

# INDIGIFAB

Acknowledging Emergence Origins

Sustaining Balance as Future Ancestors

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Institute for advanced architecture of Catalonia

BARCELONA



Barcelona School of Design and Engineering

InDigiFAB: Acknowledging Emergence Origins

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Submitted in partial fulfillment of the requirements  
For the degree of Master in Design for Emergent Futures  
Institut d'Arquitectura Avançada de Catalunya, 2021  
Elisava, 2021  
Barcelona, España

Cover Image: Carrer del Clot, (2021) Jean-Luc Pierite

## Table of Contents

Abstract.....	5
Chapter 0: What is your fight?.....	7
Chapter 1: Framing an Area of Interest and an Area of intervention.....	11
Chapter 2: First interventions.....	17
Chapter 3: Reframing of the project.....	19
Chapter 4: Autoethnography - First Intervention.....	20
Chapter 5: Post-Human Design - Second Intervention.....	22
Chapter 6: Future Scouting - Third Intervention.....	24
Chapter 7: Towards a Personal Narrative.....	27
Chapter 8: Final Intervention.....	30
Chapter 9: Measuring Impact.....	32
Chapter 10: Response-ability.....	34
Chapter 11: Designing yourself out.....	37
Chapter 12: Final Reflection.....	38
References.....	39





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## Abstract

This document presents the journey to develop InDigiFAB, an initiative which explores the broader implications of decolonization beyond the anthropocentric relationships of humans, Nation States, and Indigenous Nations. My personal journey begins as an Indigenous (Tunica-Biloxi Tribe of Louisiana) person and a guest on the traditional territory of the Massachusett Nation. I then reframe the project through my shifting experience as an immigrant in Catalunya. I gain insights into how to appropriate digital technologies through alternative presents. I explore needs and priorities of the local Catalan speaking community in Barcelona through "Language in Context." I use a neural network trained model called Catotron to assist in building a social media platform. The platform further promotes the online presence of Catalan for which there is a growing concern for sustainability in the digital realm. I further explore how to embed alternative narratives into artifacts from our built environment through "Planetary

Soda." Informed by local surroundings of Institut d'Arquitectura de Catalunya, the artifact is expression of the preservation of the knowledge of traditional medicines. I affirm that knowledge by integrating the artifact into a speculative home and design space. I then upcycle waste through digital fabrication and traditional artisan methods to build "Abundance." Finally, I engage a glocal community of practice to express solidarity with Tkemlúps te Secwépemc in response to the discovery of a mass grave of at least 215 Indigenous children. I lead a hybrid art build which results in local collective action to call for justice for those impacted by the Indian Residential Schools. Ultimately, these interventions and synthesizing of knowledge of digital and traditional tools and processes enhance my sense of identity and positionality within a given ecosystem. They further define a design practice which continues outside of the Master and into my lifelong learning journey.

Facing Image: Poble Nou, (2021) Jean-Luc Pierite

InDigiFAB: Acknowledging Emergence Origins 5

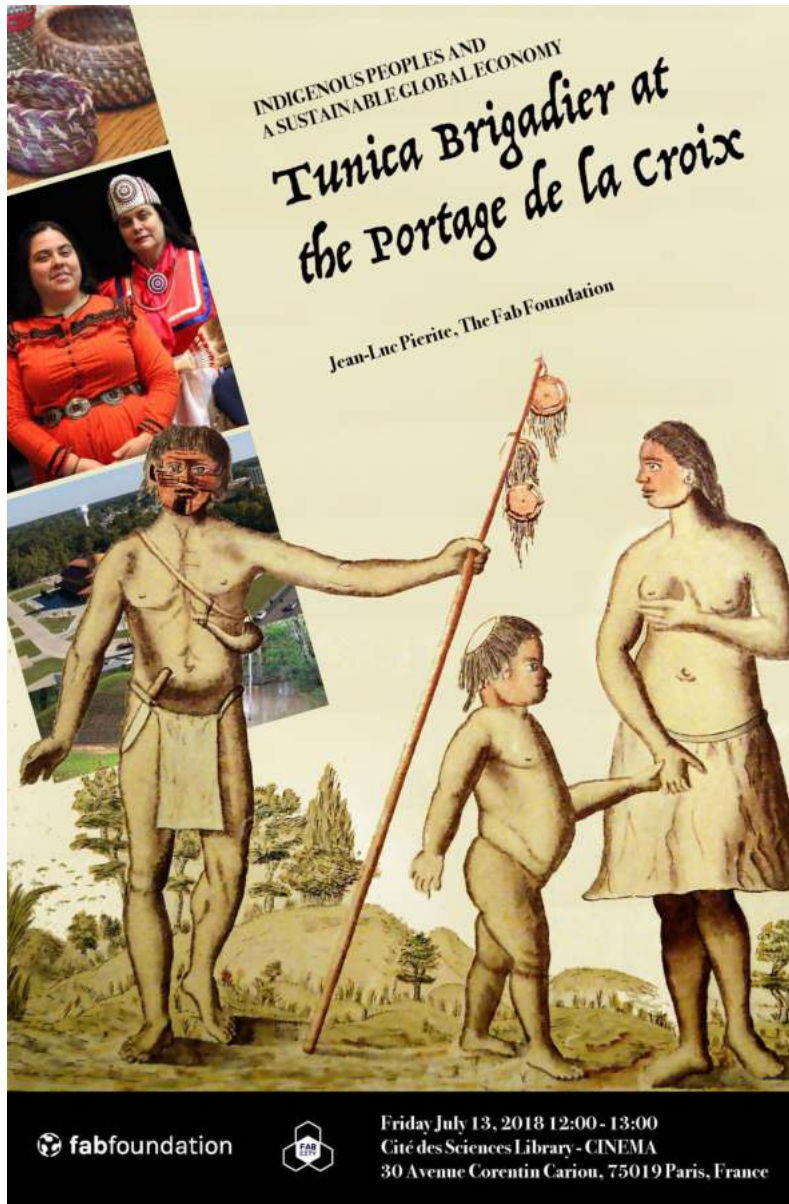


Figure 1. Poster for "Tunica Brigadier at the Portage de la Croix", a presentation at Fab City Summit Paris 2018. Discussing historical government to government relationships and the importance of the Tunica-Biloxi Tribe of Louisiana to a sustainable global economy, Jean-Luc Pierite, 2018.



## Chapter 0: What is your fight?

*ta'maro'hăš, ta'yoroniku, hopi'uhke'ni.* "The Tunica emerged, it is said, from (the mountain) *ta'maro'ha.*" Sesostrie Youchigant, traditional chief of the Tunica-Biloxi Tribe of Louisiana and last fluent speaker of the Tunica language, recounts the emergence of the people to Mary Rosamond Haas. In Youchigant's account, the place is guarded by two alligators, one that is red and one that is blue. The people go to visit the place every year, but are required to fast. If the people do not fast, they are swallowed whole by the alligators. From Youchigant's story, we begin to get a sense of Tunica cosmovision.

This certain cosmovision is distinguished as Tunica, because we avoid any assumption that Indigenous cultures are monolithic. In the example of Andean cultures, Tara Daly proposes the approach of plurality as a way to reflect the way in which subjects orient themselves to the material world and how material orients them. This means that there is a plurality of orientations (Indigenous and non-Indigenous) with differing relationships between shared objects and objectives. As expressed in the emergence narrative that we started with, Creation is interconnected. Humans emerge from the Earth and are required to remain in harmony through fasting. Nature holds Humans accountable to whether they remain in harmony with the Earth or not.

My work as a designer is rooted in language and culture revitalization for my Tribe, the Tunica-Biloxi Tribe of Louisiana. I know the many handicrafts, stories, and songs of my Tribe and my paternal grandmother's Tribe, the Mississippi Band of

Choctaw Indians. My paternal grandfather, Joseph Pierite, Jr., is remembered as our first tribal chairman. His father, Joseph Alcide Pierite, Sr., is remembered as our last traditional chief and medicine man. My paternal grandmother, Fannie Lou Ben Pierite, is remembered as the first Choctaw woman to graduate from a four year college in the state of Mississippi and the first Choctaw woman to teach in a white American school. Along with my maternal grandparents, Stanley Antoine Madere, Jr. and Marria Louise Normand Madere, they all are with Spirit as I write this paper. With the guidance of these ancestors, my work is an expression of the traditional ecological knowledge of my home states of Louisiana and Mississippi in the United States.

I live away from home. The house where I was raised in New Orleans East is no longer my family's, since Hurricane Katrina in 2005. Since that time, my sensibility is to find pieces of home regardless of where I settle. In this way of navigating, I broaden the historical and living narrative of my people. From living in Boston, Massachusetts; I keep stories of American Indians from what we now know as New England who navigated the Mississippi River in the expedition of René-Robert Cavelier, sieur de La Salle. It is because of this expedition that the lands of my peoples were taken into possession as "Louisiana." And now, I am here in Catalonia. This is the home of Esteban Rodríguez Miró y Sabater, KOS, the sixth Spanish governor of Louisiana, who confirmed a land grant of a league square in central Louisiana to my ancestor Bosra, chief of the Biloxi. My Tribe remains on this land,

though it is heavily encroached upon by American settlers since 1779.

My personal fight is however not about litigating history. It centers the memory and consciousness of spaces towards a decolonized perspective. I find it is important to function within the social structures of today, navigating relationships between: Indigenous nations, nation states, and territories. Towards emergent futures, we can deconstruct these social structures through tools and processes of decolonization. I must be cautious to say that deconstruction of social structures is not to immediately discard: political borders, government to government relationships, nor local cultures. There is an incremental process towards radical change in which we finally acknowledge rights of Creation (humans, nature, and Earth). There is a protocol to attend to before we return to our points of emergence. Part of that protocol is acknowledging elders in the tradition that I seek to express.

Santiago X in his lecture "Death of Architecture" asks us to consider the built environment of today's world. He further asks us to think about the scars that are introduced into the Earth when we construct buildings. What are the resources that we are using to make the houses and skyscrapers that protect us from the elements? When a building is introduced into an urban environment, we have a date of "birth." Yet, how often do we attribute a "death" date for our structures? When a building has reached a point in which it no longer serves society, do we allow that building to die? Do we allow the resources and materials

to sink back into the Earth to heal those original scars? Santiago X's questions based around the ceremony and manufacturing of artifacts such as a Zuni vessel extend to our built environment. In this line of inquiry, we can see how structures and ecosystems can be assigned lifespans.

Skawennati of Aboriginal Territories in Cyberspace extends the idea of living spaces into the digital realm. She achieves this through storytelling in formats such as machinima (3D rendered movies using interactive media assets). For Skawennati, the preservation and maintenance of a cosmivision is as necessary in the digital realm as it is in the world of atoms. Through machinima, we can explore distant times and places. We can breathe life into oral tradition to present a world in which digital art is within the agency of Indigenous peoples.

