The forest garden as a place and as a model, is a powerful symbolic and literal vehicle for intercultural and ecological regeneration and cultural resilience. The symbolism, as well as the versatility of the forest garden in the age of climate change make it a unique vehicle for exploring interculturality, polycultures, preservation, and climate change preparedness.

It just so happens that I came to this understanding through the beauty of the cacao tree and its sacred seeds! However, as a lover of the forests of Ontario, Canada, I see maple tree as the leader of the forest garden of the North of Turtle Island. Maple, however, is not only good for its syrup, but also in its old age the wood is fantastic! Bringing the cacao, vanilla, and patastle of the Mayan forest garden, together with maple sugar and elderberries from the Indigenosu forests gardens of Ontario and Quebec is a delicious way of celebrating this re-discovery. Therefore, the ideal ecologically

regenerative forest garden chocolate bar is made with cacao, vanilla, achiote, and maple sugar!

Whether it is eight pillars, or 12 pillars of the forest garden, the important thing to see is that polyculture and diversity are keys to a spiritual ecological methodology that will continue to regenerate the forest garden agriculture of the Americas. If people don't understand the need for spiritual ecology and renewing our cultural connection to the forest garden in a way that goes beyond mere economic values, then let the sustainability and renewability of the agroecological approach to forest management and non timber forest products suffice. However, it is through deep connection and dwelling within the context of forest gardens that new opportunities and new relationships can continue to be rediscovered and reinvented in ways that are culturally, ecologically, and economically appropriate to the challenges of the 21st century.

Thirteen years of planting jaguar trees (*theobromae bicoloris*) beans in the Chinantla has proven that there is a hunger for ancient wisdom and flavours, and for stories of how regenerating traditional crops and food cultures can yield surprising results and renewed products. As a result of this work in the Chinantla a new category of chocolate awards was made at the International Chocolate Awards of the Americas, but also now more than 250,000 jaguar trees have been planted in the Chinantec forest gardens of Oaxaca, Mexico since 2007. For the first 8 years we helped with the replanting by financing the cost of growing seedlings, but through continually buying the cacao and creating a market for the jaguar cacao chocolate in Toronto through a social enterprise we have been able to grow and regenerate the region as perhaps the world's

center of production for this new prized delicious species of *theobromae bicoloris*, that we like to call Jaguar chocolate. The challenge of this success in the modern age is the hunger for profits leads to monocultures which leads to diseased plants and market collapse. Therefore, the mission now is to strengthen other dimensions and forest garden crops in the community like mamey, the achiote, the vanilla, the calabash, coffee and many more.

The jaguar white cacao is only one such opportunity for renewal. Markets for natural foods, spices, resins, dyes, and fragrances are on the rise. There's a place for renewing jaguar white cacao, for the achiote, for the rosita de cacao, for the vanilla, for the hierba santa, and for the mamey seed. The list of opportunities is vast and includes copal and rubber trees, hardwoods, and calabash trees. One of the challenges that will be discussed later is in creating shortened supply chains between producers and artisan co-producers whose recipes can integrate many of the polycultures and therefore embody a regenerative and more economically viable ecogastronomy.

## 15. Cacao Forest Gardens Host Fauna, Family, and Flowers

One Bowl, and One Spoon...holds that the gifts of the earth are all in one bowl, all to be shared from a single spoon. This is the vision of the economy of the commons, wherein resources fundamental to our well-being, like water and land and forests, are commonly held rather than commodified. Properly managed, the common approach maintains abundance, not scarcity. These contemporary economic alternatives strongly echo the indigenous worldview in which the earth exists not as private property, but as a commons, to be tended with respect and reciprocity for the benefit of all.<sup>225</sup>

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<sup>225</sup> Kimmerer, *Braiding Sweetgrass*, 376.

The regeneration of the forest garden is not just about humans. This regeneration extends to and includes all beings. Starting with the habitat for animals, but also including the soil, the waters, the trees, the air and all the insects and animals. The health and well-being of all beings in nature is fundamental to the spiritual ecology of the forest gardens - not just the ones with a useful value.

Forest gardens preserve the habitat for jaguars, toucans, monkeys, and squirrels, but let's not forget the deer and the wild turkeys. Forest gardens were semi-sheltered grazing areas for deer and turkeys. Deer are the wild cows of the forest, just as turkeys are the wild chickens of the forest garden. The job of forest garden practitioners then is to keep some of the predators at bay so the deer and turkey can flourish. However, even predators have their role to play. For example, one of the reasons the jaguar cacao is named after the jaguar is because as a mid-story shade tree above the cacao orchards, the branches of the *theobromae bicoloris* (also known as jaguar tree) tree offered a good hunting perch for squirrels, toucans and monkeys who love to eat the fresh fruity flesh inside the cacao pod. On the other hand, these same animals would spit out the seeds, and thus help with propagating the cacao forest gardens once again embodying the multiple teachings and ecological roles that fauna play in the forest garden<sup>226</sup>

Secondly, in saying that forest gardens are also a place for family, I am primarily referring to forest gardens as a symbol of kinship and community of all beings including our neighbours. The forest garden, the milpa as a place, is as Jean Robert described so

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<sup>226</sup> However, Indigenous farmers of Mesoamerica didn't just let any cacao grow, they selected the best and the tastiest seed generation after generation and developed cacao seed varieties of epic flavour and quality compared to their wild counterparts.

much more than a system in which energy moves, it is a kind of irreducible symbol that the farmer embraces and nurtures. One famous Mexican peasant slogan is that “the land belongs to those who work it.” This is rooted in that deep Mexico connection to the milpa as a place where nature energy fills one's body with *enjundia* (*life force*). Today, regenerating the forest garden approach to agriculture would have a profound impact on the families and communities where it is successful in Oaxaca, and Chiapas. It could perhaps mean that youth drawn off to the cities for work could find work locally in the stewarding and regeneration of the communal land forest gardens of the Indigenous communities. Re-animating the youth of the local area in the work of forest garden regeneration and bridging public service to the community is a strategic way to train the next generation of forest garden stewards, while enriching the communal lands of Oaxaca and preserving the forests. In the forest gardens of the Chinantla, from which Chinantec youth migrate to the US in droves for illegal migrant work leaving their community lands abandoned, forest garden regeneration could be a stopgap for some Indigenous youth to participate in regenerating the local economy, ecology, and community. Working alongside elders like Don Maximino Martinez and others, the ecological knowledge and teachings are passed onto another generation. Kinship, family, food, and taste of place are expressed in the family values of the Indigenous forest garden as a place and as a taste of place—this is the deepest sense of the meaning of terroir. Indigenous forest gardens are prime locations for renewing a sense of kinship with the community and with nature alike. The forest garden and the symbol of the many trees are powerful symbols and

metaphors to explore what regenerating culture, commons, forests, and kinship look like, feels like, smells like, and tastes like.

Flowers of the forest garden are the final symbolic and literal element to dig into here. The flowers of the forest garden remind us of the important dimension of beauty that goes beyond the logic of pure economic or humancentric use-value. Yet, flowers have their value in dollars. However, the fundamental value of flowers for humans is that we are willing to pay for their beauty. Flowers are literally and figuratively a gift to see, smell, to give and to receive. The vibrant colour and smell of flowers is a reminder to be grateful for the gift of life, which is perhaps why they are given as gifts of celebration and of condolence alike. Smelling the flower, and even eating many flowers is a treat in so many ways, but it is not fundamentally an economic value in this researchers opinion. The dignity and beauty of fauna, family, and flowers cannot and should not be reduced to an economic value. The beauty of a flower reminds us of the gift of life and life's ephemerality. The purpose of a flower is not in its utility but in its beautiful symbolism.

Below is a bird of paradise flower cultivated in Don Tito Jimenez's forest garden ranch, in Pichucalco Chiapas. His daughter Monica Jimenez also marketed vanilla, cinnamon, honey, and other non timber traditional forest products from their polyculture cacao ranch.





FIGURE 2.21. Bird of Paradise. Photo taken in Pichucalco, Chiapas México by Michael Sacco in Don Tito Jimenez forest garden. 2010.

Don Tito was one of the few landholding rancheros who planted hard woods in his lands at the edge of the mountain and now a lifetime later they are of great value, all the while having had the forest garden producing cacao and other foods. Though Don Tito and his family do not identify as Indigenous people, the kind of forest garden agriculture they practice is deeply rooted in millenary understandings of the forest garden cultures of cacao and other companion crops of Mexico Profundo. Don Tito's family is fiercely rooted in the food and local culture of their place that represents many hundreds of years of wisdom. The quality they show for their heirloom cacao cultivars and cacao cultures of Mexico Profundo is second to none. Their forest garden is different from the beauty of the Chinantec jaguar cacao forest gardens, and yet both forest garden cultures reveal deeper understandings of the opportunities rooted in the forest garden agriculture of Mexico profundo.

## 16. Aquaponics and Fish Mounding

Tikal's agricultural hinterland shows that subsistence on milpa alone could not have sustained that great urban center. An idea of a "mixed" economy combining extensive milpa with other forms of extensive and intensive labor was emerging. It was suggested, for example, that root crops (Bronson 1966) and fish protein production in canals... might have provided significant complementary food sources.<sup>227</sup>

Why is it that the Mayan cacao glyph looks like a fish, and that the name ka-ka-wa refers to two-fish froth in Mayan glyphs? It is not just because of a mythical connection to the Cacao Twins of the *Popol Vuh* who appear in their first day journey back to rebirth as two fish in a shallow pond. There is a deep Indigenous spiritual ecology of the role that fish played in the cleaning of the water, the feeding of the people, and of the regeneration of the soil.

Mohawk elder Tom Porter described how as a young man in the community of Akwesasne they would catch the bottom feeders and use them for mound gardening. Fish trenches formed a key part of the Mesoamerican intensive agricultural system not only providing nutrient rich soil for mounding when the trenches needed to be dredged, but also the trenches provided an effective way of transporting heavy loads by raft and canoe. The fish of the ponds were not just for eating, but also for cleaning the water, and for feeding the soil. The bones and bodies of fish were recognized as key to the feeding of the spiritual ecology of humans, water, soil, and plants.

The integration and combination of water, fish, soil, and sunlight through agriculture was a revolutionary leap in the spiritual ecology of Mesoamerica, and as

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<sup>227</sup> Scott Atran, Arlen F. Chase, Scott L. Fedick, Gregory Knapp, Heather McKillop, Joyce Marcus, Norman B. Schwartz, and Malcolm C. Webb, "Itza Maya Tropical Agroforestry," *Current Anthropology* 34, no. 5 (December 1993): 633–700, <http://www.jstor.org/stable/2744279>

evidenced by the etymological roots of the word cacao, and glyphs from temples in Teotihuacan below shows a deep spiritual ecological understanding of the importance of fish for the renewal of the field and forest garden crops. Today's reflection on the ancient tradition of *chinampas* in Mexico City is revealing a deep understanding of the way that human waste, muck from the bottom of the lake, reeds, and roots, were combined to create a hybrid form of hydroponic/aquaponic/soil rich farming. The Chinampa floating island tradition was an apex example of this IK. Chinampas are an Indigenous artifact and technique that reveals a great deal about the genius and profundity of the agricultural knowledge of ancient times. In the same way that maize and cacao offer windows and doorways of perception and cultural renewal, chinampas embody and reveal a profound connection between culture, aquaponics, soil-making, and agriculture dating back to pre-Hispanic times.

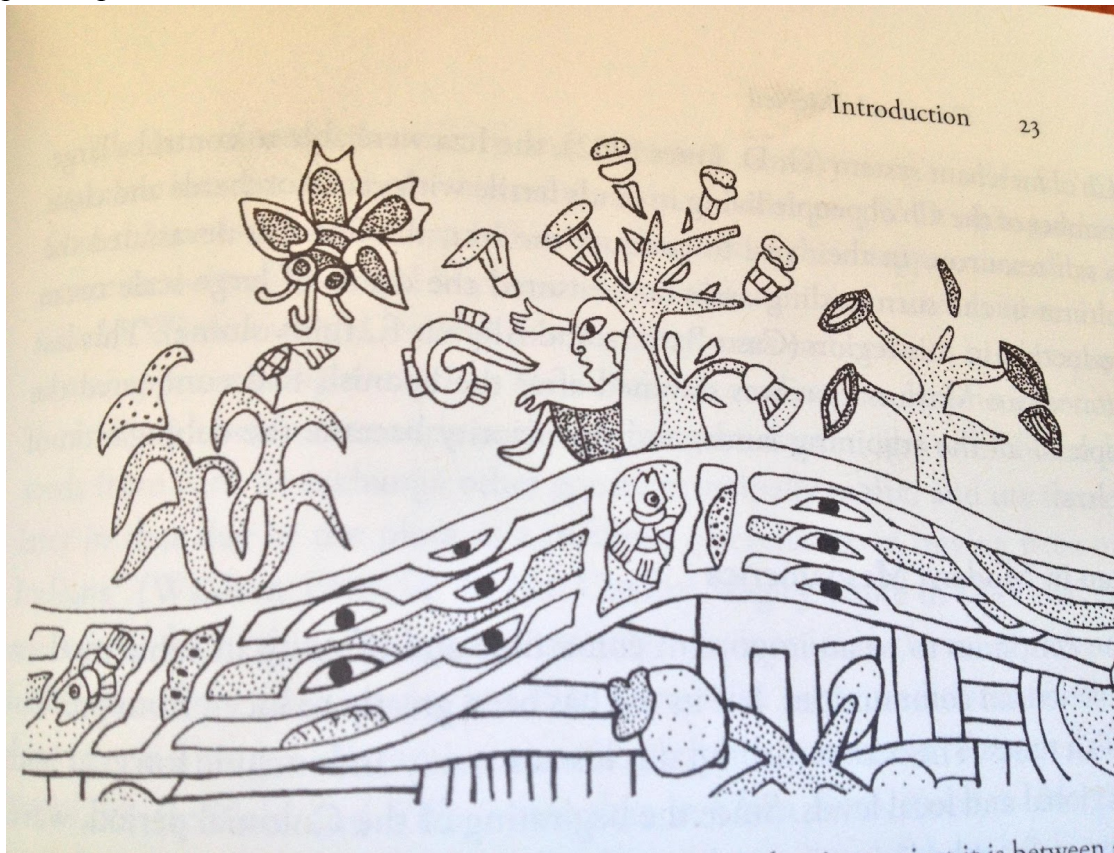


FIGURE 2.22. Soil of the Gods. Ancient Teotihuacan mural shows fish mounding techniques for combining aquaponics techniques with other sustainable techniques not only paved the way for emergence of the cacao forest gardens, but also helped to feed, renew, and regenerate the maize milpa as evidenced by the photo above.<sup>228</sup>

<sup>228</sup> Cameron L. McNeil, "Introduction: The Biology, Antiquity, and the Modern Uses of the Chocolate Tree (*Theobroma cacao* L.)," in *Chocolate in Mesoamerica*, ed. Cameron L. McNeil (Gainesville: University Press of Florida, 2006), 23.

## 17. Forest and Field Agricultures Combine to Create an abundant eco-gastronomic Cornucopia

The annual crops of maize, beans, and squash were highly sustainable and produced incredible amounts of nutrients for human consumption in a small plot intensive (SPIN) manner. However, the techniques were labour intensive as well, demanding annual planting and soil amending/making as each year much of the nutrients were carried off to the markets in the form of vegetables.

The forest garden took up to 5 years before the first crops could be harvested in most instances. However, the forest garden did not need to be replanted and fertilized yearly, and the work of the forest garden was not as labour intensive. Similar to the field garden, cultivating the forest garden meant leaving certain beneficial trees, shrubs, fungus, plants and animals to flourish, while eliminating noxious plants, especially in the early years. In this way the forest garden was an expression of culture, community, and commons, perhaps best described as a place in which the “comunalidad”<sup>229</sup> of Mexico profundo flourished. By combining the forest garden, and the field garden, and including not only fish, but deer, turkeys and many other beneficial foraging animals, the forest garden food basket helped to sustain and create an abundance that could be described as

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<sup>229</sup> Communalidad is a term developed by a Zapotec scholar from Gelatao in the Sierra Norte of Oaxaca, Mexico. For Jaime Luna, the Zapotec people of the Sierra Norte were not a community in the Spanish or occidental sense of the word. Through his work he sought to develop a term that did not feed the individual concept of belonging to a community and being separate from the place. Instead, the Indigenous concept of communalidad is that the Zapotec people are the community, the place, the soil, the maize, the cacao, and the communal lands. Communalidad in this sense is a way to understand in a deeper way the concept of the forest garden as an expression of the Indigenous commons. Furthermore, this concept helps to explain how after more than 10,000 years of inhabiting the mountains of Oaxaca, the Indigenous communities of Oaxaca continue to enjoy the benefit, and fructiferous-ness, abundance, and health of their forests. It was in the context of these Indigenous communities, maize milpas, and forest garden milpas, that the concept of the transition theory first presented itself to me.

cornucopia. This abundance was part of the thanksgiving for the abundance that Mother Earth gave to the first peoples of the Americas. Abundance was added to by the Indigenous cultures' deep relationship to place, to soil-making, to plant selection, and to respecting and caring for the teachings that animals and insects alike shared. This IK cultural approach of being in nature leads to some of the most sophisticated spiritual ecological and regenerative food systems in the history of human civilizations. This deep ecological connection between field and forest garden milpas is the basis of the rich ecological gastronomy of Mexico profundo. The flexibility and resilience of these sustainable and regenerative milpa systems of the field and the forest has managed to nurture and sustain Indigenous communities in place for millennia.