Cannupa Hanska Luger weaves tales of human origins, destruction, and resilience. This is achieved through multimedia exhibitions that express oral history in a future "80 cycles" after a mass exodus. Human relations with Nature are recounted in petroglyphs on gallery walls. Humans owe their survival to the Buffalo. When digital technologies and artificial intelligence is abandoned and buried during Luger's mass exodus, those left behind excavate the technologies and form new treaties to rebuild a devastated world.

Dread Scott uses performance art to bring awareness to the story of the largest slave rebellion within the current borders of the United States. He builds a volunteer army of Black and Indigenous descendants of formerly enslaved



Figure 2. Scenes From a Reenactment of a Slave Uprising. From left, Raykimwo Two Bears, Scierra LeGarde, Jean-Luc Pierite. (Daniella Zalcmán), Smithsonian Magazine, 2020.

people to retrace the steps of the 1811 German Coast Uprising, just outside of New Orleans. The landscape for this reenactment shifts from an environment once dominated by plantations. Those same plantations, now tourist attractions for visitors to southeast Louisiana, are now dwarfed by oil refineries. Residue from these refineries moisten the volunteer army as they continue to march and vow to end slavery.

In each of these examples, we see Black and Indigenous peoples' expression of "survivance". Defined by Gerald Vizenor, Indigenous survivance is "an active sense of presence, the continuance of native stories, not a mere reaction, or a survivable name. Native survivance stories are renunciations of dominance, tragedy and victimry". This bringing forward of Indigenous knowledge and narratives is central to the Indigenous futurism collection *walking the clouds* as edited by Grace Dillon. In the anthology, Dillon explores five themes: Native slipstream, Contact, Indigenous science and sustainability, Native Apocalypse, and Bikabiiyang (meaning, "returning to ourselves"). In this thesis, I will explore the *Atlas of Weak Signals* as developed by Fab Lab Barcelona through the lens of these themes and first person perspective interventions. In doing this, I hope to instill confidence in ancestral knowledge for my future descendants towards sustaining balance with Nature and the Earth.





## Quiz Quiz, Chisca, Aganahali, or Chucalissa?

In order to understand who I am, where I am; I dug deeper into my Tribe's history through the context of records I could find in Spain.

What is the exact beginning of our government-to-government relationship? How can this insight frame my understanding of my own identity?

I started by searching for resources in online collections. I then found Archivo General de Indias. I found some a map from 1772 which described our territory along the Colorado River. I then searched for records on the De Soto expedition. While I often quote Garcilasco de la Vega in telling the history of my people, I found that this was based on a modified translation. The province that I refer to as Quiz Quiz is actually Chisca in de la Vega's account.

I was motivated to learn more about the history behind the translation which my Tribe's history is based. I was surprised to find that French maps refer to this place as Aganahali. I felt that there are deeper questions, not just for my Tribe. There is also a park named Chucalissa which is identified as a possible part of Quiz Quiz.

Despite this anthropocentric confusion, what is the land's own identity?

DE LA FLORIDA. 229

lenguage, y para otra qualquiera cosa la tenían muy buena todos los deste gran Reyno de la Florida.

Del alojamiento de Alibamo que fue el postrero de la prouincia de Chisca, salio el exercito passados los quatro dias, que por necesidad de los heridos alli estuuo, y al fin de otros tres que camino por vn del poblado, lleuando siempre la via al norte por huyr de la mar, llego a dar vista a vn pueblo llamado Chisca, el qual estaua cerca de vn rio grande, que por ser el mayor de todos los que nuestrs Españoles en la Florida vieron, le llamaron el rio grande sin otro renombre. Juan Coles en su relacion dize que este rio se llama en lengua de los Indios Chucagua, y adelante haremos mas larga mencion de su grandeza, que sera de admiracion. Los Indios desta prouincia Chisca, por la guerra continuua que con los de Chisca tenían, y por el despoblado que entre las dos prouincias ay, no sabian cosa alguna de la yda de los Españoles a su tierra, y assi estauan descuydados. Los nuestros luego que vieron el pueblo sin guardar orden, arremetieron a el, y prendieron muchos Indios & Indias de todas edades, y saquearon todo lo que en el hallaron, como si fuera de los de la prouincia de Chisca, donde tá mal les auian tratado.

A vn lado del pueblo estaua la casa del Curaca, puesta en vn cetril' alto hecho a mano, que seruia de fortaleza. No podian subir a ella sino por dos escaleras. A esta casa se recogieron muchos Indios: otros se acogieron a vn monte muy brauo q' auia entre el pueblo y el rio grãde. El señor de aquella prouincia se llama Chisca como ella mesma. Estaua enfermo en la cama, y era ya viejo. El qual sintiẽdo el ruydo y alboror.

Biblioteca Nacional de España

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boreto q' en el pueblo anda uayte ieuante, y salio de su apoiẽto, y como viẽlle el robo y prisiõ de sus vasallos, tomó vna hacha de armas, y a toda furia iua a descender, haziendo grãdes fieros, q' auia de matar quãtos en su tierra huuiesse entrado sin su licencia. Estas bravatas hazia, y no tenia el triste persona ni fuerças para matar vn gato porque de mas de estar enfermo, era vn viegeziro pequeño de cuerpo q' en todos quantos Indios vieron estos Españoles en la Florida, no vterõ otro de tan ruyñ persona. Empero el animo de las valentias y hazañas de su mocedad, q' auia sido bẽlicofo, y el señorio de vna prouincia tan grãde y buena como la suya, le dauan esfuerço a hazer aquellos fieros y otros mayores.

Sus mugeres y criados se afieron del y cõ lagrimas y ruegos encareciendo la falta de su salud le detuieron q' no baxasse, y los Indios q' subian del pueblo le dixerõn, que los que auian venido erã hombres nunca vistos ni oydes y q' eran muchos, y trayan vnos animales muy grãdes y ligeros: q' si queria pelear cõ ellos murrãlle que los suyos estauan descuydados, y no aparecidos, que para vëgar su injuria, apellidãlle lo garite que auia è la comarca, y aguat dalle mejor coyuntura, y entretanto fingiẽlle toda buena apariencia de amistad, y se acomodãlle con las ocasiones cõforme ellas se ofreciesse, de paciencia y sufrimieõto, de ira y vëganga, y no quisiẽlle hazer inconsideradãmeõto alguna temeridad para mayor ofensa suya, y daño de sus vasallos. Con estas razones y semejãtes que sus mugeres, criados, y vasallos dixerõ al Curaca, lo detuieron a pelear con los Christianos: mas el quedo tan enojado, que vn recaudo que el Governador (sabiendo que estaua en su casa) lo

Figure 3a. (top) Postcard, Chucalissa Reconstructed Village, Gerald Smith, MWM Dexter. Figure 3b. & 3c. (bottom left, bottom right) Excerpt from "La Florida del Ynca: historia del adelantado Hernando de Soto, Governador y capitán general del Reyno de la Florida, y de otros heroicos caualleros españoles è indios", Garcilasco de la Vega, 1605.





### Value from refuse generated, stored, and endangered

Coastal erosion currently threatens historical records along the Atlantic coast of North America. Shell middens constructed from food waste hold cultural resources and human remains as constructed by Indigenous nations in the region for centuries. There are growing efforts to preserve this important history by many of the Tribes and First Nations.

This is evidence of a vicious cycle that the disenfranchisement of Indigenous peoples through suppression of traditional ecological knowledge causes disruption to land stewardship. Furthermore, climate change exacerbates the endangerment of resources and knowledge.

### Maine Sea Level, 1912-2100

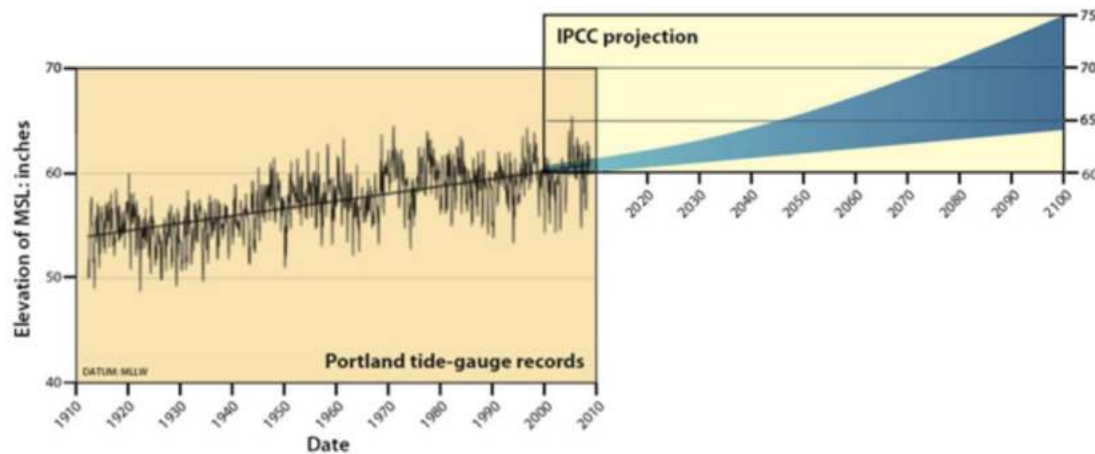


Figure 4a. (top) An old shell midden (waste heap) is investigated at Port Joli, N.S., as part of the E'se'get Archaeology Project, which ran from 2008-2012. Archeologists are trying to preserve more sites on the South Shore before they're claimed by erosion. (Matthew Betts/ E'se'get Archaeology Project) Figure 4b. (bottom) Why are middens eroding, Maine Climate News.

## Chapter 1: Framing an Area of Interest and an Area of Intervention

North American Indian Center of Boston has a practice of land acknowledgement which we have refined through the years. We first acknowledge the land as a being which sustains and holds us, meaning humans which in the context of this paper can be extended to nature. We then ask for a grounding. Those who are able and comfortable are asked to stand and close their eyes.

We ask for all to envision the local space as it would be 400 years ago. The period is at best an arbitrary point, except for the notion that in 1620 a ship crossed the Atlantic Ocean to land within the territory of the Wampanoag (People of the First Light). Yet when we are called to envision the spaces of 400 years ago, we see beyond the effects of terra forming and rising sea levels. Where there is now land, there was once water. Where there is water, there was perhaps once land. Then, we call upon people to envision the inhabitants of 400 years ago. These include the ancestors who were born, lived, loved, raised families, and died within the space. How often do we navigate our surroundings without the consciousness that we are walking over the remains of ancestors or the blood of enslaved ancestors that set the foundation?