When the maize milpa and the cacao forest garden are combined, two food baskets combine, the annual and the perennial, the labour intensive, and the seasonally crafted. Moreover, the eco-gastronomic combinations multiply into an abundance that is best described as an abundant cornucopia.

## **18. Subsistence+Plus Agriculture of the Cacao Forest Garden is a Both/And/Plus Agricultural Paradigm**

A challenge to exploring these Indigenous spiritual ecological traditions is that the profundity and complexity of these concepts do not easily translate into English or Spanish. However, endeavouring to unpack and analyze these IK traditions can lead to some interesting opportunities and questions. For example, one of the keys to strengthening the polyculture of the forest garden is to renew and develop eco-gastronomic recipes inspired by these old Indigenous polycultures of companion

crops. Artisans and co-producers who renew and re-invent these traditional companion crops can strengthen the polyculture of producer communities directly in a way that minimizes the need for dozens of different commercialization channels while simultaneously developing multiple producer and artisan relationship networks. In this way small producers of multiple polyculture crops of the forest garden and field garden harmoniously can achieve a kind of economy of scale between small producers and artisanal co-producers. This kind of ecogastronomy and direct trade without intermediaries depends on reciprocal relationships of trust and solidarity and requires striking up a balance between the pillars of economy, ecology, community, and reciprocal relationship. Beyond food security and ecological sustainability, having durable spices and foods for trade is a way to acquire materials and goods that are not available locally. In this sense subsistence is not secondary to trade, instead subsistence agriculture and crops that can be sold are complimentary in the context of the Indigenous forest garden. These durable foods and spices of dried cacao, vanilla and achiote are an expression of the plus, in the subsistence plus matrix of the forest garden transition theory of ecological regeneration. The edible weeds, the deer, the mamey fruit, and the jaguar cacao are symbols of the food sovereignty and subsistence needs of the people, the soil, the water, and the air. This tension between local food subsistence and trade needs recalibrating as the push of economic markets of the last 500 years has moved communities away from this more culturally complex and resilient model to produce more flattened and greater volumes crops for the purposes of sale. However, what is best for global markets seeking

low costs on commodities is not best for local communities. Finding a balance between food security and crops for sale is the essence of the subsistence+plus Indigenous model.



FIGURE 2.23. Vanilla Curing. Photo by Michael Sacco in Valle Nacional, Oaxaca 2008.

Across the ocean from Mexico on the Ivory Coast and in Ghana, cacao cultivation tells a much less hopeful story than in the hopeful Indigenous forest garden story outlined above. Today there is a clear crisis of deforestation in Africa as a result of cacao plantations that are being undertaken in an unsustainable manner.<sup>230</sup> Moreover, the unethical practice of indentured child labour continues to plague supply chains in the

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<sup>230</sup> Terry Slavin, “Extreme Poverty Still Fuelling Deforestation from Cocoa in West Africa,” *Reuters Events*, March 10, 2020, <https://www.reutersevents.com/sustainability/extreme-poverty-still-fuelling-deforestation-cocoa-west-africa>  
David Pilling, “The African Farmers Taking on Big Chocolate,” *Financial Times*, December 16, 2019, <https://www.ft.com/content/648bd044-1ab3-11ea-97df-cc63de1d73f4>

Ivory Coast and Ghana.<sup>231</sup> Africa is not the original place of cacao, and as such it lacks the culture of the cacao forest garden that nurtures subsistence and trade simultaneously. Moreover, the economic-centric orientation of the cacao of Africa has clearly shown that economics alone is incapable of cultivating the potential and the spirituality implicit in the cacao and its forest garden traditions. Business and economics alone are not enough to unlock the ecological and nutritious potential of cacao in Africa. Whereas in Mexico Profundo, cacao was literally money that grew on trees. An ecologically regenerative Indigenous culture matrix of the cacao forest garden nourished multiple communities of plants, animals, and human beings. There is no reason others than that of the narrowness of market-based approaches that the cacao industry in Africa could not make an about face and move towards a regenerative approach to cultivating a spiritual ecology that goes beyond mere economics, use value, and corporate interest to an agroecology at the least, and a spiritual ecology of renewal and regeneration at best. Such a change would not only provide buttresses to deforestation, desertification, but also fight food insecurity, child labour, and provide a social compost out of which local economies and tribes could strengthen their dignity and local economy.

However, the extract-oriented practices of global cacao markets tend to externalize the social and ecological costs, and therefore have no interest in internalizing these costly factors that contribute to sustainable and regenerative food production models. Fighting against these exploitative practices that are well documented by authors

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<sup>231</sup> Ange Aboa and Aaron Ross, "Child Labour Rising in West Africa Cocoa Farms Despite Efforts: Report," *Reuters*, October 19, 2020, <https://www.reuters.com/article/uk-cocoa-childlabour-ivorycoast-ghana-idUKKBN2742FU>



like Carol Off, author of *Bitter Chocolate*, and many other journalistic current expose documentaries and articles is a battle worth fighting. However, for me personally before fighting this battle it makes more sense to continue the work of rekindling, and re-discovering, and renewing the vision and potential of Indigenous cacao forest gardens of the Americas. In the context of the cacao forest gardens of the Americas, regeneration is less a titanic work of fighting transnationals and rewriting culture, and more a work of rediscovering millenary knowledge traditions in relationship with small holding Indigenous producer networks.

The transition theory outlined above is an example and opportunity through which small producers can not only restore and regenerate the environment while providing for themselves and future generations, but it is also an expression of a different kind of approach to agriculture that balances food security and resource needs. It is important to see the forest garden not just as a source of environmental services or agricultural inputs, but as a place with its own dignity and integrity. As this doctoral dissertation is being undertaken from within the field of Indigenous Studies, it is important to underscore the need to create a balanced weave between economy, nature, and community that is greater than just the human-centric interests or economic interests that dominate modern approaches to agriculture and conservation.

The goal of this treatise on the connection between the field milpa of maize, and the forest milpa of cacao is to begin a deep and more thorough research of the regenerative Indigenous approaches to agriculture. Furthermore, the transition theory that connects the dots between: virgin forest -----> to field garden ----> to forest garden----->

back to forest. This agricultural tradition is one that clearly emerges from a study of Oaxaca's Indigenous communities and their connection to place through milpas and communal land holdings. Their communal lands and forests are intimately tied to these millenary traditions. Their sense of *comunalidad* and belonging to the community and its place are an expression of the Indigenous commons. The cacao forest garden in this context is not just about regenerative ecology and food supply, it is about intercultural regeneration of the commons. It is a powerful symbol of Mexico Profundo, and a powerful example and opportunity for a world in which many worlds are embraced. The forest garden in this sense is a powerful symbol of an inclusive Indigenous interculturality and inter-natural dialogue and connection between communities of plants, animals, humans, water, soil, and air. In the shade of the forest garden regeneration of soil, water, and habitat, it is the hope of this researcher that cultural alternatives and initiatives can take root and flourish.

Sitting here in Oaxaca writing these words after almost 20 years of research with my mentor Gustavo Esteva, I had the opportunity to ask him what he felt his goals were in the "Sin Maíz no Hay País" campaign that formed the methodological underpinning of this investigation into cacao. One part of the process of that campaign he describes as a resistance to the transgenic corn that was invading Oaxaca at that time in 2002. Another element was the strengthening and celebrating of the IK of Mexico profundo, and the third was the celebration of maize as a strategic aperture and portal to undertake the work of creating a world in which many worlds were embraced, where harmony, conviviality

and hospitality were stalwart pillars that held the plants of the maize milpa together and in so doing the beauty of the culture of the peoples of Mexico profundo.

Similarly, when I say that cacao and forest gardens are the medium, the message, and the symbol, I am referring to the way in which cacao forest gardens express a deep conviviality and complementarity amongst the plants, the soil, the water, the animals, and the community. I am referring to the harmony that cultivates these spiritual ecological plants. Cacao forest gardens are an aperture and a doorway through which we can see, and walk into a re-newed kind of agricultural paradigm. In so doing we begin to renew and regenerate and remake a world in which many worlds are embraced. I am as grateful to the friendship and mentorship of Indigenous elder Gustavo Esteva as I am to the cacao, because without the gift of friendship and teachings that he shared with me I would have never come to ask these research questions. This work is at once personal, interpersonal, internatural, intercultural, and transformative. It is a struggle to find the right words in the right way and at the right time! If only a few people ever read these words, and if of those few, only one is moved to struggle for the regeneration of the forest gardens of America profunda, then I am truly grateful and truly hopeful. Those willing to plant trees and forest gardens in whose shade they will never stand are the poets and actionists that civilization so desperately needs today, and turning to Indigenous communities is one of the most hopeful places to begin as they have millennia-long traditions of undertaking this work. Let the ceiba of the South and the white pine of the North be symbols of planting forest gardens for the Seven Generations, while the fruits, flowers, fauna, and families flourish in their slow dignified growth for a minimum of 40 years! Let the maple

and the cacao be symbols of the nutritious and delicious cornucopia and ecogastronomy we are set to rediscover, regenerate, and renew.

If citizenship is a manner of shared beliefs. Then I believe in the democracy of species. If citizenship means an oath of loyalty to a leader, then I choose the leader of the trees. If good citizens agree to uphold the laws of the nation, then I choose natural law, the law of reciprocity, or regeneration, of mutual flourishing.

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<sup>232</sup> Kimmerer, *Braiding Sweetgrass*, 173.

## Chapter 3: Regenerative Initiatives of Cacao Cultures That Strengthen Soil, Community, and Sustainable Food Movements:

Outlined and discussed below are 4 proposed research actions (initiatives) to strengthen the regenerative ecology of cacao forest gardens from the soil to the finished product (cradle-to-cradle eco techniques and tools). This research is fundamentally about finding ways to embody initiatives and examples of a regenerative agricultural paradigm shift. Through the focus on the regeneration and rediscovery of the Indigenous forest garden agricultural model.

1. Cacao forest garden regeneration as both a symbol and strategic stepping stone in transition to food resilience and regenerative ecology in the 21st Century.
2. Forest gardens are a powerful symbol and vehicle for an intercultural polyculture.
3. Ecologically regenerative initiatives and practices that can be applied at the grassroots to strengthen food resilience and ecological regeneration of the forest garden.
4. Regenerating the soil for the pillars of the forest garden; and looking at ways of bringing soil-making and forest garden regeneration home to Ontario, both literally, and in an intercultural sense. Carbon and nitrogen are not the problem, the problem is when we add more carbon and nitrogen to the atmosphere than to the soil and the biomass through regenerative agricultural practices.

## An Intercultural Positionality as Seen Through an Intercultural Re-discovery of the Cacao Forest Garden

As a young man growing up in Ottawa and studying at Ashbury College from 1993 to 1995, we read and re-read Voltaire's *Candide* in grades 12 and 13 French class. In the pages of Voltaire's *Candide*, I discovered the beauty of philosophy that was not overly optimistic, nor overly pessimistic. In *Candide* one could see a kind of pragmatism Voltaire was advocating. The main character Candide originally went searching the world for happiness and Eldorado (city of gold). In the end, he wisely determines that happiness is not somewhere else, but that it must be cultivated and grown where one is; and this was the sense of the famous proverb and conclusion of the book where Voltaire's Candide say: "il faut cultiver notre jardin... we must cultivate our garden."<sup>233</sup>

The wisdom of this proverb inspired me profoundly as a young man. I had an image of a garden outside a cottage, where tomatoes, potatoes, cabbage, carrots, and other vegetables grew in neat rows, and a dignified peasant intellectual farmer would tend, weed, and hoe clean rows of vegetables in a very defined and clean-living way. This garden was the metaphor and expression of Candide's art of living and being a good member of society. The garden in this sense was for me a philosophical and political metaphor for being the change we wish in the world. Cultivating a garden is a persistent work of seeding, watering, tending, harvesting, feeding, and seasonal change.

Cultivating our lives like a garden meant embracing these spiritual ecological balanced

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<sup>233</sup> Voltaire, *Candide, or Optimism*, trans. Theo Cuffe (New York: Penguin, 2009).

practices though I wouldn't have phrased it that way when I was a young man. 28 years later, I can see a hunger for those sentiments in my love of Voltaire's image of the garden.

Voltaire's *Candide* was at that time in my life, a book that showed a pragmatic, candid, and grounded way of meeting the challenges of the world with dignity and hope, but without a reductionist optimism or pessimism. Rather, the concept of cultivating our garden was a call to action and engagement with the work of making the world a better place by starting in one's place; it was less of a crusade and more of a cultivation. This hunger to be part of the change was a virtue instilled in me through my upbringing.

Little did I know that 25 years later, I would be running a learning community social enterprise called ChocoSol that would be seeking to regenerate the Indigenous cacao forest gardens, while simultaneously writing a doctoral dissertation on the IK and spiritual ecology of cacao and chocolate. Cultivating and regenerating Indigenous cacao forest garden polycultures is a radically "other" kind of garden and cultural concept to the symbolic garden of Voltaire rooted in Western philosophical and political traditions. By radical "other" I am referring to the Indigenous transition theory model from the Three Sisters milpa garden to the Three Pillars milpa forest garden discussed at length in Chapter 2. Moreover, my younger self was rooted in the Western concept of earning our living by the sweat of our brow and imposing the garden onto the world in a labour-intensive manner, taming the wilderness and toiling to create a new garden of Eden. This concept of toiling is distinct from the spiritual ecology embodied in the Indigenous to America's approach of cultivating and nurturing the land (Mother Earth). The Indigenous spiritual ecology assumes Mother Earth's abundance and proceeds to

cultivate a landscape of peace not by imposition but by a type of revealing of the ecology of plants, soil, water, animals, through brilliant perennial techniques not imposing technologies and the sweat of our brow approach of fighting nature. Indigenous forest gardens are not cultivated in a wilderness working against human beings, but in the context of a beneficent Mother Earth that abundantly, seasonally, and perennially gives when humans work with nature.

Cultivating the spiritual ecology of the milpa is as much about creating beautiful soil, and nourishing food, as it is about cultivating beautiful relationships with plants, animals, water, soil, air, and other human beings. In leading a learning community social enterprise for close to 20 years attempting to undertake this research, re-discovery, and regeneration of the spiritual ecology of cacao and chocolate, I have sought to learn from my mentors and Indigenous elders. I have continuously asked how to create a social enterprise that was more socially just, ecologically regenerative, and good for mind, body and soil. The devil is in the details, but 12 years of learning and research in the Indigenous studies program at Trent, has helped to deepen my understanding and sensitivity to many of the most challenging ethical, intercultural, and IK issues of our time. Through my work at ChocoSol and apprenticing with wisdom keeper elders like Nana Maria Ramirez and Gustavo Esteva, or Don Flor and Don Max in the cacao laden jungles of Mexico profundo, I have come to believe that renewing, re-discovering, and regenerating the IK teachings, traditions and practices of cacao and chocolate can help to reimagine and reshape the alternatives to the current unsustainable industrial cacao agricultural system. Personally, professionally, and interculturally, I am seeking to



reimagine and reframe these issues as opportunities in ways that are deeply inspired by Indigenous regenerative agriculture forest garden practices and teachings, while at the same time drawing upon the best of the Western tradition and modern scientific and technological tools and techniques. This is the intercultural dialogue and encounter that I have embodied and continue to cultivate within my daily work and practice of leading a social enterprise that works directly with thousands of Indigenous forest garden producers in Mexico, Ecuador, Peru, and the Dominican Republic, importing more than 60 tons of forest garden cacao and coffee from Indigenous communal lands and small plot forest gardens in 2021 alone!

Since before the time of Voltaire, both the Western and the Indigenous civilizations of the Americas have faced environmental and resulting political crises. However, today's crises are of a different magnitude and scale; the environmental and political monsters of today are of our own making and have arisen because of a deep intercultural and intranatural imperative that has not been properly addressed: to renew, regenerate and remake our connection to the earth, to each other, and to the purpose of our daily labours in a commons that includes all beings, not just humans, and not just the 1% of humans. Revisioning culture and renewing the depths of culture is a key challenge of today, for Western civilization, but also for Indigenous cultures and communities. In an age where environmental deterioration and destruction is a global reality, human civilizations must redefine a more sustainable, if not regenerative approach to feeding and providing for humanity. The challenge we face is not just technical. The challenge we face is more deeply cultural. Society cannot continue to abuse and take nature for granted

any longer, and Indigenous millenary traditions are full of functional and culturally different alternatives that need to be more deeply understood if we are going to be able to successfully re-imagine multiple alternatives that have worked in the past and that can be renewed.

The result of 500 plus years of colonialism, imperialism, and domination by economic and military force have erased many traditional alternatives (both Western and Indigenous) from our 21st century imaginations and cultural repertoires. Gandhi described this cultural oblivion of the West as the materialism<sup>234</sup> that had taken over the driver-seat of Western cultures and caused them to lose sight of the deeper purposes of living and being. Materialism, for Gandhi, was tied to the primacy of economic ways of being and the idea that material goods can fulfill all our needs, including our nonmaterial (spiritual) needs. The Indigenous cultures of the Americas were the last to be colonized<sup>235</sup> by the materialism and mercantilism that culminated in the Industrial Revolution and that continues to invade the world in the guise of globalization. This emerging world system, whatever you call it (globalization, neoliberalism) has the power to take over (co-opt) and use even the minds and actions of those who believe they are fighting against it. Because they were the last to be brought into this dialectic of materialism, the Indigenous peoples of the Americas have very strong spiritual and ecological traditions not yet obliterated by millennia of forgetfulness. Memories of the alternatives to modern economic society still live on in the culture and imagination of the people of *America profunda*. These varied sources of IK are powerful doors and windows of perception for seeing and imagining the

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<sup>234</sup> Mohandas K. Gandhi, *The Story of My Experiments with Truth* (New York: Dover Publications, 1983).

<sup>235</sup> Porter (Sakokwenionkwas), *And Grandma Said*, 24.

alternative agricultural models and ways of surviving the climate collapse unfolding in the 21st Century.

The Indigenous ways of knowing/being—the IK of cacao and the deep symbolism of the forest garden, in particular to this research—are much needed symbolic vehicles/vessels of a hope that are well-rooted in tangible and embodied actions that are regenerative both literally and interculturally speaking. Cacao forest gardens are well-springs of inspiration and pragmatic opportunities that can both literally and symbolically renew, regenerate and help to heal this malaise of the modern imagination as it pertains to regenerative and resilient food supply chains and the human cultural relationship to land and place. It is not that cacao and forest gardens are a panacea for today's problems, like some silver bullet superfood marketed by shallow cacao pumping gurus. No, the symbols of cacao and forest gardens are vehicles, vessels, and mediums for renewing and feeding our imagination, while at the same time giving us some practical starting points in reimagining and remaking the new commons in an age of climate change and global scale conflicts. The challenge is to create enclaves, antechambers, and “social compost” out of which renewal and *florecimiento* can be reimagined and from which they can emerge reborn. In a seemingly contradictory sense, the economics of forest garden enterprises can help to incubate the aspects of the forest garden that symbolically go beyond modern economic culture. The forest garden is not in a simple binary of either/or tension between economics and ecology. Instead, the Indigenous forest garden is a symbol for reimagining the balance between economy,

community, and ecology that requires a “*gestalt* shift”<sup>236</sup> in the ways that we understand our agricultural food paradigm. The forest garden symbol can help us to see something near to us with renewed insight.

It was this line of moving beyond critical thinking that drew me almost two decades ago to an Indigenous deprofessionalized Zapotec intellectual and nomadic storyteller from Oaxaca, Mexico by the name of Gustavo Esteva. Esteva, in his book *Grassroots Postmodernism: Remaking the Soil of Cultures* argued persuasively that we did not need more critiques of how the system was not working. According to Esteva there were plenty of those critiques, from Marx and Foucault to Gramsci and Wallerstein, that had taken that critical analysis to completion. In that book, instead of arguing and criticizing, Esteva told stories of the alternatives emerging at the grassroots of Mexico; he told stories of a renewed world that was reemerging in renewed ways, a world in which many worlds were embraced, belonged, and could coexist mutually. The protagonists of his stories were ordinary men and women with extraordinary behaviour, many of whom were Indigenous and campesino peoples of Mexico. He looked to Indigenous communities, social movements, Zapatistas, Zapatismo, and Mexican civil society to understand the real shape of this renewal, like Cesar Anorve’s radical dry-composting toilets, or the Zapatista uprising in Chiapas, Mexico in 1992. His mission was not to research, critique, or to construct a new type of system, but rather to re-discover with new eyes and inspiring stories the shape of a more ancient Indigenous world still flourishing and reemerging at the grassroots of Mexico profundo. His editor and

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<sup>236</sup> Kuhn, *The Structure of Scientific Revolutions*.

publisher described it as a “grassroots postmodernism,” but what Esteva was really describing was the first Zapatista inspired postmodern revolution that he later described as Zapatismo!<sup>237</sup>

Moreover, Esteva argued that this was not the world of the modern with its failures of development, but a different kind of world, deeply influenced, shaped, defined, inspired, and rooted in the wisdom of Indigenous millenary traditions. In civil society and Indigenous movements of the Americas, Esteva saw hopes that were transforming a struggle of resistance into a struggle for liberation. Esteva’s writings and messages invite one to see a renewed kind of world with new eyes and a radically new perceptual framework. He challenged us to move beyond the dualism of socialism and capitalism both trapped by the concept of development, he challenged our textual minds to move beyond the schism between nature and society. Esteva dreamed of a cultural and ecological renaissance rooted in the dignity and leadership of ordinary people with extraordinary behaviour, and in particular the Indigenous peoples of the Americas!

The challenge is not to join the revolution, the challenge is to find revolutionary ways of being in our daily rituals and habits that create the soil for all beings to flourish, while at the same time figuratively creating the fertile conditions out of which the alternatives to destruction can be reimagined, renewed, and rediscovered—this is the spirit of embodying the alternatives through a kind of actionism (Zapatismo). This iterative and embodied struggle is symbolized in this work through the re-discovery and

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<sup>237</sup> Gustavo Esteva, “Celebration of Zapatismo,” *Humboldt Journal of Social Relations* 29, no. 1 (2005): 127–167.

regeneration of the cacao forest garden. It is in this context and hunger for real food and real actions that cacao emerges as a powerful symbolic vehicle for this radical hope.

I spent five years working, studying, learning, and living in Oaxaca with Gustavo and his civil society and Indigenous networks, and had the great opportunity to live in traditional Indigenous communities in the Sierra Norte of Oaxaca and the Lacandón jungle of Mexico. During one of these prolonged work trips to the Zapotec village of Santa Cruz Yagavila, in the Sierra Norte of Oaxaca, I had a very unsettling experience.

As I sat solar roasting coffee in the beautiful valley with Zapotec Indigenous women and men of many different ages, I was torn. On the one hand the people were kind, hospitable and welcoming. The valley was serene and picturesque, and the coffee was heavenly tasting when roasted with pure concentrated sunlight.



Figure 3.01. Fuego Solar Roaster. Roasting cacao in the Lacandon Jungle using pure sunlight with Don Flor turning the cacao and coffee roaster.

However, on the other hand, my pants were torn, I was earning no money, and I was hungry because I was not yet accustomed to eating a diet of tortillas, beans, and chilies. One day, I planted beans with a Zapotec grandfather using an armadillo shell to hold the seeds, a cane to open the hole, and my bare toes to push the seed down and close

the holes. Yet, despite these rich experiences, I was feeling divided and psychologically conflicted. I had finished my undergraduate and graduate degrees and many of my fellow alumni from Ashbury and university were now earning six figures working for big companies. Meanwhile, I was hungry and experiencing economic hardship in a very personal way, in a remote Indigenous village in the mountains of Oaxaca. This reality of living and working in a traditional Indigenous community really cast into light how different I was from them, and how different I was becoming from the boy who grew up in Ottawa, Ontario, Canada. I began to feel the contradictions of being a competitive individual, of measuring my worth by how I matched up against my peers who were part of the American and Canadian economies. My head was aching, but my heart was full. This was the beginning of actually taking off the lenses of development and the cultural biases and one-dimensional interpretations of concepts like the garden that I was raised in. It was the beginning of understanding the intercultural dialogue.

When I went back to Oaxaca and I shared these feelings and thoughts with Gustavo Esteva, he gave me a booklet called the “*Guswenta or The Intercultural Imperative: Towards a reenacted Peace Accord between the Mohawk Nation and the North American Nation States (and their people)*,” written by Robert Vachon of the Intercultural Institute of Montreal in close dialogue with Mohawk elders Ernie Benedict and Tom Porter from Akwesasne. Vachon had given those same books to Esteva a decade earlier, saying to Esteva that he believed him to be the living breathing example of a new kind of radical pluralism and intercultural way of being. Esteva describes himself as a Zapotec deprofessionalized intellectual and nomadic storyteller, and this unusual

vocation emerged for him over a lifetime of work, study, reflection, and action stemming back to his loving and challenged<sup>238</sup> relationship with his Zapotec grandmother.

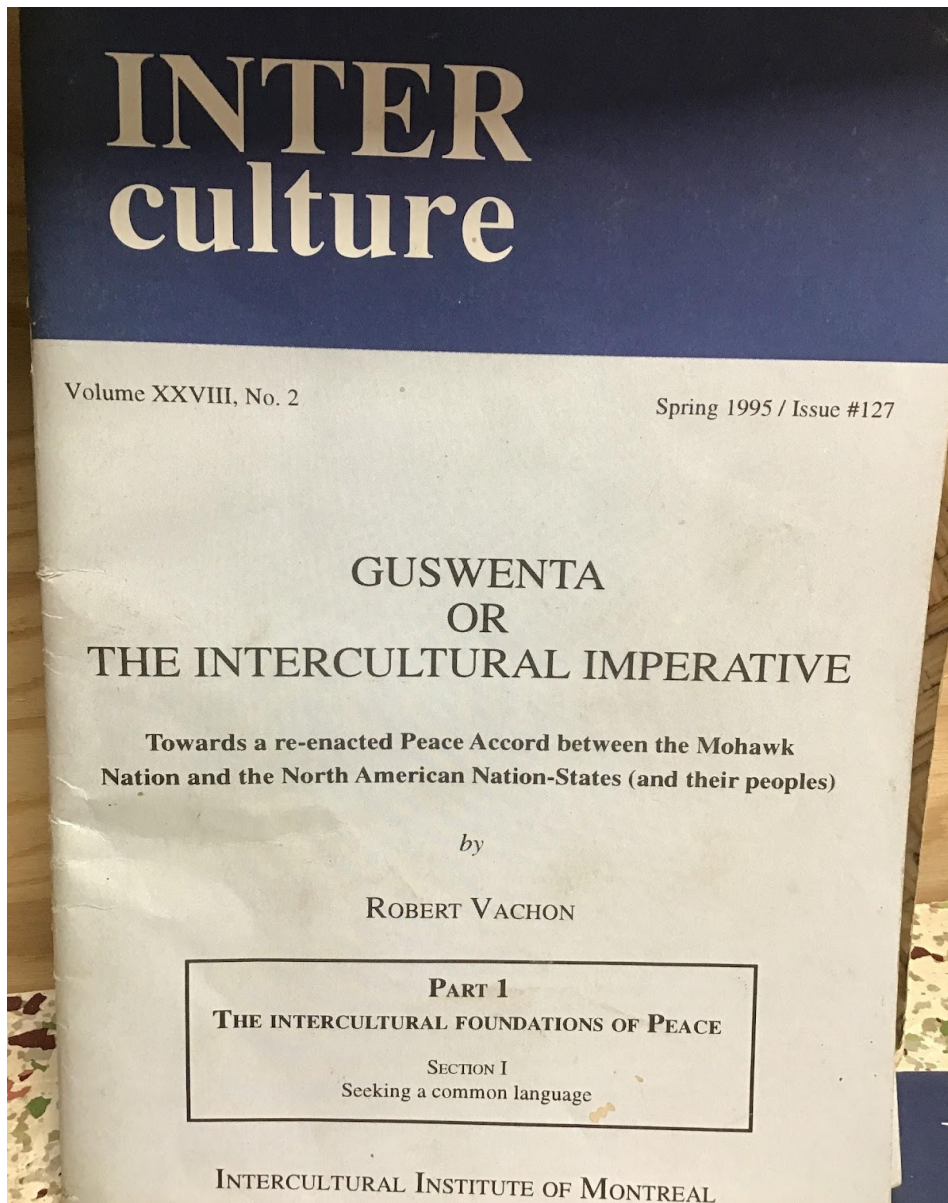


FIGURE 3.1. Guswenta or The Intercultural Imperative. Original copy of “Guswenta.” by Robert Vachon.

<sup>238</sup> Gustavo often told the story of how his grandmother was not allowed to enter through the front door of their home in Mexico City because she was obviously an Indigenous woman in the way that she dressed and wore her hair. Yet, spending time with his grandmother in Oaxaca and being in the market of Oaxaca as a boy were some of Esteva’s best memories. Later in life he came to see this tension in his household as helping to define his vocation to celebrate México Profundo and its Indigenous peoples.



According to Robert Vachon, Esteva was living and struggling to find the apt words to express through his work a radical intercultural pluralism, a new intercultural political paradigm deeply inspired by the Indigenous political traditions of the Americas. Furthermore, he believed that part of Esteva's calling was to contribute new language and stories that exemplified the emerging radical pluralism myths of the 21st century. Esteva described the difficulty of this new political myth, saying that he often felt like he was fumbling in the dark to find the right words and concepts to describe the emerging and more inclusive political paradigm/revolution. One of the ways in which Esteva struggled to express this was through the celebration of the Zapatista call to make a world in which many worlds could belong:

The Zapatistas resist such temptation. They are fully and deeply committed with the articulation of all resistances, with wide coalitions of the discontented, with the gathering of all rebellions. But they do not attempt to subsume all the struggles in a single definition of the present and the future, in a single doctrine, slogan or ideology. They are aware that the shared construction of a real por-venir (the world to come) for all those discontented, increasingly dispensable for capital, can only be realized in a world in which many worlds can be embraced. They know that the time has come to bury forever the dream and project of constructing One World, which has been the pretext of all colonialisms and today nourishes forms of fundamentalism whose level of violence has no precedents. What is emerging, instead, can be expressed in the formula "One No, Many Yeses"<sup>239</sup>

In poetic language it is easy to allude to this way of being in the world, but to actually describe the structure and politics of it is to talk about something that has no clearly articulated vocabulary in English, Spanish, or French. This poses a challenge for the political language of English or Spanish today to express an intercultural vision of governance without overly simplistic reductionism. Even the word governance is a

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<sup>239</sup> Esteva, "Celebration of Zapatismo," 154.

challenging word in terms of describing the Zapatista or indigenous concept of a world in which many worlds belong and fit because there is no sovereign or monarch in the sense in which Europeans understand those words.

This is exactly the kind of nonreductionist thinking around intercultural language I hope to keep at the base of our understanding of regenerating the cultures of cacao forest gardens and chocolate cultures. It requires something akin to a *gestalt* shift in perception to begin to see this more complex spiritual ecological understanding emerge and not reduce it to one alternative. It is a kind of *paradigm* shift in terms of reimagining a *floreCIMIENTO* of different alternatives described above as “one no, and many yeses!” I believe that the spiritual ecology of the forest garden and the IK teachings of cacao can be powerful vehicles and poetic language for reimagining, renewing, regenerating, re-evolving, and re-discovering an ecological and intercultural radical pluralism in the 21st century.