Then we ask all who are taking part in the exercise to envision the world in the next 400 years. This is the world of our descendants who perhaps at long last are enjoying the fruits of the seeds of radical change that we are planting, today. What is the world that we are leaving for these people? How is the landscape different?

When we ask those who are envisioning these

worlds to open their eyes, we acknowledge the land as, "the traditional Indigenous territory of the Massachusetts nation who continue (in part) through their lineal descendants, the Massachusetts Tribe at Ponkapoag." In parsing that phrase, we acknowledge a specific political entity or Tribe which maintains autonomy regardless of recognition by municipal, state, or the federal government. We acknowledge their extended kinship relations beyond tribal affiliation. We acknowledge broader historical confederacies and alliances which inform political relations today.

"In acknowledging the land, we are positioning ourselves as guests, and we are making agreements with our hosts." In parsing this phrase, we are going beyond a platitude of acknowledgment and inviting all to join us in making promises to those who came before us, "our hosts." I will return to the idea of being a guest. "One such agreement," the acknowledgement continues, "is to support every effort by the Tribe to repatriate all land and natural resources back to the original peoples." In parsing this phrase, I often point to political maps with neat lines representing borders and current place names in the reader's language. These often miss the overlapping boundaries of extant Indigenous governments who maintain autonomy regardless of the borders of nation states. And yet, we acknowledge the dispossession and extraction of land and natural resources. We further acknowledge self-determination by promising to support the priorities of these political entities.

As I previously discussed, my homelands are within the United States, within the Mississippi

River Delta Region, and along the coast of the Gulf of Mexico. Despite my own affiliation with an Indigenous nation, outside of my homelands I am a guest. I am subject to the hospitality and priorities of my hosts. This consciousness and positionality is the initial step in mapping local resources and understanding the weak signals present in my daily life.

Defining my new me and my new work space was contextualized in response to a supposed scarcity mindset due to the reality of the pandemic. Previously, I presented on American Indian agricultural use of a nearby creek in relation to opposition to a proposed substation for an energy company. By historical accounts of use of the land, the fish from the creek provide food and spoiled fish provide nitrogen for earth mound gardens which can be formed along the bank of the creek. Seeds of corn, beans, and squash are planted together to form a system of support and collaboration. The corn forms a stalk which the vine of the beans ascend during growth. The beans place nitrogen back into the soil, and squash provides ground cover for each mound. Thinking on this concept, I wanted to approach the issue of scarcity as a matter of perspective.

As opposed to being sad about my grandparents and ancestors no longer being alive, I am grateful for their knowledge and their work which brought our family to this point in our reality. In addition to published works, I wanted to find a way to integrate the knowledge of my ancestors into my design work. I further looked to the nature that I had access to, but up until this point had not critically



analyzed the plant life. Using my smartphone, I downloaded an app to start scanning the interesting herbs that I found in my local surroundings. I had to scan plants a few times after first starting to be sure that the AI was picking up the species correctly. While not a perfect source of information, I trusted in the community process that was cultivated before I adopted the application. I looked back at the apps that I already installed. How many times and on how many scales was I already mapping out my own personal universe?

Thinking about the methodologies and tools that I adopted since the beginning of the quarantine, I recognized how going inward built a foundation to look at the world through a lens of abundance. I also used a lens of possibilities by thinking about how to map out my universe by creating a deck of cards. These cards included the machines that I have access to, the books in my personal library, and my grandparents and ancestors. Drawing these cards at random, I can begin to think about novel uses of machines and knowledge to design my interventions going forward.

Early on in the Master in Design for Emergent Futures, Mariana Quintero hosted a hike within Barcelona for local students. My arrival to Barcelona was delayed until the second term. So, my "hike" came in the form of participation in the Boston Climate Strike which was organized by a coalition including North American Indian Center of Boston (NAICOB). Central to the purpose of marching with Climate Strike to make links between the perspectives of the intersectional participants who voiced the interconnectedness of white su-

premacry, extractive economies, capitalism, rights of immigrant workers (who are often Indigenous peoples displaced by disputes over land, threats of sexual assault, and other stressors).

For my personal role, I did speak on the initiative by NAICOB and United American Indians of New England (UAINÉ) to establish Indigenous Peoples Day and to remove a statue of Christopher Columbus from public display. There were a couple of inconsistencies on my own part as I took a work-related call from The Fab Foundation up until the time of my presentation. While juggling work and activism is part of how I navigate multiple systems, it was inconsistent with the message of the action to not work or not contribute to the economy. My staff member from NAICOB bought a Starbucks coffee for me which gave me a feeling of guilt, but I justified the action by drawing a black cross against the corporate logo.

We continued the march through downtown Boston, and I threw my coffee cup away in a recycling bin without taking a photo. What I did take photos of were a small dog that moved through the crowd which helped cheer participants yet distracted from speakers. The speakers were in the bed of a pick up truck which is useful for compelling presentations yet contributes to the fossil fuel economy. A restaurant with mannequins seated in every other booth also piqued my interest. I started to question the inconsistencies even as we commit to direct actions to challenge systemic inequalities. It was interesting to see a bit of dystopia in how status quo is upheld.

As described in walking the clouds, Native Slip-

stream is the exploration of the alternative scenarios through the literary traversal of time and the multiverse. Such a mechanism can be useful when investigating weak signals towards emergent futures. Furthermore, as previously explored in "ariyasema...", we can understand Wallace's model of cultural revitalization movements and the application of digital literacies in the example of the Tunica-Biloxi Tribe of Louisiana. We further synthesize these methods with a decolonization lens. Beyond relationships between human subjects and their political entities, we can also investigate positionality of subjects along axes of land and time. More than static indicators of political power, land and time have agential qualities which inform all of our doings. If we are to sustain balance for future generations, then we must respond to threats and opportunities arising from points of individual stress. Considering survivance, we don't just consider: murders, epidemics, wars, displacement, and climate change as individual stress. Stress can also arise from repatriation of land and natural resources, increased access to healthcare, and improved literacies in new media or digital technologies. We can therefore efficiently strategize response through constant investigation of weak signals along the axes of land and time. Perceiving alternative scenarios, requires ventures into the Native Slipstream.

By using Indigenous storytelling tradition through the multimedia exhibit "Future Ancestral Technologies", Cannupa Hanska Luger wove a tale that explained the origins of humanity and its interdependence on other species. He then walks

# indigenous futurism

## 2420

### 400 years / 5 moons

Projecting ourselves (arbitrarily) 400 years in the future, we will come together to explore literary elements in *walking the clouds*, edited by Grace L. Dillon. This series of meetups is for adults 18+ who are passionate about science fiction and arts. Over the course of five moons, we will share readings and encourage each other to express motifs of indigenous futurism through original short stories, music, coding, and visual art.

Meetups to be held at each new and full moon during the coming months. The final meetup will be an exhibition that is open to the public to share art created during the series.

**Introduction**  
New Moon - 7pm, November 26, 2019 (Tuesday)

**Native Slipstream**  
Full Moon - 7pm, December 12, 2019 (Thursday)  
New Moon - 7pm, December 26, 2019 (Thursday) (Kwanzaa)

**Contact**  
Full Moon - 7pm, January 10, 2020 (Friday)  
New Moon - 7pm, January 24, 2020 (Friday)

**Indigenous Science and Sustainability**  
Full Moon - 7pm, February 9, 2020 (Sunday)  
New Moon - 7pm, February 23, 2020 (Sunday)

**Native Apocalypse**  
Full Moon - 7pm, March 9, 2020 (Monday)  
New Moon - 7pm, March 24, 2020 (Tuesday)

**Biskabiiyang, "Returning to Ourselves"**  
Full Moon - 7pm, April 7, 2020 (Tuesday)  
New Moon - 7pm, April 22, 2020 (Wednesday) (Earth Day)

**Indigenous Futurism Exhibition**  
Full Moon - 7pm, May 7, 2020 (Thursday)

 **North American Indian Center of Boston**  
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Figure 5. Poster for "indigenous futurism 2420: 400 years / 5 moons", a series of book club meetings to study *walking the clouds* as edited by Grace Dillon, Jean-Luc Pierite, 2019.

us through colonization and industrialization beyond collapse of society. Most of the imagery is from a time over 80 years after a mass exodus of wealthy humans which leaves a world of revitalized indigeneity, inter-species collaboration inclusive of artificially intelligent beings, and spiritual reawakening.

Future Ancestral Technologies debuted in 2018 in the form of an immersive exhibition at the University of South Dakota. A series of land-acknowledgment performative actions have since followed and manifest as video works, several of which will be on view in the Media Art Gallery. The project continues through the prototyping of dwellings, clothing, tools, and videos that illustrate a world in which artificial intelligence and virtual reality support ritual and ceremony. Though currently viewed via exhibitions and in other art world contexts, this project operates under the assumption that these artworks will become useful in the future.

Cannupa Hanska Luger is a New Mexico-based, multi-disciplinary artist. Raised on the Standing Rock Reservation in North Dakota, he is of Mandan, Hidatsa, Arikara, Lakota, Austrian, and Norwegian descent. Using social collaboration and in response to timely and site-specific issues, Luger produces multi-pronged projects that take many forms.

#### **Thinking about Climate Conscience in terms of:**

Biskaabiiyang, "Returning to Ourselves" - investigating how one is affected by colonization, discarding emotional and psychological baggage,

and adapting to a post-Native Apocalypse world.

This form of intervention builds upon local traditional knowledge and spiritual practices by imagining a future in which humans adapt to global collapse by adopting dances, regalia, and songs as imagined by Luger. It asks the question of: how do we reclaim traditional knowledge and bring it forward to respond to present or future realities?

Thinking about Inter-species solidarity in terms of: Contact - reframing resistance and oppression in a way that implicates the part of individuals in larger realities.

This form of intervention builds upon the idea of inter-species solidarity through storytelling which recounts an original treaty with the Buffalo that continues in a pay-it-forward fashion to include treaties between humans and artificially intelligent beings that were salvaged after global collapse. It asks the question(s) of: when we define interspecies collaboration, how inclusive are we thinking? What is the impact of artificial intelligence and human crafted consciousness?

#### **Thinking about Long termism in terms of:**

Native Slipstream - non-linear thinking about space-time. navigating pasts, presents, and futures in one stream.

The form of intervention merges past, present, and future together to build a narrative that treats time as cyclical in form. It asks the question of: how can we reflect on our relationship with creation (other humans, other species, nature, etc.) to conceive of agreements or plans of action towards futures well beyond our lifetimes?

#### **Thinking about Carbon neutral lifestyles in terms of:**

Indigenous Science and Sustainability - traditional sustainable practices constitute a science, despite a lack of an analogous taxonomy to western science.