Interculturality is not just political or cultural, but also ecological and embracing of trade and commerce. Gustavo Esteva shared Vachon’s pamphlets on interculturality and the Mohawk Guswenta as a symbol of radical pluralism and interculturality with me in 2003. Esteva and later Vachon invited me to continue the work of intercultural dialogue for myself, and to participate with them in creating the language of this radical pluralism. I have personally and professionally been struggling with these questions of interculturality for two decades. My radical hope was that out of these cacao forest gardens something renewed and radically pluralistic in a cultural/political sense could take root and emerge. I have spent the last 16 years exploring the symbolism and the

regenerative spiritual ecology of cacao forest gardens and chocolate as a food and Indigenous medicine.<sup>240</sup>

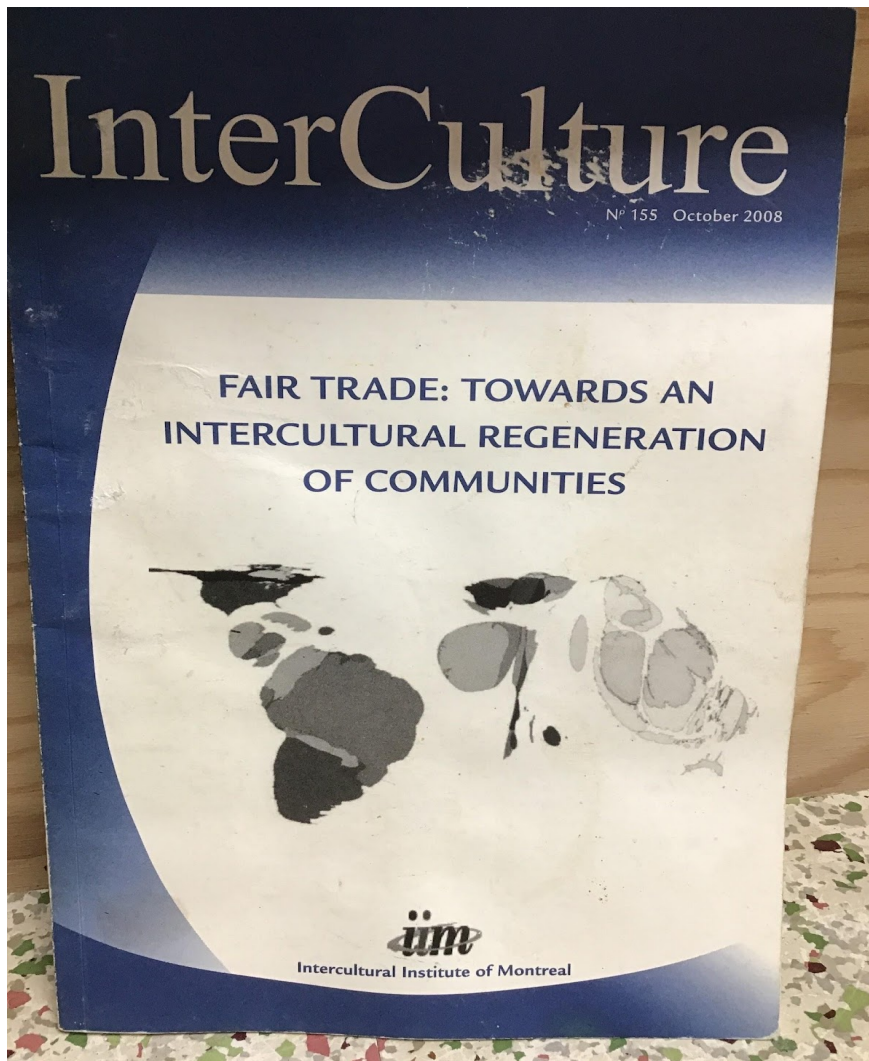


FIGURE 3.2. Fair Trade InterCulture. Original copy of *InterCulture*.

Almost 20 years after my first introduction to these concepts, I would like to offer a reflection on four very practical, pragmatic, rooted, and symbolic actions related to my vocation in regenerating and re-discovering the cacao forest gardens. Translating critical understanding into iterative and transformative actions and initiatives is the basis of food

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<sup>240</sup> Sacco, “Building Intercultural Bridges.”

actionism, a new term and concept I have forged to describe a way of fusing theory and praxis into embodied action at the local scale. Instead of arguments I am choosing to tell stories and to describe actions and initiatives that embody these principles of spiritual ecology and regenerative intercultural relationships in the tradition of my elder and mentor Gustavo Esteva. Forest gardens and food are not mere abstract concepts; they are vessels and vehicles through which these deep teachings can begin to take shape. My hope is that behind and beneath these words and stories the shape, contour, and spirit of this renewed language of spiritual ecology of the forest garden and cacao is taking shape for my readers. When talking about the deep presuppositions of culture and in struggling to remake food cultures through actionism, the challenge is fumbling with the words that so often are misunderstood, misconstrued, or simply fail to hit the mark of intent we set aim at. Failing to hit the mark is not the problem but failing to struggle and keep struggling to hit the mark is!

## **Four Initiatives to Re-generate the Cacao Forest Garden**

As discussed in Chapter 1 and 2 of this dissertation, cacao forest gardens and chocolate offer powerful doors and windows of perception and action for ecological renewal of water, soil, air, body, community, and culture that are holistically integrated. However, the work is far from done, and the dangers and challenges of climatic collapse are clear and present. It is important to explore the tangible ways in which these understandings and opportunities for renewal and regeneration of cacao forest gardens and healthy and spiritual ecological chocolate can be turned into actions. Below are four practical opportunities through which this cacao food actionism can be achieved.

1. The continued renewal and regeneration of the forest garden as a technique and an intergenerational work that is just re-beginning and has much more to contribute for the next seven generations.
2. Cacao and chocolate properly sourced, properly made, and properly shared can be a powerful tool for food literacy and food sovereignty movements. This kind of chocolate can be revolutionary and spiritually ecological!
3. Combining small plot intensive agriculture with small plot intensive manufacturing eco-tools and eco-techniques that foster auto sufficiency and resiliency to create climate solution best practice exemplary sites and projects.
4. Soil-making and soil as a deep symbolic and practical nexus of spiritual ecology and opportunity for regeneration at a cultural level of the forest garden that can hasten and nurture the ecological and cultural regeneration needed to weather the climatic collapses we are anticipating in the 21st Century.

## 1. Forest Garden Regeneration

As Wayne Robert's so aptly put it in his *No-Nonsense Guide to World Food*, the forest garden is an agroecological plot that provides the essentials of: food, fuel, and fibre.<sup>241</sup> Cacao is a forest garden product par excellence for three reasons in particular: (a) it grows best in the shade of other trees and is less prone to plagues and pests when polyculture techniques are applied and (b) you don't have to cut the cacao trees down to procure their seeds which grow in easily harvested pods, and (c) the pollinators of cacao

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<sup>241</sup> Roberts, *The No-Nonsense Guide to Food*, 89.

need a somewhat untamed, rotting, and humid undergrowth, of decay, and humidity to flourish. Healthy soils covered in leafy matter and flourishing soil biota make for abundant cacao groves.

Cacao trees do not like an overly manicured forest; they need the pesky little midges and mosquitoes that flourish in the dense growth and underbrush of more preserved wild spaces to be pollinated. The sensitive flowers of cacao do not like pesticides or herbicides, these harsh sprays reduce the floreatation of the cacao flowers that transform into fruits and foster a good harvest. Thus, protecting the harvest means not drying out the soil or poisoning the understory.

In the traditional forest garden, vanilla, cacao, and achiote formed the Three Pillars of the forest garden architecture, but the jaguar cacao trees, mamey trees, calabash gourd trees, avocado trees, the rosita de cacao trees, and the madre cacao trees complimented the Three Pillars by providing shade, seeds, fruits, spices, hardwoods, leafy forest matter, and nitrogen to a complex multi-story forest canopy and polyculture that unfolded on many levels simultaneously.

So, beyond the (1) food, (2) fuel, and (3) fibre of the agroecology and economics of the world food system, the Indigenous cacao forest gardens include another set of key contributions: (4) fauna, (5) family (6) flowers and fungi. The latter three are a way of seeing how the meaning and importance of the forest garden is not simply reducible to use-value or economic value, but to a spiritual ecological value for the community of all beings. (4) The fauna is not just for eating, but is part of the spiritual ecology of the forest garden. (5) The forest gardens not only feed the family, but provide a commons, for

family relationships, traditions, language, and teachings to be shared. (6) Finally, flowers are a symbol of beauty and wealth that is not measurable in dollars. Fungi are the embodiment of the renewal and rebirth that comes from rot and are integral to healthy soils.

The forest garden commons has trees that feed into the local economy and can be traded, but those trees do not define the garden; rather they are key pillars in its formation, and thus it is neither subsistence farming, nor pure commercial farming, it is subsistence+plus farming as leading food scholar Lori Stahlbrand once described on a visit to the Indigenous forest gardens of Oaxaca.<sup>242</sup> Indigenous communities know that there is more to culture than economics! The forest garden is the cultural expression of a deep Indigenous food ecology that was resilient in providing for human necessities and at the same time not reducible to only human needs or values. Trade/commerce has a role like a pillar in forest garden agriculture, but it is not the defining role by which all the efficiency and purpose of the forest garden should be measured.<sup>243</sup> From an intercultural agricultural model this is something that non-Indigenous approaches to regenerative agriculture lack, and this limits their ability to see beyond economic interests to a longer-term Seventh Generation regenerative agricultural model, since initiatives are measured by return on investment metrics that is not long term enough. This food and

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<sup>242</sup> Lori Stahlbrand, was the founder of Local Food Plus, and specializes in understanding food communities and ecologies through her work on the Toronto Food Policy Council, New College at U of T, and now at George Brown.

<sup>243</sup> This is most likely one of the contributing factors to the success of biodiversity that the Scientific American article on biodiversity noticed with regards to the much higher levels of biodiversity on Indigenous-managed lands than private or even conservation lands had. Annie Sneed, "What Conservation Efforts Can Learn from Indigenous Communities," *Scientific American*, May 29, 2019, <https://www.scientificamerican.com/article/what-conservation-efforts-can-learn-from-indigenous-communities/>

natural abundance of the Indigenous forest garden creates a veritable cornucopia of food abundance for humans, animals, soil, air, and water alike, but requires communities to plant trees whose return on investment only start after 5 years, and whose full bounty of hardwoods come to fruition in 60 years and beyond.

The regeneration of cacao forest gardens can take many forms from: planting white cacao trees, planting madre cacao nitrogen-fixing trees, planting tropical hardwoods for future selective logging or community projects, and the planting of heirloom high quality cacao varieties in partnership with vanilla vines climbing the trunks. Regenerating the forest gardens means not only planting the trees but developing a supply chain that can deal with diversity, and that thrives not in spite of diversity, but flourishes and is made more resilient by diversity. Therefore, by looking at the Indigenous traditions of the forest gardens, we find that many of these seeds, flowers, fruits, fauna, herbs, and spices come together in delicious, nutritious, and medicinal ways in the old Indigenous chocolate recipes; while at the same time providing habitat for animals, birds, insects, and predators. This conviviality of plants, animals, and humans is the basis of the Indigenous ecogastronomy which also connects deeply to seasonal cycles and perennial harvest opportunities. To accelerate forest garden regeneration it needs to be connected to and supported by an economic model to gain momentum in the 21st Century—whether it is selling high quality cacao, vanilla, or coffee, or whether it is supported by carbon credit reforestation projects. However, forest garden regeneration of the Americas cannot become solely reducible to these commercial crops, or it will fail at a cultural and ecological level. Rather, the forest garden with its valuable crops is a



strategic point to strengthen auto-sufficiency in terms of food production, while at the same time supporting local and translocal trade. Symbolically, at the level of culture and the commons, the forest garden soil and shade can become the social compost out of which examples of climate alternatives can be incubated, cultivated, and arise. Not unlike trees that require shade, some cultural initiatives need to be protected during their seedling stages. Indigenous forest gardens are both a vehicle and symbol for the kind of re-imagining in the 21st century. Auto-sufficiency of food fuel and fibre is not enough, but also cultural sufficiency of understanding what is enough and having some spices for trade are secondary and tertiary elements to this regeneration of the forest gardens that moves beyond utilitarian approaches. This reimagining reweaves commerce, ecology, community resilience, and subsistence+plus Indigenous food into flourishing cultures and communities. In this sense the forest garden is a powerful symbol and vehicle for the reimagining of a new intercultural commons that makes space for multiple pillars in a regenerative architecture of the forest garden commons!

## 2. Cacao And Chocolate

Fundamentally, cacao and chocolate are food; not the candy and vehicle for sugar primarily employed by industrial chocolate makers. Cacao was one of the world's first global commodities in the 17th and 18th centuries, and therefore chocolate one of the world's first commodified industrial foods in the 19th and 20th centuries. Cacao forest gardens rooted in Indigenous cultures of the Americas were replaced by industrial chocolate makers introducing cacao into equatorial Africa, in large part because of West

Africa's proximity to Europe. This translocation of cacao from its cultural context into a new cultural milieu shaped by industry and not the Indigenous cultural matrix of millennia allowed industrial chocolate companies in Europe to more closely control the supply chain and the price. Furthermore there was no cacao culture to resist this exploitation and extraction. This control and extraction were facilitated because there was no cultural matrix for cacao production in Africa tying it to subsistence+plus food resilience and regenerative forest gardening approaches; thus, African cacao was more easily exploited by industry because it was not supported by millenia of cultural traditions. As a result of this massive translocation, many people today believe that Africa is the place of origin of cacao, but it is most certainly not. In the context of African cacao commodity growing, forests are stripped, and monocultures of cacao arise in their place in vast tracts of jungle with burned out trees dotting the places where the jungle used to be. The old burned trunks turn white in the sun and look like the bones of giant animals killed by poachers and dotting the land.<sup>244</sup> In this form, the cacao is not a way of sustaining and renewing the soil or feeding the community. Instead, cacao plantations of this kind are synonymous with erosion of community, ecology, and soil.<sup>245</sup> Furthermore, child labour is still exploited en masse to help tend and harvest the cacao and maintain its price low to maximize profits for the landowners who sell their cacao commodity brokers at a price that does not reflect its true social and ecological value, less than \$1000 USD

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<sup>244</sup> *Rotten*, season 2 episode 5, "Bitter Chocolate," directed by Abigail Harper, released October 4, 2019, on Netflix.

<sup>245</sup> Fred Pearce, "The Real Price of a Chocolate Bar: West Africa's Rainforests," *Yale Environment 360*, February 21, 2019, <https://e360.yale.edu/features/the-real-price-of-a-chocolate-bar-west-africas-rainforests>

per ton at the farm gate.<sup>246</sup> Cacao exploited in the industrial matrix of production is not a symbol of ecological and spiritual ecological renewal, it is an example of the way in which modern consumerism of cheap industrial foods is a profound source of the practices that are jeopardizing social and ecological health and wellbeing of peoples and environments and a main contributor to climate collapse.

To make things even worse, the nutritious cacao, which is in its pure form is good for teeth, heart, and health has for the most part general has become a vehicle: for industrial sugars and powders that rot teeth; for hydrogenated fats that clog arteries; and for modified milk products and preservatives that impact our health in negative ways. So much so, that it has only been within the last three decades that cacao and dark chocolate have been able to reestablish their former prestige as nutritious foods. Through scientific clinical studies showing its virtuous nutritional, medicinal, energetic, and restorative properties, ranging from lowering muscle recuperation time and lowering blood pressure to better digestion and antidepressant qualities cacao is once again recognized as truly being a food worthy of the title “food of the gods.”<sup>247</sup>

Today’s consumers in principle are looking more and more for organic, Fairtrade labels to verify and ensure the ethics and the health of the chocolate they consume.

Investigative reportage after investigative book<sup>248</sup> continue to disprove the theory that

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<sup>246</sup> Carol Off, *Bitter Chocolate: Investigating the Dark Side of the World’s Most Seductive Treat* (Toronto: Vintage Canada, 2007).

<sup>247</sup> Linda Woolven and Ted Snider, *Chocolate: Superfood of the Gods* (Twin Lakes: Lotus Press, 2018). The table of contents of this book shows these topics supported by a gamut of clinical studies. There were both blind and double blind in gathering clinical data that support the health claims about high flavanol cacao chocolate in particular.

<sup>248</sup> Oliver Balch, “Mars, Nestlé and Hershey to Face Child Slavery Lawsuit in the US,” *The Guardian*, February 12, 2021, <https://www.theguardian.com/global-development/2021/feb/12/mars-nestle-and-hershey-to-face-landmark-child-slavery-lawsuit-in-us>

lasting and impactful social and ecological change can happen through market mechanisms governed by huge corporations. Fair Trade and organic certifications are a step in the right direction and can provide valuable research and helpful starting points; however, they do little to fundamentally change the economic matrix that benefits from exploitation of people and the environment alike. As shown by 15 years of research in Oaxaca, the Indigenous small producers increasingly see the organic and fair trade fees and bureaucratic impositions for certifications as eroding the little bit of direct benefit they can achieve by selling directly to ethically minded co producers. Certifications in general work against small producers who do not produce enough volume independently to warrant a highly documented, written, and monitored production program. One experience in Oaxaca working with organic coffee producers showed this researcher that the costs of certifying the organic coffee were 10 times more for a network of Indigenous forest garden coffee producers, than for one large ranch just based on the monitoring and assessment workload, cacao is no different.

The craft chocolate industry has arisen in part to feed this growing hunger for foods that are good for the mind, body, and soil. Bean to bar artisanal chocolate makers seek to tell the story of their cacao terroirs in a highly competitive milieu, and tree to bar makers in countries of origin celebrate their ability to control the whole process from forest garden regenerative growing and small-scale fermentation to finished bars; but struggle to find local and/or international markets that will pay a premium price for their quality cacao chocolates. Moreover, the last 20 years of evolution in the craft chocolate

industry has seen a renewal and resurgence of equipment that empowers small-scale makers.

Yet, small-scale production is not enough to ensure the maximum nutritional and socio-ecological properties of cacao chocolate are being preserved. Small is not necessarily beautiful,<sup>249</sup> but in the case of food and agriculture, small is definitely less likely to be monstrously unhealthy and eco-socially destructive as in the case of low-cost industrial cacao production of West Africa, or industrial chocolate mills that denature the cacao through high-heat high-shear long-time processing and low-quality sugars and food additives.

Artisan makers have an opportunity to include healthy ingredients and ethical sourcing practices that cut out sketchy intermediaries seeking to profit at the expense of producers. Makers can more directly support sustainable agriculture, while keeping emissions and food miles to a minimum through their craft manufacturing processes if they choose to focus on these issues. Furthermore, closing the loop on waste in the production cycle by using shells for garden mulch, and recapturing cacao powder from winnowing process to make healthy high-antioxidant baked goods and powders are keys to the ecology, commercial viability, and health of the craft chocolate enterprises that can maintain more of the nutritional, ecological and ethical properties of the cacao chocolate than the industrial counterparts. A cradle-to-cradle manufacturing approach resonates deeply with a forest garden to local farmers market and food hub approach that is suitable

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<sup>249</sup> E. F. Schumacher, *Small is Beautiful: A Study of Economics as if People Mattered* (New York City: Vintage Books, 1993); Ivan Illich, "The Wisdom of Leopold Kohr," *Bulletin of Science, Technology & Society* 17, no. 4 (August 1997): 157–165.

to craft chocolate makers. Craft makers who use local, sustainable and seasonal ingredients, and keep milk, sugar, and preservative ingredients to a minimum, maintain more of the medicinal properties of the bitter *chocolatl* food medicines of Indigenous origin.

Dark chocolate does not have to be bitter if the cacao is properly fermented, cured, dried, and processed. Dark chocolate does not have to be conched for days on end to be delicious and doing so diminishes the health benefits of the end product. Exposure to air, and the application of mechanical energy for grinding that creates heat combined with high sheer processing of many chocolate mills strip the cacao liquor of its many complex chemical compounds which simply react with the air and escape the cacao liquor mass. Moreover, dark chocolate is not just to be consumed as a bar, but is healthy to drink, or an amazing additive in a cold fruit smoothie, or a spicy mole gravy.

Simple foods and ingredients using local ingredients and dignified labour to add value, meaning, and flavour in translocal (rooted in the local agriculture at origin, and combined with a rooted agriculture and craftsmanship at destination = translocal co-producer) and intercultural ways helps to add to the quality and educational dimensions of the cacao. Taste education and the teachable moment of cacao chocolate is a surprising opportunity for youth and adults alike to gain new insight into our food system. Below is a simple but impactful food literacy workshop imagined to renew and regenerate cultural and ecological understandings and opportunities of chocolate during a time of year where industrially unsustainable chocolates flood the marketplaces and homes across North America.

## 2b. Halloween Chocolate that is Not Scary: Food Literacy Campaign

Today's Industrial Halloween chocolates are about as scary as chocolate can get. Whether the concern is about allergens, about plastic disposable wrappers, the basic nutritional health of the candy, or for child labour exploitation associated with its supply chain, industrial Halloween chocolate is not good for planet or people by the standards we are defining here. Today's Halloween chocolate industry is a challenging nutritional, ethical, cultural, and environmental landscape. Industrial chocolate candy bars could be so much better than they are.

On the other hand, children love Halloween, and in North America in particular it is an important season to let one's creativity, generosity, and community spirit flourish. Unfortunately, much of this is now dominated by consumerism and chocolate products with many hidden costs. One could see the recent interest in and resurgence of the Day of the Dead cultural traditions of Mexico and chocolate as an example of the hunger people have to remember their dead, and to renew their place amongst the living. Originally that was the purpose of All Hallow's Eve and All Saints Day but these traditions faded in the era of consumer candies and commodity driven festivities like the modern Halloween.

For many people, the act of rediscovering the origins of chocolate in cacao has been a shocking and surprising moment that has led to a type of food literacy learning. Here is a food literacy exercise I have developed in my twin boys' junior kindergarten class to illustrate the opportunity for education through surprise and sensory education combined with inquiry-based curriculum methods:

1. Ask the question: “who loves chocolate?” 9 out of 10 kids raise their hands. Then ask: “who likes dark chocolate?” and 1 out of ten kids raises their hand because most kids that age don’t know what dark chocolate is.
2. Show the children a cacao pod and explain to them that the seeds inside that pod are what make chocolate. Then let them touch the pods and hand out roasted cacao seeds to all the students. Then challenge them to peel a seed without breaking it, and while that is happening you can talk about the nutritional benefits of cacao. The physical tactile element of discovery associated with the unfamiliar cacao seed is key here. The smell of the cacao is also important.
3. Then ask them to eat a small piece of roasted cacao, insisting that they must chew the bite at least 13 -30 times. Nine out of the ten children spit it out because it is too bitter. This perceptual dissonance between the chocolate taste they expect, and the bitterness they experience is a powerful teachable moment of surprise in which kids (and/or adults) can learn that what they love is not chocolate but sugar. Perceptual dissonance and surprise create a powerful teachable moment and can be a great segue to having them read the labels on the foods they eat in general (and not just the Halloween candies) to see in which place the sugar is listed. This teaching is the gateway to understanding what is being referred to on chocolate labels when a percentage of cacao is listed.
4. Now hopefully while the taste of the bitter cacao is still lingering in their mouths, give the students a bite of the 65% dark pumpkin seed chocolate that is free of nuts, dairy, soy, refined sugars, preservatives, additives, animal products, child



labour and non-biodegradable wrappers. Furthermore, the bitter cacao helps to activate their taste buds, such that the dark chocolate tastes extra sweet, and just like that the children have been introduced to dark chocolate, food politics, and the teachable moment of eating food that is good for the community, planet, taste, and body. The bitterness of the cacao prepares them for the deliciousness and teachable moment of dark chocolate.

5. Then pull out a kakai pumpkin (pumpkin with hullless seeds inside) and have the children work on getting the hullless seeds out of the pumpkin in a way that does not destroy it. The hullless seeds are high in protein and are delicious when roasted in a bit of salt, sunflower oil, and maple syrup. However, the kids can eat them straight up as well. Explain to them that if they want to eat the good chocolate, they have to do a bit of work to earn their treat. At the end of the job tell them they will not get to eat chocolate. Let them complain for a moment before relenting. Use this indignation to educate them about the fairness and unfairness of child labour in the cocoa plantations of Africa. But also explain to them that this is not the kind of child labour that children in Africa are subjected to. The problem is not children doing work, the problem is the unsafe, unfair, and exploitative conditions in which the children are working. Ask them how they feel about eating a chocolate bar at the expense of a child in Africa's health and freedom?
6. The kakai pumpkin is a regenerative crop from the perspective of soil because the meat from the pumpkin is mulched back onto the field and only the seeds are

removed. The year after growing kakai pumpkins on a field in Ontario the soil is loamier, to quote our local kakai pumpkin farmer Jacob Mackeller. However, using the kakai pumpkin as a carving pumpkin is an opportunity to learn about and practice a cradle-to-cradle approach to Halloween pumpkin carving. The kakai pumpkins in this sense are a symbol of a regenerative cradle-to-cradle approach to growing foods and adorning homes and altars, because we can eat the seeds and get a free jack-o-lantern at the same time. So, there is a secondary carving exercise that can happen at a later stage, and a tertiary workshop on composting that also happens at a third stage/workshop.

7. Finally, the children can take the deseeded pumpkin home and use it as a jack-o-lantern instead of buying one to simply throw away after Halloween. In this way the exercise is educational, cradle-to-cradle, and the next year if they are interested, they can grow a few pumpkins as an educational exercise in anticipation of the teachable moment of “Halloween Chocolate that is not Scary.”

### 3.SPIN + Convivial Tools and Techniques

According to multiple reports, the most sustainable form of agriculture—one that produces more energy in terms of food than it needs in terms of fuel and agricultural inputs—is small plot intensive agriculture<sup>250</sup> (SPIN). This form of agriculture is one of the oldest on the planet, and in the age of global communications and exchanges, it is poised to achieve new levels of productivity and permaculture design in the coming

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<sup>250</sup> Vandana Shiva, “Vandana Shiva on Two Futures for Food and Farming,” *Toward Freedom*, August 21, 2017, <https://towardfreedom.org/story/archives/environment/vandana-shiva-two-futures-food-farming/>

decades, combining seeds and plants from around the world in new polycultures. Many Indigenous peoples and homestead type peasant farmers already practice this form of agriculture today, rooted in millenary traditions. SPIN agriculture's overall contribution to North American diets continues to be eroded because it is not able to compete with the cheap price of lower quality industrially produced monocultures in the market game of low price and volume production, even though some global studies suggest that up to 70% of the world's food is currently produced by women practicing this type of agriculture.<sup>251</sup> SPIN is complex and creative, but not necessarily labour intensive except during planting and harvest seasons. Industrial monocultures use heavy machinery, fossil fuels, herbicides, pesticides, and chemical fertilizers, where SPIN uses polycultures to balance and regenerate soil nutrients, minimize damage from insects, and impede the growth of non-useful weeds through patient selection and cultivation processes.

Indigenous spiritual ecology was and is a form of SPIN. The Three Sisters, known as the milpa system of the field in Mexico, and the forest garden Three Pillars of cacao, vanilla, and achiote are two examples of SPIN agriculture rooted in complimentary companion crops. However, in today's overly simplified markets it is hard to sell polycultures of foods and spices from the field and forest gardens into supply chains. The market seeks low prices on volume purchases and uniformity of product, not nuanced resilient complexity of SPIN agricultural supply chains. Only a century ago SPIN agriculture ensured the subsistence+plus food resilience of communities and was the

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<sup>251</sup> "Women's Contributions to Agricultural Production and Food Security: Current Status and Perspectives," in *Gender Food Security: Synthesis Report of Regional Documents: Africa, Asia and Pacific, Europe, Near East, Latin America* (Rome: Food and Agriculture Organization of the United Nations, 1998), <https://www.fao.org/3/x0198e/x0198e02.htm>

basis of regional and seasonal gastronomy rooted in a seasonal diet that holistically tied together economics, gastronomy, ecology, politics, and preservation of habitat. This complexity of elements in SPIN is part of the power and meaning of the term ecogastronomy. However, today's youth in Indigenous villages of Mexico and the world over are tempted to buy their food at the local commercial stores, rather than engage in the work of tending and stewarding the land. This tendency is exacerbated by the fact that it is ever more difficult to sell a little bit of maize or cacao in the local market because of the flooded market from subsidized large-scale maize and cacao productions in distant localities. Cheap imports with environmental and social costs that are hidden have glutted the market all the way down to the little tiendas in the villages of Mexico Profundo with cheap alternatives to local maize and chocolate. The case of industrial corn has clearly shown this effect in Mexico, with its effect on *campesino* maize cultures<sup>252</sup>. This recognition of the culturally destructive nature of industrial agriculture on peasant food cultures was the basis of the “Sin Maíz No Hay País” (without maize, no Mexico) campaign. It is not difficult to argue that the same impact has happened on forest gardens of cacao, vanilla, and achiote. Cheap industrial cacao, artificial vanilla, and chemical dye from the industrial chocolate candy industrialists replace the true cost of that chocolate. This global marketplace creates a type of competition that can cripple the viability of the cacao forest gardens.

Therefore, in the age of globalization how can Indigenous cacao forest farmers feed their families while continuing to be the best cultural stewards of the forest garden

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<sup>252</sup> Baker, *Corn Meets Maize*; Esteva and Marielle, eds., *Sin Maíz no Hay País*.

commons? The answer, I believe, lies in regenerating and renewing the forest garden supply chain trade networks (subsistence=plus) in ways that technically and technologically deal with pests and plagues without using toxic chemicals and simplifying labour by creating more resilient polyculture forest architecture and pairing of companion crops. Moreover, how can a renewed ecogastronomy indigenous food sources flourish and feed communities in the age of industrial food inputs? It means adding more value at the village level and removing intermediaries from the supply chain between primary producers and ethical craft co-producers of quality cacao chocolate. Strengthening this dialogue of solidarity and reciprocity between producers and co-producers has been called direct trade, but this researcher prefers to describe it as horizontal trade.<sup>253</sup>

One answer to empowering producers seems to lie in what Ivan Illich described as “tools for conviviality”<sup>254</sup> or what Ursula Franklin termed “holistic” tools.<sup>255</sup> These tools, like solar panels, pedal machines, and low-speed high-torque multipurpose engines for transport and mechanical power, are versatile and oriented to the agency of the user, instead of being built to be obsolete or dependent upon vast supply chains and fossil fuels. Incorporating the Indigenous techniques and seed bundles with modern eco-convivial tools allows economic and use-value to be added in place and helps support the regeneration and resilience of Indigenous forest garden producers. To express this

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<sup>253</sup> “Sourcing Partners,” Chocosol, accessed November 11, 2021, <https://chocosoltraders.com/pages/sourcing-partners>; Christine Laliberté, “Maple Tree Forests Branching Out with a Cacao Forest Garden,” Chocosol, October 19, 2017, <https://chocosoltraders.com/pages/in-the-news>

<sup>254</sup> Ivan Illich, *Tools for Conviviality* (London: Marion Boyars, 2021).

<sup>255</sup> Ursula Franklin, *The Real World of Technology [Revised Edition]* (Toronto: House of Anansi, 1990).

concept of the renewal of the maize milpa in Oaxaca, a gourmet maize restaurant Itanoni<sup>256</sup> was born. In some ways Itanoni's work with maize was this researcher's inspiration for how to create an ecogastronomy social enterprise to engage in intercultural rediscovery and regeneration of the Indigenous forest gardens of Mexico profundo.

Amado Leyva and his partner Gabriela Leyva, Mexican agronomists and founders of Itanoni,<sup>257</sup> spent time with the Zapatistas. Inspired by Zapatismo they channelled their struggle into the attitude of reclaiming and regenerating the agroecology of the maize milpa in the form of a gourmet tortilla! This meant sourcing criollo maize, beans, and other traditional ingredients like squash flower, hierba santa, and epazote, right from the communal land of milpas surrounding Oaxaca, Mexico. In this way, the Indigenous farmers were able to commercialize not just the maize, but many of the other ingredients they could grow in a small plot and have a trickle of revenue for a longer and more sustained period of the year. These ingredients are part of the indigenous ecogastronomy millennia in the making and are used in recipes that celebrated the cultural traditions unique to the communities of producers and were flavourful beyond belief. Furthermore, by cutting out intermediaries in the supply chain and using simple convivial tools and techniques going from the milpa to the market, Leyva's project to regenerate the maize milpa gained momentum quickly. Through the social enterprise model Itanoni's rich and delicious gourmet maize food preparations helped to make the regeneration of the milpa a commercially viable option; by integrating supply chains with food preparation recipes

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<sup>256</sup> Itanoni is a social enterprise dedicated to regenerating gourmet tortillas from the milpa polyculture to the customer's plate founded in Oaxaca in 2005.

<sup>257</sup> Baker, *Corn Meets Maize*, 108.

that combined both small plot intensive tools and techniques from millennia of maize production and some modern technology with the best regeneration of traditional maize varieties and milpa systems Itanoni created a delicious example of a revolutionary alternative to modern fast food based on industrial corn byproducts. It was brilliant and for Gustavo Esteva, myself, and many others it was one of the best places to eat in Oaxaca, Mexico and still is! To do this Leyva and his amazing wife needed a quality stone grinder, a quality wood burning comal system, and a set of simple tools including wood cutlery and clay pots to prepare an authentic and delicious ecogastronomy with minimal capital and much creativity and initiative.