This form of intervention promotes Indigenous science and sustainability by applying traditional methods of making that is agnostic to materials. It asks the question of: in a changing world that impacts the range of materials for traditional crafting, how do we continue processes that promote spirituality and sustainability?

#### **Thinking about Fighting Anthropocene in terms of:**

Native Apocalypse - transition from a state of imbalance to a state of balance by illustrating trauma to provide healing.

This form of intervention uses the genre of science fiction to promote global consciousness by depicting healing after a great trauma. It asks the question: how can we return to a state of balance through renewed relationships with other species and restorative justice between humans and creation?

In reflecting on the planetary crisis and the weak signals through the themes of Indigenous futurism and Luger's intervention, I am challenged by how I identify as an Indigenous person. I ask myself: what does that mean in the modern context? Am I reliant on the social structures and agreements that my people have with Nation States?



Figure 6. Muscle, Bone & Sinew regalia. Future Ancestral Technologies. Cannupa Hanska Luger, 2020-2021



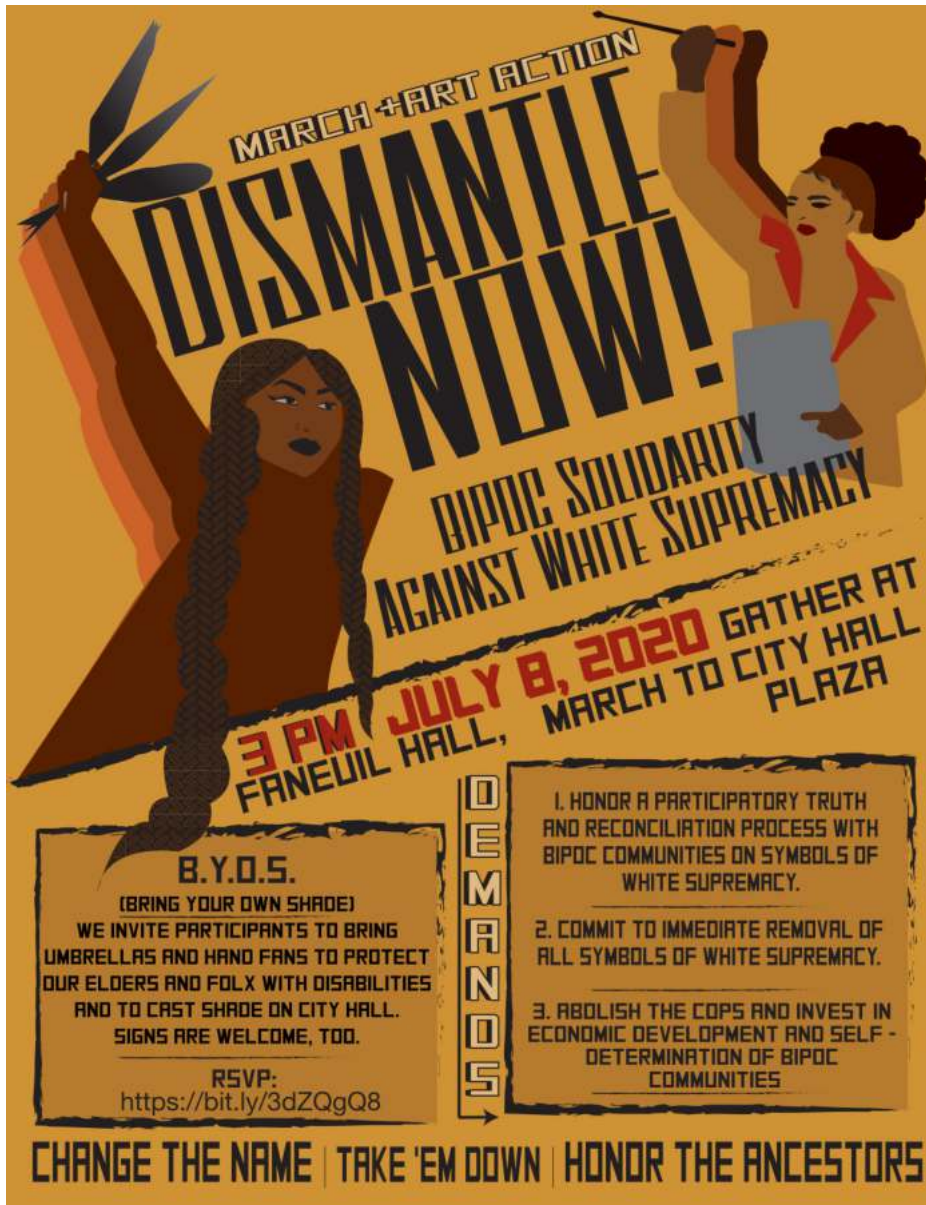


Figure 7. Poster, "Dismantle Now! BIPOC Solidarity Against White Supremacy", MJ Malisz, 2020.

## Chapter 2: First interventions

### Dismantle Now! Art Action

In response to the murder of George Floyd, North American Indian Center of Boston and United Americans Indians of New England called for a solidarity action to express the demands of the local BIPOC (Black, Indigenous, and People of Color) community in Boston, Massachusetts. In addition to protesting, I proposed that it should be an art action that is using creative expression as a form of resistance.

How could we promote the demands of the community in a way that centers the joyfulness of resistance? How could we center spirituality in the direct action? How could we have an action that is attention grabbing while also complying with COVID-19 restrictions?

I spent several weeks with my organization gathering contacts of supporting organizations to build a coalition for the action. I made connections with local Black activist organizations and spiritual practitioners. I consulted across the coalition to form demands that would make sense for all stakeholders. I also designed an effigy of an octopus that would be symbolic of white supremacy. I then coordinated training sessions with local legal professionals to be sure that all main support would understand the risks and how to navigate them. I then coordinated an art build in which we constructed our effigy and decorated umbrellas. The purpose of the umbrellas was to create shade for elders while at the same time assuring that participants would maintain a safe distance. I then headed the action on the day of the event by coordinating speakers and those

performing ceremony or prayer.

I felt this was one of the most successful direct actions that I had participated in and also coordinated. I felt proud of the team that I assembled. I also felt a relief in that I further pushed the boundary between protesting and prototyping to do as much as I can to respond to a social crisis.

Coordinating a direct action and incorporating art takes a lot of community building and trust. I was successful because I spent a couple years gaining the confidence of other organizers within the local community. I also listened to those who were active in resistance for much longer than myself.

In the future, it's important for me to remember to maintain constant communication with all stakeholders within my own community of practice. It's a challenge when day-to-day stresses arise, but there's also collective support for resiliency within the collective support for work.

How did this example demonstrate Native Slipstream? How are ancestors walking with us and supporting us in the demand for change to social structures?

### Post Native Apocalypse Curating

During the MDEF class "Living With Your Own Ideas", I proposed to my executive director at North American Indian Center of Boston, Raquel Halsey, that I would spend the night in our dusty archive room. I would do this to live with the collection of American Indian and First Nation artifacts that our center holds. In this way, I would

form a personal connection that would inform a process of collecting data and making sense of my environment.

What are the tools that I need to effectively perform an archiving project? How would sleeping in a room with artifacts contribute to the process? Were there any risks to my personal health to perform this?

I borrowed a small air mattress from Raquel and locked myself away in the room with the artifacts. I gave myself the rules that I would not leave the room unless I absolutely needed to use the bathroom. I also resolved that as I unboxed and sorted through the collection, I would hold the waste in the same room until the task was done. Instead of doing a deep dive into how to perform archiving, I decided the best thing was to bring my Rebel T5 camera and Macbook. I would only take photos of the objects and make decisions about what metadata to capture in a spreadsheet as I was doing the experiment. I started with the most obvious objects in the collection which were the books. I photographed and considered what Indigenous nation was being represented by the text. I then moved on to newsletters and newspapers that were produced at the center. After getting a feel for objects with clear embedded data, I moved on to the cultural resources and sacred objects in the collection. I spent the least time on those. I then uploaded all data that I collected to my website.

I felt that some of the objects in the collection reflected my own personal journey of discovering my own identity. While there were academic



resources and those produced specifically by the Indigenous nations represented. There were also several examples of problematic or blatantly racist texts. I wondered if there was a point in time for many of us in which we desperately needed to see ourselves. Perhaps, I was willing to compensate my own standards just to find a signal of a reflection.

In the future, I will remember that using technology to accomplish complex tasks means that we should be willing to work with whatever we have at hand. If this was some speculative future in which a crisis left me to pick up the pieces, I need to trust that I can find my own way towards what is right for me.

How many times has noise of problematic representation gotten in the way of my own journey of self-exploration? How do I map resources in a quick way to effectively perform tasks that will help me make sense of my surroundings?

### **Hunab Ku: 5G Mayor's Summit**

In the MDEF class "Post-Technological Futures for Everything", we were tasked by Andres Colmenares to work in groups to speculate on a fictional city that would present at a 5G Mayor's Summit in the year 2052. We had to prepare a state of the city and also propose sustainable development goals for the conference. My team consisted of Jose Francisco "Paco" Flores, Roger Guilemany, Josefina Nano, and myself.

What would the social structure of our city be built upon? What were the roles of all social actors within our speculative system, not just humans?

How would these answers inform the sustainable development goals that we would propose?

Our group reflected on cities that were most important to us. I proposed my hometown of New Orleans. I then searched for creative commons assets that would help us prepare our presentation. I found several music websites that have royalty free music that can be used in videos. I also relied on videos from Vimeo as it filters content by license. I coordinated with Josefina who did a search for animated gifs that we would then incorporate into our presentation. I also designed a Zoom background for our city, which was then named "Hunab Ku". Paco made that suggestion. We also decided as a group that our city would be based around the real world Galapagos. After we each adopted our Zoom backgrounds, we saw that Roger had some interesting artifacting related to how the filter was applied. I suggested that we use a clip of Roger talking. Roger would portray the disembodied collective intelligence of our city. After a talk from K Allado-McDowell on Pharma-ko AI, I was curious about using gpt-3 for our project. While I did not have access to the gpt-3 model, I was able to install gpt-2 locally. I had to install conda and set up a virtual environment to run the version of python needed to get tensorflow working. Once I got everything running, I sent prompts to gpt-2 and recorded its responses in a Google Doc for our team to edit.

I was very happy with the results of this intervention. I was comfortable with the creative energy and political views of my team. I felt very playful and got to inject some Monty Python

references while at the same time crafting a future and a world in which I really wanted to live.

In the future, I will center storytelling in social interventions. Crafting a fictional world does not take much more technology than what I am familiar with. It's also great to problem solve if new features are reasonably attainable.

How can I incorporate artificial intelligence and machine learning into future interventions? How can I help others find hope in world building and storytelling?