As addressed in Chapter 2 of this dissertation on the regenerative ecology of the forest garden, the Three Pillars cacao forest garden is a way to turn the sustainable Three Sisters field garden into a regenerative and perennial forest garden that can feed even more people for a longer time and create a kind of food cornucopia. The forest garden milpa completes the cycle of the maize milpa, renewing and regenerating both soil and forest while at the same time feeding the community and the animals for generations to come with perennial crops and regenerative resources. The scalability of this model is yet to be determined as the small plot poses some organizational challenges, however, this researcher sees no reason why it could not be implemented on a global scale through the joining of federations of SPIN farmers and artisans! An emerging initiative to create a forest garden spiritual ecology research site in Ontario, Canada is the next step in operationalizing this work to regenerate and rediscover the Indigenous inspired forest garden commons of old. In North America Maple Trees and the One Dish and One

Spoon.<sup>258</sup> The treaty fits nicely with this model of agricultural food forest research. I believe pairing up Indigenous youth from the villages that ChocoSol works with in Chiapas and Oaxaca Mexico, on a forest garden project in Ontario with local Indigenous youth and university student interns could yield a fantastic intercultural encounter and learning for all parties involved. A forest garden farm able to support and sustain and host this kind of intercultural dialogue, encounters, and learning while regenerating forest garden techniques and systems and crafting forest garden orchards and sustainable harvesting would be a huge opportunity. Furthermore, it would demonstrate how craft chocolate companies like ChocoSol are integrating more regenerative and nutritious forest garden foods and ingredients from their local foodsheds in creative ways that show best practice. Finally this initiative would help foster translocal trade and intercultural learnings, friendships, and exchanges thus creating more social sustainability and continuity through friendship.

For this researcher no crop demonstrates the opportunity for a rediscovery and regeneration of the Indigenous cacao forest garden more than our award-winning work with the Jaguar cacao. In the age of industrial monoculture, many traditional companion crops have not made their way into the global commodity markets. One example of this is the *patastle* “white cacao,” or the jaguar cacao, or *theobroma bicoloris* cacao as it is known in botanical taxonomy. For some not clearly defined reason, patastle (jaguar

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<sup>258</sup> A simple definition of this treaty is stated in the Ryerson University Indigenous Acknowledgement research project, it states: “Toronto is in the Dish With One Spoon Territory. The Dish With One Spoon is a treaty between the Anishinaabe, Mississaugas and Haudenosaunee that bound them to share the territory and protect the land. Subsequent Indigenous Nations and Peoples, Europeans and all newcomers have been invited into this treaty in the spirit of peace, friendship and respect.”  
<https://fsc-ccf.ca/indigenous-acknowledgement/>



cacao) never became a traded commodity. During my initiation to chocolate making in 2003 by a Zapotec grandmother in Oaxaca, Mexico, we used her great-grandmother's chocolate recipe which included cacao blanco as she called it. Those patastle seeds were processed in the pit method that I would describe as a type of pre-Hispanic “dutching” (alkalizing) process to make the chocolate drink more frothy.

Yet, when I attempted to buy more white cacao after that initial cacao grind, I was unable to do so, as this traditional forest garden crop was in decline at that time in 2003, and I didn't know where to look in the Central de Abastos labyrinthine market where Dona Hyacintha took me to buy that first batch of cacao. Fast forward to 2007 and I was introduced to Don Maximino Martinez, who was the traditional comisariado leader (mayor) of his Chinantec village in the Chinantla region of Oaxaca, birthplace of vanilla and home to some of the most ancient varieties of pre-Hispanic criollo cacao. Don Max had three kilograms of white cacao and was working to find a way of regenerating the watersheds, soils, forests, and local commerce of his village by creating an ecological stewardship accord for his community. Federal government projects had first introduced coffee in the '70s, but when the bottom fell out of the coffee commodity market, struggling farmers cleared forests for the next government-sponsored economic project of raising cattle. Needless to say, neither the slopes, nor the soil of the Chinantla were ideal for cattle! Much erosion and pollution and loss of habitat is associated with these industrial-oriented agricultural shifts in the Chinantla. The Chinantla is an ideal habitat and climate for cacao, vanilla, and the mid story tree that produces jaguar cacao. When the forest gardens and the subsistence+plus trading networks are intact, the communities

are the safety belt around the forest garden jungles, and in those forest garden communal lands the habitat of the *tigre florido* (flowered jaguar) is preserved, and Grandfather Jaguar still carries his teachings as the Jaguar de Luz (Jaguar of Light) in the Indigenous spiritual teachings and Nahuals.



FIGURE 3.3. Cattle Pasture on an Unsustainable Slope. Picture of a steep slope where cattle are grazing on the side of the road in Chinantla.

Since 2007 in friendship, solidarity and a relationship that was not reducible to commerce, Don Max and I spearheaded the planting of more than 30,000 jaguar cacao

trees, and since 2012 we have renewed our efforts to plant rose of cacao, vanilla, and heirloom cacao trees in the forest garden regeneration work. We have used eco-chocolate making as a vehicle to support this regeneration and sustain the relationship, and the delicious and gold medal winning chocolate known as Jaguar Chocolate is the by-product of this renewal of the old traditions of the white cacao.



FIGURE 3.4. Criollo Cacao. Picture of Don Maximino Martinez in front of his house holding a criollo cacao tree we helped to identify and plant on his home orchard plot. Taken by Michael Sacco.





FIGURES 3.5 and 3.6. Miriam and Beto Martinez of the community of San Felipe de Leon proudly held the awards to post in their village-scale processing plant. Photos taken by Michael Sacco in 2019.

Furthermore, we identified two great barriers to the regeneration and scaling process of the jaguar cacao: preserving it from bug infestations and peeling the thick shell from the seed. To deal with these issues and continue our work of regenerating the forest gardens and preserving the traditional forest garden habitat of the jaguars we developed a village level system for (a) fermenting the jaguar cacao, (b) cleaning the jaguar cacao, (c)

drying the jaguar cacao, (d) storing the jaguar cacao so that it would not be infested by moths and other insects attracted to it, since the jaguar cacao is not as bitter and is much lower in tannins than the red cacao, and (e) sterilizing and peeling the thick shell of the jaguar cacao at the village level. All of this labour is done and paid for at the village level creating a buzz of energy around the work of strengthening the forest garden cacao production.

The jaguar cacao planting and regeneration project was the focus for over a decade from 2007–2017, it has been the anchor by which we have slowly but surely been able to participate in renewing other dimensions of the forest garden, especially the vanilla and the heirloom cacao of their grandmothers. This project is now so successful that not only has a new category been created at the International Chocolate Awards of the Americas, but it is also more than likely that the little remote village of San Felipe de Leon Oaxaca is the world's center of production for Jaguar cacao, and I can think of no more aptly suited place for the terroir to take root. In Chinantec the village is called Ye, the Jaguar is called Ye-Li, and the Jaguar cacao is called Ye-la. Furthermore, the Jaguars are the guardians of the forest gardens keeping the pesky squirrels, toucans, and monkeys at bay who fiendishly enjoy eating the delicious fruits of the red cacao trees that grow beneath the jaguar cacao trees. The good news is that the jaguars are still alive and well in the Chinantec forest gardens as various photos from the trail cameras of the municipal governance office have shown. However, it is unlikely to run into a jaguar unless one is in the jungle at night, as this is their preferred time for hunting.



FIGURE 3.7. Cacao Blanco Workshop. Community members and family work to peel the cacao at the village scale under the supervision of village Elder Don Maximino Martinez. Taken by Michael Sacco in 2019.



FIGURE 3.8. Cacao Blanco Reforestation Plot. Picture of Don Maximino Martinez in front of a patastle regeneration orchard that ChocoSol and Don Max sponsored dating back to 2012. Taken by Michael Sacco in 2019.



FIGURE 3.9. Cacao Twins Co-fermentation. Photo of Michael Sacco and Don Maximino Martinez working on a red and white cacao cofermentation experiment at the village level in 2018. Bringing the two fruits together in the complexity of fermentation has tremendous potential for developing the flavour profile of both seeds including their digestibility! This research around fermenting and co fermenting the Cacao Twins is original experimental research in the cacao post-harvest community scale field, photo taken by research assistant, Christou Christou, in 2019.

In the next steps the regeneration project must continue to enroll the youth in this village scale project, in particular training them in the eco-technical processes of stewarding the forest gardens and processing and preserving the best quality cacao, vanilla, mamey and other forest garden products. Strengthening the other polyculture



outputs of the forest garden is important to avoid over-specialization and the problems of disease and market collapse. It is our hope to do this by finding ways of engaging the youth in intercultural exchange projects between Ontario and Oaxaca, creating more and stronger ties between youth and elders on both sides of the intercultural bridge while at the same time learning and applying ecologically regenerative techniques. A big vision and research question is centered on the regeneration of the forest gardens and finding ways to support the villagers in the hard work of tending and relearning the art of cultivating traditional forest gardens. As a result of workshops and training, the villagers also started their own independent chocolate shop—making a jaguar infused traditional chocolate—and have been able to keep the project going for almost a decade.<sup>259</sup>

The goal is not to introduce social enterprise into these traditional villages in a way that causes them to be colonized by business and only value the forest gardens for their potential income. Instead, the goal is to work with the villagers to find ways of valuing and adding value to their product in a way that regenerates the values and value propositions of their traditional forest gardens and strengthens those linkages to their traditional Indigenous village and land governance model called “*usos y costumbres*.” Hopefully in seeing the opportunity of this kind of intercultural encounter and trade the village leaders can help implement more diversity in the renewal and regeneration of the forest gardens including heirloom red cacao, medicinal rose of cacao, achiote trees, vanilla, mamey, and tropical hardwoods and nitrogen-fixing trees.

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<sup>259</sup> Beatrice Guzzi, “Cacao’s Unlucky Cousin: Pataxte: A Superfood in the Making,” *The New Gastronome*, n.d., <https://thenewgastronome.com/cacaos-unlucky-cousin/>

Put in another way: social enterprise is not the answer to Indigenous forest garden regeneration, but social enterprise can be the cash crop tree out of which regenerative polycultural forests today can be incubated and arise. Social enterprise is part of the forest garden—it should not become the bottom line of the forest garden. Social enterprises can create social compost for forest garden regenerations through initiatives like the jaguar cacao project in Chiantla. As Gustavo Esteva says, Indigenous social movements are putting commerce back in its rightful place of community life, a marginal one. Keeping the metaphor of the forest garden, the pillar of commerce should not be the central column but one of the supporting pillars in the village scale remaking of the forest garden. Imagine the forest garden pillars like the columns of a temple or a longhouse; they are not designed to define the purpose of the building, though they do shape it. This is a functional analogy for an approach that does not exclude trade or commerce, but it most definitely does not make economic activity the core of its “raison d’être.” This perspective that is not reducible to commerce is one of the most fundamental differences between the Indigenous forest garden model and the Western environmental agro-ecological models. Combining small plot intensive agriculture and the tools to add value at the community level, means that the most sustainable and regenerative agricultural products can go direct to market, though they will be limited in scale.

#### 4. Soil Culture and Re-Imagining Waste in a Cradle-to-Cradle Way

Etymologically the words culture and cultivate are rooted in the human relationship to the land. At a Zapatista conference in 2008 I was blown away to hear

Subcommandante Marcos describe the Indigenous people as the people the colour of the soil. For me this resonated with what Ivan Illich described as a call to inquire into a philosophy of soil<sup>260</sup>, arguing that regenerative cultures strengthen the matrix of relationships between sun, soil, water, and human culture. As Mohawk Elder Tom Porter describes in his book *And Grandma Said*, when SkyWoman dances on the turtle's back, the shuffle dance that causes the grains of sand brought up from the watery sea bottom by the muskrat to grow and multiply is a deep symbolic reference to soil cultures.

And so the woman took the dirt. And she put it there in the middle of the turtle's back. And then she started a kind of sideways shuffle walk in a circle where that dirt was in the middle. And as she started to move she started chanting the language of Karanhia;ke, for that's where she was from....And as she went around there, the miracle of birth began. And the granules of dirt began to multiple and grow. Instead of a little speckle, it had become a pile. And as she continued to wing or to chant that song, it began to multiply even more. And not only that but the turtle began to grow bigger in accordance with the growth of that dirt.<sup>261</sup>

By making the Turtle Island's back grow I hear a reference to the way Indigenous culture was the culture that created soil abundance instead of depleting soil and creating scarcity. In a certain sense only a culture that creates healthy soil is deserving of the name culture, but only a culture that understands the deep cycles of death, compost, and rebirth, flourishes and regenerates in the epochal sense!

The basis of the food of the gods, cacao, as discussed in Chapter 1 and 2 of this dissertation, is that one must begin with the soil of the gods! However, in this section I am interested in looking at the ways in which this deep teaching and cultural orientation

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<sup>260</sup> Ivan Illich, "Declaration on Soil: A Joint Statement, Drafted in Hebenshausen, Germany, December 6, 1990, in Collaboration with Sigmar Groeneveld, Lee Hoinacki and Other Friends," accessed April 15, 2022, [http://www.davidtinapple.com/illich/1990\\_declaraion\\_soil.PDF](http://www.davidtinapple.com/illich/1990_declaraion_soil.PDF)

<sup>261</sup> Porter (Sakokwenionkwas), *And Grandma Said*, 52.

towards soil-making can be operationalized in a cradle-to-cradle cultural practice in modern contexts and through various initiatives. How can regenerative soil-making initiatives be tied together by the daily rituals of culture, agriculture, and cacao production? If we can make these connections and customs of daily life more ecologically regenerative, then we can stop the rush to find solutions and instead start living in such a way as to begin addressing issues of climate and environmental change through the direct vehicle of our daily habits and rituals of production. The real revolution in this sense does not start with seizing power, but when ordinary families and communities adopt extraordinary behaviour that embodies their commitment to resilience and ecological regeneration. A practical way to see this is to imagine an agriculture, production, use, and downcycle that is best described as cradle-to-cradle. Below are four proposed regenerative soil-making initiatives:

- a) KaKa-carbon
- b) Soil mounds as cradle-to-cradle by-products
- c) Carbon credit assistance
- d) Sacred groves

#### 4a) KaKa-Carbon

Example A in this approach would be looking at how to dispose of our feces, bones, shells, and local biomass in a way that regenerates and renews the soil mounds out of which the forest gardens can spring renewed and local waste can be transformed into agricultural inputs! Some might ask if composting toilets and biochar approaches are key to the regeneration of the forest gardens, however, this researcher feels that they are key

strategic points to this work as they are not only connected to daily needs of all humans, but also helps to conserve water, regenerate soil, and cultivate hygiene and low-tech sanitation. Furthermore they are inspired by millenia of IK.

Vernacular architect and inventor of the Mexican dry-composting toilet, Cesar Anorve, has begun envisioning the integration of biochar into his proven dry-composting system called KaKa-Carbon. However, I believe there is an opportunity to take this one step further by integrating high-efficiency biomass stoves for heating water and speeding the drying process in the two-chamber dry-composting toilet system with warm exhaust from the biomass stove while creating hotwater. While speeding the drying and generating hot water for washing hands or taking showers can be integrated into a clean, low-tech, durable, and holistic approach that provides a clean, hygienic way of disposing of human feces and urine. By tying this system into a simple rainwater capturing and filtering system, it could be used in remote cacao growing villages or by urban dwellers alike. At this point I am unable to find any examples of this in practice today, however, it has long been a theory of this researcher that *terra preta* of the indigenous peoples of the Americas was rooted in the disposal of waste from the villages in ways that multiplied the microbiological fauna of the soil while disposing of the waste of the village hearths and households, to achieve this would be as simple as adding some bokashi soil microbes to the mix. This amounts to including microbial organisms to a carbon and calcined lime waste pile to multiply the beneficial soil biota. The *terra preta* soil matrix most likely combined waste, refuse, ash, charcoal, calcined lime, and soil rich in microbial life, and time. In this sense soil-making was a by-product of Indigenous cultures, habits, and

production rituals. The above-mentioned composting unit and shower, seeks to find a holistic technique and technology that can champion this approach and create a positive example of regenerative technique and technology for daily human needs and for organic regenerative agricultural farming, meaning finding a culturally appropriate and integrated solution that is practical and useful as well as ecologically regenerative.

Instead of just burning wood for hot water, the above stove would help to create a biochar soil nutrient enhancing system and would also integrate the feature of pyrolysis, which is the burning of wood, shell, or bone in a low-to-no-oxygen environment. Creating a calcined lime and charcoal by-product as an input to be used and combined with the composting toilet is a key goal of the system. Charcoal only becomes biochar when it is properly charged in a composting step as in the composting toilet. Furthermore, by venting the exhaust from the bio-stove through the drying chamber of the composting toilet the drying time of the humanure chamber would be greatly diminished. Finally, the air intake for the biomass stove could be pulled from the composting toilet, creating a pull of methane gases that would burn in the high-efficiency gasifier stove—generating heat, reducing odour, and helping to speed the drying/composting process.

Two ideal locations where this kind of technique and technology could be tested would be the following:

1. At eco festivals/sites as an alternative to port-o-potties. Instead of polluting stinky port-o-potties, give festival goers and site visitors the opportunity to make an “eco-depo-sit” of \$2. For a modest eco-deposit fee of \$2 users could poop in the luxury of sanitary units maintained and sanitized by an attendant between uses as

bathrooms in days of old. At festivals this could be a little luxury for those people who find the odours of the port-o-potty hard to handle, and moreover the hospitality animator of these units could double as a community arts animator/educator. At the end of the eco festival the waste created would be slated for combination with clean food scraps for composting, and transformed into carbon and nitrogen rich soil mounds for agricultural lands on site or nearby. The motto of this social enterprise that at once educates, and provides service, creates fertile soil and revenue would be: “turn poop into gold”<sup>262</sup> with the idea of providing service to 1000 guests per day, and a long-term offset and conversion of waste into perennial crops like trees and other functional carbon and nitrogen sequestering crops. This system could create carbon offsets and carbon credits in one technique and technology, while at the same time providing momentum for regenerative agriculture models and community education.

2. An opportunity at origin of cacao forest gardens would be to utilize a parallel system of implementation of these kaka-carbon composting toilets with cacao growers who would be committed to providing weekly maintenance to the units and using the by-product soil and urine as alternatives to chemical N,K,P fertilizers in the forest gardens and keeping a record of volumes utilized. This could be tied together with mounds or pits upon which new seedlings would be planted and could be quantified in a system that is focussed on measuring carbon and nitrogen regenerative approaches to agriculture starting in the soil and

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<sup>262</sup> Here is a link to a German initiative that is doing something similar:  
<https://www.goldeimer.de/unseregoldeimer/>

enhanced by the offsets, but also being measured in the biomass as polyculture forests that grow as a result. The idea is to create a household/farmscale unit that is so clean, functional, and easy to repair and service, that families will be willing to pay for one, and in the process get automatically enrolled in a carbon and nitrogen regeneration project that is tied to their commitment of integrating the soil technique and humanure composting package in regenerative subsistence+plus agriculture models. It is key that only primary producers interested in buying the unit and being part of the measurability be allowed to participate, and not charity and do-gooder initiatives. This is because giving the units away to uninterested partners results in their inevitable misuse and setting of a bad example that can diminish the replicability and communications of the project. However, there are many other possible dissemination scenarios.

Charcoal, ash, and humanure, with added calcined lime from waste bone or shell materials will be an excellent amendment to soil structure and nutrients, not to mention putting a measurable amount of carbon and nitrogen in soil, while providing a measurable reduction in emissions through replacement of other forms of sanitary systems associated with centralized water toilets and gas-powered water heaters commonly utilized in off-grid situations. This is a solution that solves a pattern in creating a regenerative tool, technique, and soil amendment input towards regenerating the cacao forest gardens.



#### 4b) Soil Mounds as Cradle-to-Cradle By-Products

Example B is Forest Garden Transition Mounds: embodying the cradle-to-cradle regenerative approach that connects processors and agricultural production in regenerative feedback loops.

Regenerating the Indigenous techniques of soil mounds could be a by-product of a cradle-to-cradle eco-cultural approach to dealing with the by-products of human waste, and food scraps, and does so in a holistic manner that can fuel further growth and regeneration of forest gardens. In the case of chocolate makers, waste cacao and coffee grinds could be combined with food scraps and fed to worms or placed directly in burlap sacks with 1:1 ratio with a long list of other functional soil amendments sourced from waste products including micro bacterial soil cultures like bokashi. These mounds would be left to compost on the land for 6 months, and then would be used as microsites for planting trees and perennial crops designed to outcompete weeds and other plants.



Figure 3.6 Mound Garden Regenerative Experiment. Above is a 2016 experiment with creating a permaculture and regenerative mound garden in Chatham, Ontario with the help of farmer Paul Spence. Photo by Michael Sacco.

On the south side of the mound, sun-tolerant perennial crops like blueberries, strawberries, raspberries, mint, sweetgrass and many others, would provide perennial outputs for years to come. On the north side of the mound, trees associated with the regionally appropriate forest garden polycultures would be planted. Mounds would be dense enough to allow for thinning of trees, for usage at the five-year mark that could be

sold for fence posts or for Christmas trees, or for seedlings to be transplanted in urban environments for hedge making. Fruit trees, hardwoods, and nitrogen-fixing trees would be balanced with shade-tolerant understory shrubs like sumac and elderberry in the North to provide a low-maintenance approach creating a regenerative approach. In the global South, the thinned mounds at year five could have cacao trees planted with vanilla vines to flourish in the shade of the maturing forest shade trees like the madre cacao, the patastle, the ceiba, or the mamey. Families willing to convert pasture or depleted soils into these systems could be compensated in the short term with funds associated with measuring the ecological services or carbon credits. In the mid- to long term, compensation would come through the sale of the high-value polycultures and a trading network strengthened since day one of the project's relationship to a federation of direct trading networks, connecting producers with networks of co-producer artisan chocolate makers sprouting up across the globe. In a sense these projects would start by building upon proven relationships that foster good examples. These projects would identify and work with the willing, not provide handouts like too many funding projects that fall to the wayside once the funding dries up. Funding is a type of fertilizer, dependence on too much funding is like a chemical fertilizer that does not build soil structure or resilience, but a bit of funding at the right time and place, can set the plant's development on course for a regeneration!

#### 4c) Carbon Credit Assistance

Example C is carbon credits made real. Wrapping carbon credits in a delicious bite of chocolate that people can sink their teeth into, instead of abstract carbon credit

projects that do not strengthen cultural shifts towards a low-carbon economy is functional. This kind of chocolate is a symbol of ecological regeneration and helps to give a body to the abstract carbon credit economy. Moreover, cacao forest gardens can be a vehicle for renewing and deepening our understanding of the role that both soil and plants play in the forest garden sequestering carbon and nitrogen. By creating a regenerative approach to agriculture, the cacao forest gardens by design could be tied to co-producer networks interested in quantifying their commitment to change through organizations like B-Corp, Slow Food or other civil society organizations interested in being part of the change and finding ways to quantify it for carbon markets.

Using a carbon credit analysis, it would be beneficial to create a modest credit-generating system for these regenerative approaches. Alone, the carbon credits would not make the work feasible, but if the carbon and nitrogen credits in the soil were combined with the credits associated with the growing trees and the best practices approach for regenerative food supply chains, then these carbon credits could help “fertilize” and sustain the work of planting trees whose value will not immediately pay off for those planting them. By combining a transition mounding approach, a model could create revenue in year 1 from annual crops, in year 2 from both annual crops and berries, and in year 5 and beyond from fruit trees. Questions that would need to be answered using simple, accountable, and measurable methods would be like the list below:

1. How much carbon and nitrogen are put into healthy soil mounds in the form of charcoal and calcined lime fertilizer?

2. How many emissions are reduced by dealing with waste in a cradle-to-cradle fashion using upcycling and diminishing our dependence upon centralized waste disposal systems?
3. Yearly, how much carbon and nitrogen are being added into biomass in the form of the growing perennial trees and food shrubs?
4. How much carbon and nitrogen are being stored in the soil as a result of carbon and nitrogen focussed composting mounds?
5. How many transplants and Christmas trees are being achieved and replaced by a cradle-to-cradle short-term thinning approach in the mounding enterprise?
6. How many food miles are being eliminated by tying together food cultivation and waste disposal in a cradle-to-cradle regenerative approach?

#### 4d) Sacred Groves

Example D is Sacred Groves: regenerating death and burial practices. When this researcher tries to talk to people about using their human remains to plant regenerative forest gardens they give me a look like: "You've gone too far on that one, Mr. Deep Ecologist!" However, in the Indigenous teaching of the way in which the Maize God becomes the soil and fertility for the Cacao Twins birth, or in the way that SkyWoman's daughter is buried and the mound and becomes the food for the Three Sisters crops, we see not only a symbol, but also perhaps a practical insight and vehicle for helping families and communities to reconnect to the land where their loved ones are buried.

And her daughter was laying there on the ground. So the mother took a container and she went and got dirt. She carried it back and she began to put the dirt on her daughter. She began to cover her body...She didn't bury her under the ground. She put dirt on top, like a mound...This is when we began calling it "our Mother,

the Earth”...and where her head was in the mound, there appeared above it one plant...That was corn. And right next to it came what they call squash-pumpkins, watermelon, cantaloupes....and a third one that started growing right there could wrap itself around the corn. And that was the beans.<sup>263</sup>

In Oaxaca, Mexico, it is not uncommon to find inner courtyards where grandparents and ancestors were buried, and upon their remains their favourite tree was planted.

What if another way to fund this regenerative forest garden ecology and spiritual ecological culture is to allow the willing, to have their remains become the substrate of the soil mounds in a way that creates no emissions or toxic leaching from current embalming and burial practices? What if the food forests would be like zen gardens for cultivation, meditation, and reflection, and not just agro-economic inputs in an economic-centric food system? What if communities and families could plant sacred groves that would tie their family ancestry to the land in a way that feeds future generations for seven generations to come? Is that such a radical idea? Why is it so hard to imagine our own deaths and to imagine being reborn in our service to future generations? Why is it so difficult for people to imagine that their service to future generations could come in the form of leaving a living, healing, legacy, in whose shade future generations could rest, without it having to be about the individual's name and title? Our imagination around our life and death purpose deeply needs renewal and IK teachings are good food for the modern imagination when it comes to this topic. For some life only takes on its deepest sense when we realize that there is much more death than life, and that we only live on through our service to future generations, and not by aggrandizing our individuality. In the soil we should not just see potential, we need to

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<sup>263</sup> Porter (Sakokwenionkwas), *And Grandma Said*, 58.

learn to see the death and service of the countless beings that came before that created fertility and soil cultures. Those willing to plant trees in whose shade they will never sit, are providing a service that goes beyond individualism, and in their death are worthy of the title “ancestors.” The spiritual ecology of the forest garden cultures is interwoven with the art of living and dying, feeding, and serving. Soil-making and feeding the soil and forest gardens through the above initiatives and numerous others will be key stepping stones to the viability and regeneration of these cultural traditions that need to be reimagined, reinvented, and reborn.

## The Shape of the Coming Transition, Transformation, Regeneration, and Re-evolution

The logical progression of this dissertation was as follows: In chapter 1 examined and attempted to unpack the 20 IK teachings of the medicine of cacao, and demonstrate the spiritual ecological origins of the cacao forest garden backed up by the *Popol Vuh*, and 20 years of study, reflection, and meditation on the cacao, and aided by previous studies on maize. The goal was to open windows and doorways to understand Mexico profundo and the Indigenous spiritual ecology of cacao and chocolate more deeply and holistically. The goal of this reflection and meditation on the myths, and the IK of cacao and chocolate in Chapter 1 was to help feed our modern understandings and imagination in an intercultural, regenerative and spiritual ecological manner, and to set the groundwork in terms of IK for the transition theory from maize milpa to cacao forest garden milpathat is presented in Chapter 2.

Chapter 2 looked at the concept of strengthening and operationalizing a regenerative spiritual ecology of the cacao forest gardens as a way to mitigate the danger and challenges of climate collapse through a proposed understanding of the cacao forest garden as a unique ecological approach to agriculture. The outlined transition theory from maize milpa to cacao forest garden simultaneously strengthens the food security of Indigenous and campesino producers, while at same time fostering a regenerative subsistence+plus field and forest garden approach that creates an abundant cornucopia. The transition theory described in Chapter 2 seeks to explore how combining field and forest garden milpa relationships can renew a millenary ecologically regenerative food tradition that is viable, profitable, nutritious, delicious, and actionable in a way that supports the cultural regeneration of the Indigenous cacao forest gardens.

Chapter 3 sought to look at concrete actions and initiatives that could support and reinforce the economics, ecology, and resilience of the cacao forest garden from the perspective of actionable strategies while focussing on 4 current and future avenues of research and development. In particular the focus is on supporting small producers, and creating opportunities for the formation of regenerative small producer and co-producer federations.

What still remains to be described and explored are some of the characteristics of how the Indigenous cacao forest garden commons is an example of a radical pluralistic intercultural politics. In this sense the medium of cacao and chocolate are able to share a deeper message about intercultural dialogue and encounter, and the emergence of a new kind of paradigm inspired deeply by Indigenosu ways of knowing.



One of the dangers of this intercultural analysis is the threat of hybridization of different cultural ways of understanding forest garden regeneration. For example, agroecology and spiritual ecology are different ways of understanding and justifying the importance of forest garden regeneration; though similar they are not the same. In intercultural terms this similarity of function but difference in meaning is called a homeomorphic equivalent. This means that these words/concepts play similar roles in understanding, but that they have fundamentally different horizons of intelligibility within their respective Western and Indigenous cultural matrices. For example, for an agroecologist the most important issues would be to create sustainability and food security in the age of climate collapse. Whereas for Indigenous communities practicing spiritual ecological techniques sustainability and food auto sufficiency are elements of the forest garden, but so too is the survival of their communal and cultural ways of being and their millenary connection to the land and all of its beings both visible and invisible.

There are opportunities to create alliances, encounters, trades, exchanges and dialogues of “ways of knowing” between agroecologists and Indigenous communities practicing traditional forest garden agriculture. This dialogue and non-reducibility or non-reductionism are the context and prerequisite for intercultural dialogue and encounter. Not reducing the ways of understanding the forest garden to either spiritual ecological or agroecological understanding is an example of an intercultural dialogue around ecology, sustainability, and regeneration.

It is worth noting from an IK perspective that agroecology does not go far enough to address the cultural malaise of modern consumerism and materialism. All the

agroecology in the world will never be “enough” to stave off the degradation of environment and community, if culturally speaking the underlying questions of scarcity, consumerism, and competition implicitly in modern economic society are not questioned.

From an IK perspective, then, the spiritual ecology of cacao forest garden commons expresses a more radical pluralistic alternative to the reductionist economic model by:

- strengthening auto sufficiency
- strengthening a sense of proportion and complementarity amongst plants, animals, soil, water, and humans
- strengthening local resilience and subsistence+plus food abilities to produce and add value locally to foods and spices that can be traded trans locally and in solidarity
- feeds a hunger expressed by Indigenous and non-Indigenous people alike for a world in which cultures and communities do not ‘live to sell’ their labour or their products but live in a dignified and spiritual ecological way according to their cultural traditions in place. This is the sense of the forest garden commons that roots people and connects them to place

Remaking the new commons, and the role that forest gardens can play in this both practically and symbolically is one of the deeper points of this exploration of the IK of cacao and chocolate. The enclosure of the commons that began at least 1,000 years ago forced peasants and Indigenous peoples off the land and into a new economic context where, to survive, they had to sell their labour or their product. They could no longer

subsist from the commons. Furthermore, the loss of the commons broke down the common senses of the community. The cacao forest garden could become a scaffolding of sorts, a matrix and shaded grove, a social compost out of which the remade and reimagined intercultural commons can and is emerging. The cacao forest garden and the spiritual gift currency of the cacao retain their teachings and medicines that feed the imagination, the heart, the body, and the soils in ways that nurture the emerging shape of this transition towards a world in which many worlds are embraced. By nature, this regeneration must go beyond the politics of the nation state. Nor is this intercultural paradigm shift a wishful return to the Indigenous governance models of old. Instead, something re-n-ewed, re-invented, re-evolved, re-made, re-born, re-discovered, must emerge, and is already emerging through Zapatismo and other Indigenous inspired movements. This is the new horizon of intercultural radical pluralism called for by thinkers like Robert Vachon and Gustavo Esteva.