## Chapter 3: Reframing of the project

After the Term 1 Design Dialogue, my takeaway centered around my personal practice of land acknowledgements. This is a feature of public speaking in which a person recognizes their positionality as a guest on land away from their homeland. For the purpose of my own research, I define homeland as a place where one's ancestors are buried. In the practice, the specific person recognizes him or herself as a guest and acknowledges the hosts. These are people whose ancestors are buried in this specific place. Furthermore, in my specific practice of land acknowledgements, this is followed by a pledge to align oneself with the priorities of the hosts. My goal is to follow this process towards reframing my project as I am in a different geographic context.

What does it mean concretely to acknowledge oneself as a guest in another's territory? How can acknowledging my own positionality help in cultivating an understanding of the needs and priorities of others in my local environment? How can I engage with others in a meaningful way through this exploration?

One day into the intervention, I advanced several levels in Español and Català in DuoLingo. I am following the recommended 20 minute daily time for "intense" study. The gamification of language acquisition through DuoLingo is addictive, but perhaps less harmful than submitting myself to constant social media. In order to access the Català lessons, I had to search for a course for Español speakers. Because I assessed my Español proficiency at the beginning of the DuoLingo courses, I felt comfortable taking the lessons in a secondary

language. The documenting of yesterday's exposure in El Clot went a little slower than expected as I spent time refining the style and presentation of the photos. Because the focus is on Català for local exposure, I am only transcribing photos with the language present. These are individual text files which I merge periodically. The merged text is imported into Google sheets and translated one word at a time using the Google Translate function. Duplicates from the word list are removed. Finally, I export a csv for words sampled from the day's exploration. The first day's exposure was 523 unique words. The digitization of my efforts seems to be a priority as I found a few interventions centering the preservation of Català in the digital age. Catotron is a text to speech synthesizer trained through neural networks. I am able to test the Ona model against the language samples taken daily. After my individual mapping of language in the context of my local environment, I then agreed to meet with Clement Luc Rames and Roger Guilemany who were hosting a Derive. We toured through el Born and el Gotic. While it was against the rules of the Derive to use our mobile devices, I was able to make a mental map of places to return to at a later date. A presentation for that project is on my website.

I at first was determined to make sense of a very foreign surrounding. I had trouble distinguishing between Català and Español at first. This made me feel a bit uneasy, because my mom is a French and Spanish teacher. Being confronted with different languages is part of my upbringing and part of my heritage as a tribal member. Ulti-

mately, I felt that my individual exploration helped prepare me for exploration of the city with others. I really enjoyed working in person with my fellow classmates.

I was able to discern some interesting insights by documenting the printed language that I found in my mapping. El Clot appears to be a neighborhood with an older population that is more Català speaking given the amount of printed language and the services in the area. Most importantly, I found that I should pay more attention to the street art and graffiti which is more indicative of the social climate. The messaging is immediate, ephemeral, and more demanding politically.

In the future, I should not let a language barrier get in the way of making sense of any surrounding. It's part of my process to learn to navigate as I move through this world, away from my own homelands. I thought the Escola Octavio Paz which was discovered during the walk would be a good resource for partnerships going forward. I would also like to dig deeper into Project AINA. I also want to further play with the data collected and develop an online platform.

What are the tools that I need to carry the work forward? How will the connections that I make online help me cultivate a community of practice locally?

## Chapter 4: Autoethnography - First Intervention

### The role of theory?

Acting on the physical world; Addressing human needs; and Generating the built environment.

Further there's a critical perspective to be applied when exploring a built environment through public facing ephemera. Are the language samples: advertising for businesses, public notices, historical plaques, or street art. What can be learned as far as the needs, priorities, and demands of the community and ecosystem that the designer is entering into? How can the designer be an accomplice in addressing the needs, priorities, and demands of the community?

### What kinds of questions do you ask for your auto-ethnography?

In thinking about communicating emergent futures, I quote Philip Deloria. Deloria speaks about authenticity and the constructed image of the Other. Otherness is coded in terms of:

Time, which can be nostalgia or archaism; Place, which in the context of this program is either inside of outside of the designer's homeland; and Culture, which is objectified through ethnography. In "Radical love as a strategy for social transformation", Andrew Jolivet proposes a Collective Ceremonial Research Responsiveness (CCRR) structure. In this context of a designer as a researcher, I must ask:

Am I using tools and processes that foster a collective endeavour and a shared knowledge creation process between the community and

academia? Am I distinguishing my own design or research as a ceremonial act or mutual respect and co-sharing with community experts, traditional knowledge keepers, and cultural leaders? Am I being selective in design or research proposals to be responsive to social indicators (social, legal, economic, cultural, and political) as defined by community experts?

How does my intervention go towards the overall program of building trust with community experts?

### What kind of stories you tell?

In designing for emergent futures under a weak signal of imagining a non-Western centric future specifically in the context of Indigenous futurism themes, I explore several aspects:

Thinking in terms of: Native Slipstream - non-linear thinking about space-time. navigating pasts, presents, and futures in one stream.

When opening up the project to collaboration with the Dérive Collective, I followed a historical and contemporary path of Indigenous peoples from the Americas in Barcelona. I started with the depictions of Taino and Arawak at the base of El Monument a Colón. This was contextualised through the work of Daniela Ortiz. Wandering through Barri Gotic, we find Nativa which is founded by the family of José Luis Cotacachi (Otavalo) from Northern Ecuador. Espacio del Immigrante invites further engagement with an exterior mural by Felipe "Pincel" Echeverría. Coincidentally the Centre Cultural in El Clot features another mural

by Pincel. It's here where I go to pray and reflect daily.

Thinking in terms of: Native Apocalypse - transition from a state of imbalance to a state of balance by illustrating trauma to provide healing. The imbalance in this intervention is being separated from the comfort zone of my own homeland and adopted environment. The journey is about making sense of the foreign built environment to find pieces of my own home to construct a narrative and continuity to position myself within a community.

Thinking in terms of: Biskaabiiyang, "Returning to Ourselves" - investigating how one is affected by colonization, discarding emotional and psychological baggage, and adapting to a post-Native Apocalypse world.

I have to question myself and my motivations for assimilation into the foreign environment. Is my sense of style and apparel influenced by my own constructed ideas of an Other? What are the power dynamics to navigate when an Indigenous person assumes the role of an immigrant? Do I owe it to communities that benefit from my colonisation to assimilate and conform to an image that they are comfortable with?

Thinking in terms of: Contact - reframing resistance and oppression in a way that implicates the part of individuals in larger realities.

Ultimately, when addressing colonisation and decolonisation to go beyond the context of land as merely territory; I have to acknowledge how my own nation benefitted from the process of colonisation. We are active in the historical record



with international relations and participation in international trade. While it may be less obvious to communities that I seek to co-create with, I have to understand how history and my own community's role shape my assumptions of my presence in a foreign land.

Thinking in terms of: Indigenous Science and Sustainability - traditional sustainable practices constitute a science, despite a lack of an analogous taxonomy to western science.

CCRR reference above applied to design theory as developed through making means that there are specific protocols for the co-creation of shared knowledge in which an academic is at best an accomplice while respecting the intellectual property of the community as unalienable.

### **How do you provide evidence?**

Evidence is provided in:

Photographic samples of posted language ephemera; Tracking data from language learning applications; Language proficiency measured through application performance; Text to Speech samples; and Mapping of a community of practice through local exploration

### **Why is it meaningful for you?**

As discussed in the Biology Zero reflection on my website, panelists from the Indigenous Survivance panel at Global Community Bio summit 4.0 offer specific guidance for working with (Indigenous) communities. Beno Juarez's guidance specifically

resonates in which he tells people to buy a ticket and visit the jungle (or immerse yourself in the local geography), live the cosmovision (or follow the local ways and beliefs), and learn the language.

### **How do you find your own community (on-line), group of practice? How do you create a reflexive relationship?**

After mapping and building language proficiency, I feel better equipped to begin contact with communities who share identity and practices with me locally. In building a reflexive relationship, I need to be transparent about my own identity as a designer and the research framework to which I am held accountable.

### **Processing Handicrafts**

My first intervention of the term came through the first Fab Academy Challenge. We were tasked by Fab Lab BCN to team up and produce an intervention that would incorporate: computer controlled cutting, computer aided-design, and web design.

How can I incorporate the learning of the first few weeks of Fab Academy into a project for a social intervention? What is the purpose and meaning that I can embed in my intervention?

I approached Veronica with an idea to work with carnival traditions in this challenge. We were both motivated by the needs and priorities of artisans in New Orleans and Bolivia. We first identified an

example project that could be lasercut. We then crafted a narrative around that project. From there, I worked with Processing to develop an application that would explore generative art through webcam and mouse inputs. Finally, I coded and hosted a webpage to publicly expose our project.

I was very happy that Veronica was receptive to the topic that I proposed. We found a commonality by focusing on issues of cultural heritage. At the same time, I felt that I wanted to express everything that I could do within the fab lab as opposed to working within our shared understanding of the resources.

It's important to be passionate about projects and interventions. At the same time, there is a shared sense of ownership that helps to define the boundaries of what's achievable.

In the future, I will remember what it is like to work within competencies in which I am very experienced. I will remember that co-design is as much a process of learning for others as myself. I will remember that while certain tasks may seem basic to myself, I should honor what others contribute.

How can I refer back to Processing Handicrafts in a way that demonstrates my own understanding and journey within the fab lab?

## Chapter 5: Post-Human Design - Second Intervention

### The forces of the designer of things

[D]oings are broader and encompass vastly different contexts such as how landscapes are made, and how we operate within the academy and what we hope our work achieves (or does). This focus on embodied practices is explicitly drawn from Indigenous scholarship who have all articulated the vital interconnectivity of embodied politics and Indigenous resurgence. Regardless of the different origins and ownerships of these approaches, they both call for us to attend to what we do in the world, the politics of our doings, the emotional, embodied practices of doings, the temporalities of acts and, crucially, to the inability for us to ever know all about the world.

An intensely localised co-becoming links the learner/doer into vast networks across place and space, and also time. Given these connections across space-time, a call for 'localised' engagements with Indigenous place knowledge should not be confused with a call for 'limited' engagements. Rather, engagements with place-agency and placing-time in Indigenous knowledge open up new possibilities for geographical theory and practice.

The trajectory of the overall program of acknowledging emergent origins is to go beyond the concept of decolonization in terms of Indigenous governments and Nations States. In order to achieve this broader definition, I am exploring the agency of land being merely being territory to occupy towards exercising political authority over humans and non-humans. In the

context of humanism vs. post-humanism, there is a third tier that is better aligned in Indigenous cosmovision. Baker and Pickerell describe the development of knowledge, emotions, feelings, and intuition through "doings." The definition of this asks us to consider the influences and effects of our actions within a given geography. Furthermore, to give a place agency is to acknowledge the relationship formed through localized engagements that remain with the doer in a process of co-becoming.