Bringing this research home means cultivating it in one's daily habits and rituals. It means living it and being willing to plant trees in whose shade we will never sit. It means service in a sense that transcends the impoverished modern sense of that word. In July of 2019 a dialogue with two of my most respected Elders and moral teachers helped to bring this research dialectic of 20 years into another full circle of understanding. This was done in dialogue with two elders, one of Western origin and 50 years of experience working with Indigenous communities, and one of Mohawk ancestry. Beyond the cacao forest gardens of Mesoamerica and the maize milpas of Mexico, these teachings stretched southwards and northwards. For this researcher re-discovery and regeneration cannot be

limited to the cacao forest gardens, as cacao does not grow in Canada, and Canada is where I spend most of my daily labour. Instead, hope must be grown locally if it is to endure and flourish. In Ontario where the maple and the white pine are the symbolic trees of the forest garden commons for the Haudenosaunee peoples, the opportunity for a Indigenous inspired forest garden commons is taking shape.

### **Sitting with the Questions, and Sitting with the Elders: Bringing the Research Journey Home**

So, in closing, I will attempt to come full circle, in a way that reflects the way these 20 years of work are interwoven and connected. Coming full circle in some ways is like a type of Socratic ignorance, where I know that I still have so much to re-discover and learn, and yet I have learned so much. There is an element of the Hegelian dialectics of history whereby I see that my understanding of these spiritual ecologies and insights are constantly coming together, breaking apart, being composted, and re emerging or rebirthed in surprising new ways. Similarly in the medicine wheel of daily, seasonal, and yearly living and dying I see how these teachings and insights are lived and colour the four directions of our paths. These different cultural lenses and critical tools for understanding are part of this researcher's intercultural way of exploring the content and the hope of these concepts in a way that is lived and embodied, that is to say through food actionism.

However, nothing seems to have brought these teachings home more than finally meeting and sitting with the Mohawk elder, whose close friendship with Robert Vachon shaped my understanding of interculturality for the past 18 years. In July of 2019 I was

able to visit Mohawk elder Tom Porter with my friend and PhD advisor Don McCaskill. Below are two pictures taken on that visit when Tom took us to a sacred gathering space the Mohawk people used to gather in for special ceremonies. It was a beautiful day and Tom drove us around the whole valley and shared his love and the deep history of his people's connection to it, including the rewriting of the histories of some of the monuments that showed the troubling history to the colonial wars and the American revolution.



FIGURE 3.10. Sacred Pool. These pictures are taken by Michael Sacco on a visit to Tom Porter's home and research center in Canajoharie, New York State 2019.

As I listened to Don McCaskill discuss with Tom Porter about his thoughts and insights about IK teachings, I gathered some powerful insights and reflections that helped me to further understand Robert Vachon's work on interculturality that 20 years earlier had inspired me. Moreover, I see these insights as not only guiding my work and research

on cacao and chocolate, but guiding my work and thinking about spiritual ecology, the remaking and reimagining of the new intercultural commons, and the challenges of remaking and reinventing new spiritual ecological cultural rituals and customs for the 21st Century. These new customs and rituals range, from composting techniques and forest garden crops, to seasonal food celebrations and urban ecological waste customs and habits that express a more cradle-to-cradle approach. Here are three of the teachings and insights we received when we visited Mohawk Elder Tom Porter in the traditional Mohawk lands of Canajoharie valley, NY.

### Guswenta Translates to Mean Something Like, “It Shines Clearly, It Is Clear, and it Refers to the Way that Sunlight shines from the East and Clarifies and Illuminates One’s Duties”

As I mentioned at the beginning of this concluding section of this dissertation, the Guswenta trilogy, as written by Robert Vachon of the Intercultural Institute of Montreal on behalf of a group of Mohawk elders, including his dear friend Tom Porter, was a big influence on my understanding of the transformation of my own thinking after spending 5 years living at the grassroots in Mexico profundo working with Indigenous communities and civil society networks like the Universidad de la Tierra.

After presenting Elder Tom Porter dried sacred tobacco and a birchbark basket of living sweet grass and a bag of sacred cacao chocolate, I had the opportunity to share how I came to know Robert Vachon, and through him be introduced to Tom Porter’s writing and teachings. I also had the honour to hear some of my dear friend Robert Vachon’s life stories as told by his dear friend Tom Porter.

I was also there with Tom Porter's long-time friend Don McCaskill with whom he had worked for almost 40 years. It was beautiful to hear right from Tom Porter's mouth how his brave good friend Robert Vachon stood with them in Akwesasne and in the Oka crisis. It was inspiring to hear how Tom, who was then acting chief in Akwesasne, asked Robert to march with the women against the New York State Police, and to protect the people from state sponsored violence in a way that showed true courage and intercultural love and friendship.



FIGURE 3.11. Young Robert Vachon and Tom Porter Photo. This photo was shared by Kalpana Das who took the photo. Kalpana was a longtime collaborator of Robert Vachon and friend of Tom Porter's.

Tom shared with us what the word Guswenta means in Mohawk meaning "it shines forth," or "it is clear." Remembering of course the problem of translation, it was

key to understand what this meant in the context of the wampum agreement of the Guswenta. However, Tom reminded us that there were many different Guswenten and not just the Two Row Wampum. In fact, the Wampum for the 5 Nation Mohawk Confederacy with symbolized by the 4 interconnected units with the white pine of peace at the center was a Guswenta that represented the right, clear, accords and relationships between the 5 Haudenosaunee communities: (Seneca, Cayuga, Oneida, Onondaga, Mohawk). The White Pine of Peace in the middle not only represents the sacred fire, and the Tree of Peace, but also the Longhouse and its strong rafters. During this visit, I also came to see the White Pine symbol as a connection to that sacred forest garden culture of the Haudenosaunee from the perspective of how the forests supported their culture.

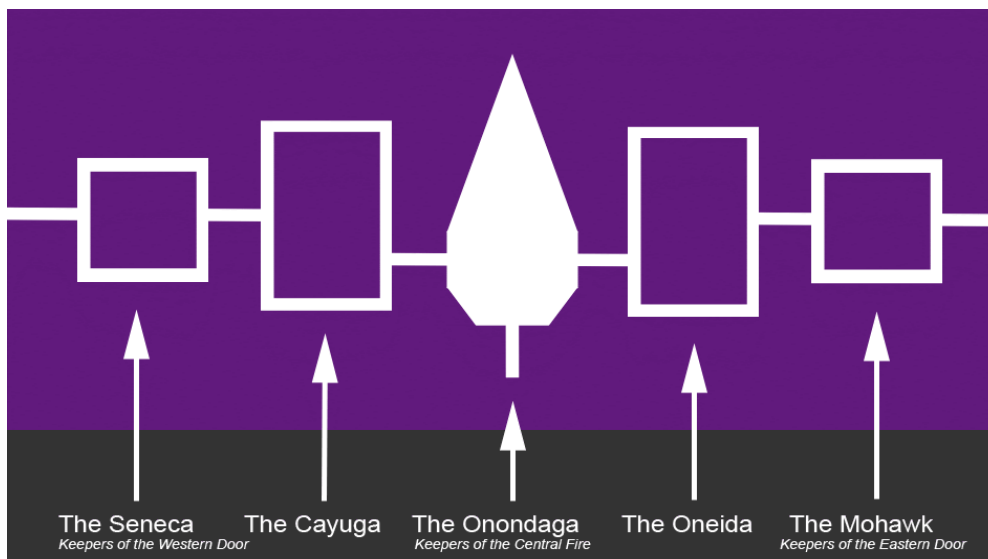


FIGURE 3.12. The Hiawatha Belt. Taken from the Kanhiote Tyendinaga Territory Public Library.<sup>264</sup>

<sup>264</sup> “Hiawatha Belt,” Kanhiote Tyendinaga Territory Public Library, accessed January 4, 2022, <http://kanhiote.ca/cultural.html>



The white pine is as much a spiritual ecological symbol of the forest garden of the North as the maple tree. It is time for the intercultural peoples of the North of Turtle Island to unite to renew and regenerate these beautiful forest garden polycultures as an expression of our interculturality, ecology and resilience and connectedness to place and our commitment to planting forest garden commons for the seventh generation. This realization shines clearly forth for me, in understanding what I must do with these teachings not off in Mexico, but rooted on the lands on the North shores of Lake Ontario. This initiative could be called the Forest Garden Regeneration Federation and could be undertaken in partnership between Indigenous and non-Indigenous organizations, communities, and stakeholders here in Ontario. My prayer is that this post doctoral research will find a home to flourish and take root.

The last morning after 2 nights with Tom Porter we participated in a morning Tobacco Ceremony. Tom shared the teaching about the origin of the word Guswenta again in the context of the ceremony's circle. I clearly heard the Mohawk Guswenta when Tom looked East and gave gratitude for the great gift of the sun that shines forth each morning from the East. The Tobacco ceremony recognizes this gift, but in the context of the Guswenta it also became clear that that vision from the East reminds us to see clearly and clearly hold our sacred duties of how we should relate to others and to all beings. Starting from this understanding of right action and clear accords rooted in the recognition of the sacred gift of life, is the fertile soil for an intercultural dialogue and regeneration of the cacao forest gardens.



FIGURE 3.13. Mohawk Seed Game. Tom gathered informally with members of the Mohawk language school, Don McCaskill and I and taught us a terrific Indigenous seed and gambling game. However, the game's teachings were peppered with irreverent jokes, and with stories and conversations that were bundles of wisdom for those present. Photo taken by Michael Sacco.

### Sincerity, Honesty, Authentic Relationship, and Humility are the Keys to non-Indigenous People Rediscovering Ritual and Ceremony

Tom had just recently returned from 70 days in Germany with his son, where they were working with German communities seeking to rediscover their seasonal dances and rituals. To do this the communities were reaching out to Tom and his son to share with them teachings and experiences around the Mohawk knowledge traditions. He began his interview with Don McCaskill<sup>265</sup> by talking about the huge trip he had just returned from.

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<sup>265</sup> Don McCaskill was interviewing Tom Porter for a book on the history of Indigenous Knowledge within the context of the Academy.

At one point Tom said that first sincerity, honesty, and humility were the keys to finding the spirit in the Strawberry Dance, in the Sun Dance, in the Thunder Beings Dance. But they (the German, or non-Indigenous peoples) must experience these rituals not so they can imitate them like monkeys, but so they can find their own way of connecting to the spirit of the dances, and in so doing to rediscover their own way of being Indigenous to their own place, and in this instance, he was talking about Germany. They must rediscover their own cultural traditions. The same challenges are held close for this researcher as I seek to connect to the spirit of the cacao and the forest gardens, and find a way to bring this work home to Ontario.

In a comparative sense I drew an important lesson from this. As a non-Indigenous person, it is possible to engage with the content and spirituality of cacao and chocolate. However, humility, sincerity, and the continued cleansing of intention are keys to maintaining the quality of this research in an ethical and intercultural sense. Just as the words that come before all words should start all meetings, in daily rituals, actions, and habits, it is necessary to continue cleansing these intentions. Striking up a balance between the pillars of trade, ecology, community, and the health of all beings takes time, patience, humility, sincerity, authenticity, and in the context of the forest garden regeneration, it means planting trees in whose shade we will never sit. It means re-discovering the forest garden commons of Ontario in a way that supports the cultural regeneration of Indigenous and non-Indigenous peoples alike and in a radical pluralistic sense. The forest garden commons is a powerful symbol for this complementarity amongst different pillars and beings of the forest garden.

## Mohawks Walk on the Land by Seven-Year Steps, and This is Expressed by Having Seven Years of Food Supply

When Tom Porter first said that the Mohawk people walk by seven-year steps I thought I misheard him. However, he clarified his statement saying that the Mohawk people need to have seven years of food stored and that the foods being harvested and dried each year from maize, beans, squash, seeds, roots, herbs, resins, would be stored for the next seven years before being eaten. Tom talked about the way that this strong food culture of his people was rooted in a strong resilient agriculture and polycultural of plants and animals. He said that he believed this food-rootedness and power was one of the reasons why the Haudenosaunee confederacy managed to stand for so long after coming into contact with so many settlers and colonizers. This strength made the confederacy more difficult to penetrate! However, he also mentioned that one of George Washington's first acts as a general was to march on the Seneca granaries and burn mountains of beans and corn stored in the Seneca villages to the ground, and in so doing weaken the body and union of the Haudenosaunee people. He also hinted that walking by seven-year steps was connected to the Oral history of his people who knew that periodically in the long count of history climate collapses have occurred that greatly impacted the ability of the people to feed themselves. Thus, this tradition was created to mitigate these different kinds of threats to the people.

Just as they dried and stored the food, they would also be consuming the fresh harvest, eating seasonally, and lessening their dependence on their food stores, keeping a balance between preserving food, preserving their stocks, and eating fresh, while limiting

the labour of preparing food for storage. This is a powerful model for small scale regenerative agriculture farms today to consider.

The wild chicken of the forest garden needed no barn and travelled in packs strong enough to keep many predators at bay. The wild turkeys were the chickens of the forest garden as the deer were the wild cows of the forest garden. Harvesting these animals in the harvest season was a way to lighten the load for the winter and leaving many wild berry and food harvests available would allow the animals to survive without having to save food for them. The abundance of the forest garden was intended not only for humans, but also for all the animal beings of the forest.

As I have pondered these words from Tom Porter, I have delved deeper into exploring the true living beauty and complexity of the spiritual ecology of Mohawk forest gardening and mound gardening of the Three Sisters and the forest gardens of the North. The forest garden and field garden polycultures of the Haudenosaunee were and still are deep symbolic expressions of their connection to the land, the soil, the water, the animals, to each other and to the spirit. Furthermore, this tradition shows that the Haudenosaunee people have a cultural memory of times of great climatic calamity and developed ways of sustaining and feeding their people in such times. This knowledge is more important today than ever , as we enter times of great uncertainty as a result of the climatic collapses we are experiencing with ever greater frequency.

It is my hope that by participating in regenerating and rediscovering these traditions on this part of Turtle Island that I can help feed the dignity of the people wishing to renew and rediscover their way of feeding themselves on this part of Turtle

Island. Simply put, my prayer is that this research will help feed the people's hearts, minds, bodies, soils, waters, and cultural imaginations.

The spiritual ecological practices of watering, weeding, tending, and dwelling with the plants slows us down and helps to open our hearts and our eyes—a prerequisite for spiritual ecology. Forest garden food polycultures lead beyond the annual scale to an intergenerational scale. Designing, planting, and tending forest gardens that will create resilience and beauty over generations is a profound act of regeneration for generations of beings to come in the great basket of beings that are part of the beauty of Creation.

My stepfather Tim Ralfe's last words to me were that if people like me who actually care about Canada and the environment don't do something, then we're all "f...ed." He was referring to political service through the framework of the nation state. I have taken the dignity and the beauty of that challenge and fateful last words to heart, but within a different context. I am called to a different kind of service than what Tim Ralfe imagined for me. The forest garden federation and intercultural regeneration and spiritual ecology project that is taking shape beyond this doctoral dissertation. I will seek to implement and evolve these thoughts to further nurture and cultivate and remake the forest garden commons in the troubling times ahead, not just for my own children, but for many others, not just for humans but for water, soil, plants, and animals. Gustavo Esteva mentored me for 20 years, and it was in the context of his hospitality and mentorship that the intercultural learning community/social enterprise ChocoSol took shape. Esteva's last challenge to me was to escape the capitalist enterprise, and to find a way to use the social enterprise as a springboard to implement these techniques and technologies through civil

society social movements that benefit the campesinos, Indigenous communities, and the dignity and spiritual ecologies of the sacred Mother Earth. Building intercultural bridges of friendship and solidarity between the forest gardens of Mexico and the regenerative agriculture projects of Ontario through the vehicle of revolutionary and ecological chocolate is part of the journey ahead. Hosting and facilitating dialogues and encounters between cultures that fosters that struggles to implement and inspire a regenerative ecological approach to food production will be a central theme of the postdoctoral research into regenerating and continuing the re-discovery of the Indigenous forest gardens.

In conclusion, this intercultural research shows how IK of the Haudenosaunee and the Mesoamerican cacao forest gardens are complementary and illuminate each other. Furthermore, the forest garden commons from an Indigenous governance perspective is a symbol of and vehicle for reimagining the new radical pluralistic politics of the 21st century. Cacao and the forest garden are the doors and windows of understanding that help to reimagine the possibilities that move beyond the limitations of our current cultural and agricultural paradigms. In this sense the original Indigenous cacao forest gardens and their regeneration and reimagination in the 21st century are expressions of radical hope, and intercultural hospitality. Standing in the shade of the pillars of the forest gardens makes imagining the alternatives easier. The forest garden polyculture is a symbol of hope for a more ecologically regenerative relationship to nature and agriculture, for a more resilient culture and renewable economy, but most importantly the forest garden is a

place that provides seasonal and year round abundance of food for humans, animals, soil and water alike.



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