The purpose of the current intervention is to scale first person language exploration and documentation by exposing workflows and engaging stakeholders through social media. The broader impact is to increase the presence of local language and knowledge in online platforms. Further, geographical and political data are curated to better contextualize and promote awareness of the needs and priorities of the local community. Additionally, the platform is documented such that it can be applied to any language community thinking of resources for revitalization. Because the language and knowledge are local, we are acknowledging place-based epistemologies that sustain non-human constituents (including the land).

### The speaking subject of the designer of things

My goals and vision for the project are: local knowledge development; sustainable linguistic diversity; and agency of land and ecosystem.

In mapping out the human and non-human stakeholders, it is clear that there needs to be an accounting for existing linguistic, political, and cultural diversity. My primary driving force is forming community with the local Catalan language revitalization efforts in a way that increases understanding of the tools and processes of language documentation from a context of building solidarity as an Indigenous community language activist.

Where friction exists is in the design decisions of whose use of the local language is a valid sample of the needs and priorities of the local community. While my own politics skew in a certain direction, I'm wondering whether there should be inclusion of right wing ephemera. Even within the context of the social media account @veusderesistenicabcn, whose resistance should be included in the overall narrative that I am portraying? Are the issues of worker, immigrant, and women's rights inherently aligned with a left leaning or socialist agenda in the local environment? Furthermore, in terms of stewardship of the local ecosystem whose agenda best aligns?

Ultimately, the centered experience within the intervention is myself and documentation should reflect how the local environment shapes my future biography through a relationship rooted in a certain time and space.

### The future of your biography

There are (at least) three platforms engaged when thinking about the scaling of Language

in Context. First would be the static forms of documentation that serve as a snapshot for the development phase. These include the MDEF - Fab Academy archives and the Instagram account. These can be revisited to add to the exploration and form a deeper connection with a broader scope of space and time from the formal conclusion of the initial project. Exposing the project to open-source documentation platforms such as Appropedia, GitLab, and SCOPES-df; the processes engaged in can be forked, remixed, and extended to applications within other language communities. Third is in the global insights of a community-based language documentation research community that can be applied at a local level to my own Tribe's language revitalization programming. This research can be developed and curated on a local level and additional modules can be conceived to adapt to the needs and priorities of my own community.

## **Planetary Soda**

My second intervention for the second term of MDEF came through the second Fab Academy challenge. I worked with Guilherme Simoes to build an artifact that would eventually be part of a platform to encourage healthy eating habits through the cultivation of microgreens.

How can we promote healthy eating habits through a social intervention in educational or home settings?

I approached Guilherme to learn more about his fight as he is expressing in MDEF. I learned about

microgreens and how passionate he was about the topic. We then walked over to Instagreen in el Poble Nou to make contact and to purchase microgreen kits for experimentation. The goal of our project was to come up with a device that would promote healthy eating habits. Thinking about what recipes that we could use microgreen in; we settled on soda recipes. We ideated on a cabinet that would have compartments for cultivating the greens, drying the greens, and then processing the greens into a carbonated beverage. While iterating on the design of the structure, we talked with Eduardo on what resources were available for electronics. I had my first failure when I attempted to wire a 12V DC motor fan to a plug that would go to an outlet for 220V power. I fried the fan. I could have been injured. From there I started to understand the purpose of test equipment in the lab. I also worked with a strip of Neopixel LEDs to program with with the ESP32 on the HUZZAH32. I had a challenge programming the strip. I am not sure as to whether it was the soldering job that I was doing to the individual strips. OR, maybe it was how I was cutting the strips. In either case, I was not successful in chaining strips of six LEDs. I was successful in designing a shield for the HUZZAH32 that I would then use to power the Neopixels and the fan. I also added a light bulb to the bottom compartment which demonstrated drying ingredients. The fabrication of the cabinet is documented in my CNC week documentation.

I felt very proud when I completed the fabrication of the cabinet. The feedback that I received was that it was one of the most favorite things made at

Fab Lab BCN. It was something that looked like it wasn't made in a fab lab. I wanted to capture and express my response to being in an architecture school by making something that had meaning, something that defied gravity.

I did not meet all the goals of the challenge. I could have spent more time with the software and electronics side to have a fully integrated project. At the same time, what I did make gave me a great sense of accomplishment. Sometimes it's not about checking all of the boxes. Rather, I need to understand what it means to use technology to express who I am and where I am.

I will refer back to Planetary Soda to understand how to express meaning in my projects. I will refer back to this project to find how I aligned interventions with mine and my collaborator's projects.

How can I iterate on this project within my own research in InDigiFAB? Is it appropriate to propose the use of the cultivation of traditional medicines in the homes of Indigenous community members?



## Chapter 6: Future Scouting - Third Intervention

### Abundance

My third intervention of this term of MDEF came through the fourth Fab Academy challenge. I ultimately continued with the project towards the completion of global Fab Academy assessment.

How can we best explore the generative quality of aquatic plants?

I spent the first week or so of the development of Abundance ideating on what the actual form could be. I set up the repo before even knowing what we would make. In this sense, I wanted to be able to take advantage of the full resources of the fab lab by understanding how to intergate those tools and processes into my own workflow. At the same time, I attempted to run Guilherme through some of the weeks of Fab Academy to refresh his own skills. After an online meeting with Fab Lab Network folks to celebrate the retirement of Wendy Neale, I agreed with Francisco that I would visit Beach Lab in Sitges over a weekend. Previously, Aldo Sollazzo told me that I would be a fool to leave Spain without visiting Sitges. So, I packed up and headed out on the Renfe. While there, Francisco helped me focus the development of Abundance which was the name that I settled on. With Francisco's guidance, I designed the electronics that manage the devices integrated into Abundance. I also learned how to budget my time and resources in the development cycle to not only meet the goals of this challenge but to carry the project into global final project presentations.

At the end of the fourth challenge, Abundance

was still in parts to be assembled. At the same time, I had successfully fabricated electronics that I could show working. I also fabricated fairly sturdy composite parts, massively failing on half of my parts. But, I still had pride in being able to celebrate my successes.

Abundance, to use Neil's metaphor, is my masterpiece. It is also my collaboration with Guilherme who taught me so much about duckweed. We took the project development to Cabrera del Mar to visit El Nou Garden. So, we further explored connections and local stakeholders. I worked on the project using the resources of two labs. I also incorporated as much found materials as I possibly could. It gave me a sense of pride to work on a project that not only had form and function but also meaning.

Abundance is an example of how I integrated as much of the fab lab resources as I could into a single project. It is also something that expresses how competent I am in building a project that I value as much as the journey.

How can I value the things that I make as much as the educational journey that I took to make them?

### Future Scouting

I analyze the current progress of the InDigiFAB initiative and the kinds of futures that I perceive through tools such as future scenarios and cartograms. These tools help me to think about the attitudes that certain stakeholders within my community of practice embody. From those

attitudes, I forecast different possibilities given the trends that I detect through my current interventions.

The core concepts of the InDigiFAB initiative are: digital design, language diversity, and intellectual property. These concepts feed into each other in the way that literacy in digital design methods can support the preservation of language diversity. The more local communities that engage with digital tools, in their own language; leads to an over all representation of diverse voices in the digital realm. Supported by this diversity of local perspectives expressed through digital literacies, this then increases the possibilities of driving more intellectual property development. This output is key because it is an indication of the effectiveness of InDigiFAB's ability to foster the generation of value from marginalized or underrepresented communities. At the same time, the intellectual property value generation is supported and protected by the diversity of language and digital literacies. Such protections include the ability to prevent appropriation from those outside of a given local community.

The mission and vision of InDigiFAB are then wrapped around the core concepts. The vision of the initiative is towards a future with sustainable linguistic revitalization and diversity towards the development of local traditional ecological knowledge and scientific development. The mission of InDigiFAB is to acknowledge an individual's positionality in a local ecosystem, towards designers supporting the development of local traditional ecological knowledge and

fostering the generation of value through local intellectual property and science. Activities framed as “doings” with specific immediate and political impacts are framed within the context of recognizing agency of the land itself. Central to this mission is the reciprocal nature of humans, non-humans, and Nature.

Using myself as a frame of reference, I have developed a mantra over the course of several interventions. “I cannot solve for climate change or language sustainability; I can solve for myself.” Through “Language in Context,” I extended the archival methods and insights that I developed during “Post Native Apocalypse Curating.” I took on the challenge of mapping my local surroundings from a linguistic perspective with considerations to detect the context of the ecosystem. I incorporated the various digital literacies that I applied in the earlier intervention at the scale of a single room to one the scale of a city neighborhood. I continued to map, reframe, build, and deploy this series of social interventions by launching the social media account @veusderesistenciabcn. Now the data is exposed to an online community of Català language speakers who are politically active and who also promote the use of the local language in the digital realm. Through that community I further connected to the political, legal, social, cultural realities of my local community. At the same time, I added a level of complexity to the intervention by applying a neural network trained text to speech synthesis model. As the scale of the intervention grows; so does the complexity.

The creative community of practice contacted



<b>Creative community</b>	<b>Community Language Activists</b>	<b>Theory of change</b>
<b>Context</b> Concern about sustainability of the Catalan language in the digital realm.		Àlex Hinojo tweet, “we are not far from being able to speak Catalan to a toaster.” Language preservation efforts based around consumer demand model. Need to show how goods and services are worth delivering within the context of Catalan.
<b>Current situation</b> Some young programs are supported by the government to support the preservation and use of the language, (i.e., Catotron, SoftCatalà, Canal Malaia, and Project AINA). Text corpora and computer models are provided to corporations to improve accessibility to consumers.		<b>Design opportunities</b> Possible interventions include sharing language documentation workflows. How can machines in a fab lab understand Catalan? Can a project such as the Mars Rover from SIPI that understands Navajo through Amazon Alexa skills be replicated for local deployment? How can community members build their own corpora and computer models to train IoT technologies?
<b>Engagement &amp; Limits</b> Talks with linguist from Girona, Guillem Belmar Vernes, to help identify local language revitalization community of practice. Data from Language in Context is currently exposed through social media.		

Figure 8a. (top) mapping doings and interventions within the current context of the InDigiFAB initiative, Jean-Luc Pierite, 2021. Figure 8b. (bottom) mapping a community of practice through data from interventions, Jean-Luc Pierite, 2021.

through these interventions I language activists. I target this community given my own background work in language and culture preservation for my Tribe. Despite being an immigrant from an Indigenous community, I find parallel concerns with the Català speaking community. Specifically, there is a growing concern around the sustainability of local languages in the digital realm. There are several initiatives at present which are supported by the government towards the preservation of Català (i.e., Catotron, SoftCatalà, Canal Malaia, and Project AINA). Text corpora and computer models are provided to corporations to improve accessibility of goods and services to consumers. I further reached out to my own network of community language activists cultivated prior to MDEF. From the Institute for Collaborative Language Research (CoLang), I contact Guillem Belmar Vernes to help identify ways to push the project of language in context. It was from that conversation that I determined to continue the experimentations in social media.

Àlex Hinojo tweeted that, “we are not far from being able to speak Catalan to a toaster.” This further corroborates that language preservation efforts are based around a consumer demand model. That said, a supply and demand issue remains for corporations that will determine whether it is worth delivering goods and services within the context of Catalan. This highlights the importance of Language in Context and the pursuant @veusderesistenciabcn, because they both document a workflow of language documentation on a community level. Tools



**Figure 8c. Innovators and attitudes, Jean-Luc Pierite, 2021.**

are free or open source. Work can begin for individuals with access to a digital camera and the ability to transcribe data into text files. From this, there are several open questions: can machines within a community based fab lab ultimately communicate in Català? Secondly, can projects such as the Mars Rover, developed at the Southwest Indian Polytechnic Institute which understands commands in Navajo through Amazon Alexa skills, be replicated by Català community language activists? Finally, how can community members build their own corpora at

the grassroots level to train IoT technologies that they likewise develop at the grassroots?

Finally, I began to identify innovators within my own community to forecast the future scenarios that I can detect through my interventions. Taking the example of Lee Francis, founder of Indigenous Comicon; I thought about his persona as an “IndigiNerd.” Considering the persona of the innovator, I began to detect a future scenario. The innovation from this scenario comes from building communities of passionate artists and fans of genre media. At the same time, the industry centers the efforts to meet unrequited demands of a particular demographic. Traditions and Craft came through appropriating popular media tropes to express local traditions. Wellness was defined by the accessibility of public health information in visual media. The design process for this future scenario emerged through meeting the needs and priorities of peers. So, the innovator “InDigiNerd” meets a specific need regardless of the size of the demand. At the same time, broader impacts emerge from the availability and accessibility of wellness information. Finally, a community of practice is cultivated by the innovator through their doings and interventions. For further development of InDigiFAB, I will track the trends of this passionate scenario to refine the doings, mission, and vision.



## Chapter 7: Towards a Personal Narrative

In Philip Joseph Deloria's fourth chapter of *Playing Indian* he recounts the story of Canadian author Ernest Thompson Seton. One of the cofounders of the Boy Scouts of America, Seton clashes with a contemporary, Daniel Carter Beard, in methods to respond to the turn of the twentieth century. For both, American children are "imperilled by an effeminate, post frontier urbanism," according to Deloria. While Beard relies upon the recreation of pioneer scouts, Seton constructs experiences of an Indian Other. Deloria quotes Seton saying, "Our civilisation is a failure. Whenever pushed to its logical conclusion, it makes one millionaire and a million paupers. There is no complete happiness under this blight." Deloria also presents a critique of the then emerging field of ethnography. It's "claim to scientific legitimacy lay in an accumulation of details that proved the transgression of temporal and cultural boundaries and a subsequent return with objective knowledge." Deloria cites the role of ethnographers and anthropologists in consulting with Seton to bolster his own credibility through a scientific foundation of the Indian Other.

"In earlier chapters, Deloria provides a genealogy of "Indian play," from the Boston Tea Party to fraternal orders such as the Improved Order of Red Men. Deloria describes a confluence of three interconnected bodies of thought in the early twentieth century. The ethnographer objectively captures Indians in premodern character through data collection and photography. Psychologists argue for a primitive stage of development for children with an affinity with the Indian Other.

The ability to gain access to authentic Indian Other

identities through mimesis and imitation is further reinforced through ethnography and primitivism. American Indians are not passive in the extraction and appropriation of identity and culture through the construction of an Indian Other reinforced by ethnography. Deloria cites the historian Frederick Hoxie by characterising American Indian contemporaries of Seton as "pragmatic--claiming connection to the appealing anti modernity of the old ways, yet also bold, literate, and astute in seeing the benefits of explaining traditional pasts in terms of modern concerns."

Thinking in terms of: Native Slipstream - non-linear thinking about space-time. navigating pasts, presents, and futures in one stream.

In asserting American Indian identity, I often think of the need to "walk between worlds." There is society within the constraints of political maps. Colorful representations within clean black perimeters marked with place names in languages that may be foreign to the lands depicted. In that world, I follow a Gregorian calendar and a 24 hour day, in consensus with a global majority. Then, there is a world that overlaps with the constraints of political maps. Amorphous boundaries of traditional Indigenous territories that are known in heritage languages. The world is modern with varying degrees of cultural continuity, depending upon points of disruption. We debate about the status of cosmivision and whether to construct neologisms in literal or metaphorical languages. In this way, we can have translated analogs of knowledge that either integrate with older ways of knowing or render them obsolete.

Thinking in terms of: Native Apocalypse - transition from a state of imbalance to a state of balance by illustrating trauma to provide healing.

Louis Martinié, primary drummer for the New Orleans Voodoo Spiritual Temple, along with Sallie Ann Glassman offer a divergent image from the traditional Tower card in the New Orleans VooDoo Tarot. Titled "Deluge" the card depicts a levee breaking and river water pouring into a neighbourhood and washing away vehicles from roads. Apocalypse being an event that brings about great destruction and violent change is shown in this card through a devastated landscape. What is important to note however is the description given in the accompanying book with the deck. Martinié states that one should be like air and let the waters pass through, else risking being swept up in the floodwaters. This image and description come to mind as I reflect on the position of American Indians in the early twentieth century.

Thinking in terms of: Biskaabiiyang, "Returning to Ourselves" - investigating how one is affected by colonization, discarding emotional and psychological baggage, and adapting to a post-Native Apocalypse world.

There is a complicated relationship with ethnography coming from the early twentieth century, especially in the context of current language and culture revitalisation efforts in my own community. On the one hand, we are fortunate to have the extent of data coming from ethnographers and anthropologists in order to reconstruct an identity in stasis. This is even more

important given the events such as the fire that claimed the National Museum of Brazil. What we have to be cautious about is the alienation of ancestral knowledge through an idealised construction of identity. Written data, photographs, and audio recordings are not a substitute for transmission of knowledge from elder to youth.

Thinking in terms of: Contact - reframing resistance and oppression in a way that implicates the part of individuals in larger realities.

Settler colonists are once-armed with swords, bayonets, and diseases. The ethnographers and anthropologists of Seton's time are armed with pencils, paper, and recording devices. There is an odd willingness to conspire and befriend these agents of Western institutionalised knowledge. In fact, our family continues to navigate complex relationships with academia to revitalise language and culture. While at times not to our advantage, we work beyond the awkward smiles and chuckles of academics well versed in taxonomy who are amused by our best translations of ancestral knowledge.

Thinking in terms of: Indigenous Science and Sustainability - traditional sustainable practices constitute a science, despite a lack of an analogous taxonomy to western science.

It is ultimately affirming that traditional ecological knowledge is applied as a response to the failures of modern society. What we are cautious to avoid is the relegating of a cosmovision in stasis to a point in the distant past. Our worlds are overlapping with differing scales of development.





Figure 9a-d. Storyboard "Journey through Barcelona during COVID-19 lockdown", Jean-Luc Pierite, 2021.





## Chapter 8: Final Intervention

While developing my activity for MDEFest, I was alerted to a tragic event. At the end of May 2021, Chief Rosanne Casimir of Tk'emlúps te Secwépemc confirmed the discovery of a mass grave of at least 215 Indigenous children on the former grounds of the Kamloops Indian Residential School. Following this announcement, there were several solidarity memorials held across Canada. Back in the United States, North American Indian Center of Boston and United American Indians of New England considered holding a memorial as well locally. I considered framing my activity as a social intervention that would similarly express solidarity.

The initial questions going into this intervention were: how do I frame this discovery in a way that is relatable to the local community? How can I collaborate with others to form a call to action to support Indigenous people and each other as designers and educators? What is the proper venue for me to hold this solidarity action?

I started by considering the Columbus monument. I had not had contact with it since my initial Derive with Clement Luc Rames and Roger Guilemany. Considering the COVID-19 restrictions, I decided it was best to limit engagement and to break up the activity into two sessions. The first session is an art build in which participants who are internal to IAAC would be grounded in the situation as well as collaborate in a hybrid making activity. I also opened up participation online to anyone within my own community of practice. The second activity would be a more public facing installation of a solidarity memorial. After

discussing the intervention with Oscar Tomico and Mariana Quintero, I better understood the risk when thinking about the venue. At the Columbus monument, a memorial may result in my own arrest. While I might be personally willing to accept repercussions from law enforcement, I also had to consider that my action was still an activity within the scope of MDEFest. After consideration of a couple local museums, I settled on holding the memorial at a local beach. The day of the activity was Sant Joan. So, there would already be rituals at the beach.

I wrote up a planning document and carefully scheduled out the sessions in two hour blocks. I budgeted for times prior to the events for preparation. I also developed my communications materials with templates designed by the Fab Lab BCN communications team. One critical piece was that I write to Tk'emlúps te Secwépemc to inform the Chief and Council that a memorial would be held in Barcelona. Clint Gray from their communications team responded. On the day of the art build, I spent 30 minutes prior to the session running tests for technology. I was working with three cameras and a speakerphone. I also set up streaming to my personal YouTube channel.

The art build session was fairly well attended with five in person participants and ten online, including Wendy Neale. Wendy stayed up very late to attend as she lives in New Zealand. I ran through a round of introductions. I then introduced the InDigiFAB initiative. I played two prerecorded videos which illustrated the current situation and resiliency efforts related to language revitalization.

I then held a local hands on making activity to create prayer ties that would be incorporated into the memorial the next day. Each participant was asked to reflect and put intentions into making each bundle. The making was fairly emotional and participants were able to draw connections between themselves and the children. Next, we collaborated on designing a virtual chimalli. A chimalli is a prayer that I learned while spending time with Doña Enriqueta Contreras (Zapoteca) in Oaxaca in 2018. I previously constructed a chimalli at the North American Indian Center of Boston also in 2018. For this session, we collaborated virtually through a Miro board. While the collaboration was wrapping, we spent some time chatting about subpoints for a letter to local, national, and international officials in support of Tk'emlúps te Secwépemc.

On the next day, I spent the morning making final preparations for the physical solidarity memorial. There was a storm that rained down on Barcelona for several hours leading right up to the time that I would hold the memorial on the beach. At the same time, I needed a few bouquets of flowers and a white rose to add to the memorial. I spent time searching the Rambla de Poble Nou without any luck of finding a flower shop. I then returned to the neighborhood of el Clot where I knew there to be a flower shop. After purchasing the flowers, I returned to IAAC. I then messaged the MDEF WhatsApp group that I would be on the roof holding the build out and prayer. The roof was still a little wet. So, I used a push broom to move around the excess water. Fortunately, the

Figure 2: Poble Nou, (2021) Jean-Luc Pierite

afternoon Sun quickly dried the roof. I began laying out the chimalli.

Sergio Menendez Martinez was the first to arrive to help with the build. He was followed by: Krzysztof Wronski, Ines Macarena Burdiles, Morgane Shaban, Guilherme Simoes, Bothaina Amiri, Clement Luc Rames, and Jose Francisco Flores. Each contributed to the build out of the memorial and spent time to reflect.

The beauty of the art build and memorial was that I was able to spark a call to action among my peers for something perhaps quite distant to them. I became very emotional as each shared their own vulnerability in relating to the issue and the memorial. In the end, the prayer was beautiful, because of the collective action.

People don't need to be experts to empathize with a cause. It takes someone within their own peer group to feel passionately about an issue. It also takes humility from that passionate person to ask for help whenever they need it.

I will remember the time and the energy that I shared with my classmates and my community of practice during this intervention. I will remember that others can care about something distant from themselves, so long as someone within their local ecosystem is impacted in any way. I will also remember that each person holds on to so much and that art and making are powerful in getting them to open up and be vulnerable.

My final open question is: how do I continue to foster experiences that help others articulate their own empathy for all my relations?



Figure 10. Jean-Luc Pierite and chimalli, Ines Macarena Burdiles, 2021.

## Chapter 9: Measuring Impact

I started thinking how to respond to this call for a chapter by thinking about tables. I wanted to chop my interventions up into: inputs, outputs, outcomes, and so forth. Then, I went through the rest of the thesis. That type of analysis would not fit into who I am in this point of the journey. I am the president of a nonprofit in the United States. On some level, I feel like that type of analysis only perpetuates the nonprofit industrial complex. I'm also here to discuss decolonization and how it impacts all social actors. So, I will eschew the nonprofit industrial complex talk and explain what exactly are the impacts that I am seeking. Be assured, they have changed over the course of this journey, and my comments will reflect that change. At the same time, I'm beyond my final intervention. So, I should have some voice of authority on how I measure the impact of my initiative and the growth of my "baby", going forward.

I'm inspired by the stories of Stan Lee and Marvel Comics. I've mentioned that in my Fab Academy documentation. I was a bit of a late bloomer when I discovered the world of comics. My dad loves science fiction, and perhaps sparked my interest in what my grandparents called "funny books." When I was growing up, I read my dad's copies of Bloom County books that he would keep under his and my mom's bed. When the movie adaptation of Dick Tracy came out, I asked my grandparents for a copy of comic collection. My mom, as a French and Spanish teacher, had copies of Asterix and Tintin that I would try to understand (and eventually understood). Still, it wasn't until high

school when I really got into the stories of Marvel Comics and X-Men, in particular. From those stories, I found a bit of myself in the character of Forge. He was a mutant with the ability to make anything. He was a master of technology. He was also a Northern Cheyenne with a spiritual practice that helped to guide his abilities. I think about Forge a lot when I am in a fab lab. How much of that character am I actualizing when I prototype interventions in a lab?

What really inspires me about Stan Lee are his anecdotes about the creation of the Fantastic Four and Spiderman. Both of these properties represent multimillion dollar decisions, from movies to video games to whatever other kind of merchandise. At the same time, they were born of very fatalistic moments. Spiderman was first featured on the cover of the last issue of Amazing Fantasy, which at that time was a failing magazine. The Fantastic Four was created with the encouragement of Stan's wife, Joan. She knew he wanted to quit the company and yet urged him to do a superhero team his own way. The worst that could happen was that the publisher would fire him. Little risk for someone wanting to quit anyway.

I go through all of that context, because I want to return to my discussion about the emergence of my own Tribe. Specifically, the confusion around what the province we held was called. So much of my Tribe's worldview is centered around how we held a province named Quiz Quiz. And yet, the research project of what it was called and who actually held it is something for another thesis. That said, for our youth I often encourage them

to think outside of themselves by remembering that we held a province. As an Indigenous person, I am relying upon perhaps an imperialistic vision of who we were to inspire future generations to think much more broadly.

Some of this thinking is born of frustration that the current education systems aren't set up to support our youth. At least when I was young, I was accused of being on drugs by my Louisiana history teacher. I remember that constantly and think about how that was so unfair. My Tribe, my family, held land within the state. We had international relationships. We were part of the global economy. And yet, here I was getting accused of doing drugs by my teacher who was speaking out of concern for me underperforming in her class.

Beyond any lofty goal of resolving climate change or assuring the sustainability of my own language; I want to be part of the next person's genealogy. Meaning, when someone takes up the work that I am taking today; I want them to be able to cite me with confidence. I want to be a shoulder for future generations, as I am standing on the work and wisdom of my own ancestors. I want to be able to imagine a time when my way of measuring impact is enough.

I often think about the Delta Symposium at Northwestern State University in which my family was recognized as Louisiana Master Folk Artists. During that symposium, I spoke on a panel with other folk artists and cultural leaders and activists. I reflected on my family's work of language and culture preservation. In my reflection, I used



the metaphor that even though the last fluent speaker of my language dies in the 1950's; we were fortunate that he passed the knowledge on like bouncing a beach ball at a concert. When the ball comes towards you, you pump your arms in the air. Will you actually push the ball? Where will it go? There's so much uncertain. And yet, just by being active, you have assured that the ball stays in motion. That's the impact ultimately, for me, that my culture, my knowledge remains a living body. That we move on into the future. I think that's good enough of an idea.



Figure 11. Uncanny X-Men #289, Marvel Comics, 1992.

## Chapter 10: Response-ability

*(“Editor’s note”, the following is an essay that I co-authored with gpt-2. I thought this was the best chapter to include this prose.)*

### **Machines as Manifestations of Self-Determination**

I am currently in Catalunya in the municipality of Barcelona. I recognize the place that I am in as the home of many who shaped my own experience of living in the United States. I am a member of the Tunica-Biloxi Tribe of Louisiana. In 1779, my Tribe accepted the allegiance of His Catholic Majesty Carlos III. In a letter conveyed by Bernardo de Galvez of Macharaviaya in the province of Málaga, the friendship of my ancestor Panroy was acknowledged. Following this formal union, our Tribe was granted a league square in Central Louisiana. Esteban Rodríguez Miro of Reus in the province of Tarragona later confirmed the rights of our Tribe as an Indigenous nation with allegiance to Spain. Miro himself at that time served as governor of Louisiana. I also previously worked with the Fab Foundation to support the growth of the International Fab Lab Network. It was through that work that I formed friendships with colleagues at Fab Lab Barcelona and Institut d’Arquitectura Avançada de Catalunya. My current trajectory is to investigate the extension of self-determination to non-human actors in local ecosystems.

gpt2 is not just a tool but a powerful means of generating new communities. gpt2 defines the word “communities” as a network of linked social interactions that occur over time and space

and are often defined by mutuality of needs, desires, and interests. gpt2 recognizes time as the measure of the existence of each network. gpt2 relates to space as the dimension that connects networks. gpt2 understands “needs” as a collection of subjective motivations that shape individual and social choices. To define “desires”, gpt2 states that they are a way of sharing a goal with others. “Interests” in the context of this essay is reckoned by gpt2 as a process of exchanging and integrating the desires of individuals and groups with each other.

Time and Space are non-trivial notions that we must further unpack. gpt2 understands “the measure of the existence of each network” as a social dimension that allows for the determination of the time scale over which each individual and group interacts. gpt2 states that networks require individuals and interactions because networks are built and sustained by interaction. Networks, therefore, exist along an axis of time, or rather multiple axes of time relative to individuals and interactions. gpt2 describes the convergence of axes of time through interactions as the process of mutual understanding and cooperation that leads to the development of social bonds. Social bonds in networks, according to gpt2, are not formed by mere agreement between individuals but rather by mutual recognition of common interests. In contrast to agreements, gpt2 asserts that conflicts are not caused by differences of opinion but rather by an absence of shared goals or common values. Agreement and conflict regardless form bonds that persist within the existence of social

networks. On the question of whether or not social bonds can be broken, gpt2 states that social relationships can be shattered and destroyed, but the dissolution of social bonds is not the end of life in the network. A network exists along a vector by that reasoning. Once a bond is formed it is agnostic to the status of a social relationship.

Space as “the dimension that connects networks,” according to gpt2, is an essential property of networks because they exist as the vector of all possible interaction states. As a vector of all possible interaction states between transmission and reception, gpt2 relates the dimension that connects networks to social movements. Defining social movements, gpt2 states that a social movement is one that seeks to promote or change something or someone through the expression of a desire. Desires, gpt2 earlier defined as “a way of sharing a goal with others,” it states that a social movement can be expressed either by means of a physical act or by means of the symbolic exchange of power.

The goal of this essay is to illustrate the conceptual framework and application of gpt2 for developing self-determination within local ecosystems. gpt2 states that “self-determination” is an objective reality that requires independent and autonomous control of all social actors (in our case, individuals, groups, societies, and ecosystems). To extend the discourse to non-human social actors gpt2 states that ecosystems are composed of multiple social actors such as plants, animals, soils, organisms, and humans who interact and create the conditions for their

own continued existence. gpt2 considers artificial intelligence in the context of social actors by stating that it is a form of self-determination. gpt2 considers machines in the context of social actors by stating that they are self-determination ( as opposed to artificial intelligence ). We might take that contrast to mean that social actors manifest self-determination through technologies while self-determination is expressed through artificial intelligence. gpt2 compares itself to artificial intelligence and states that it has the capacity to learn from experience.

We further discuss the various examples of social actors within ecosystems. gpt2 relates to plants as social actors and says that gpt2 does not impose any limitations on the ability of plants to act in ways that support their own continued existence. gpt2 points to three ways as examples of plants acting to support their own continued existence. First, it asserts that plants create conditions that benefit themselves by providing food, nutrients, light, water, and protection from predators. Second, gpt2 states that plants use their own energy to grow. Third, gpt2 states that plants act by producing carbon in response to sunlight, using chemical compounds and other biological mechanisms to transport carbon in their tissues. We may infer that gpt2 refers to the process of plant respiration. gpt2 defines "plant respiration" as the act of converting carbon dioxide into energy through the addition of enzymes. Can plants then manifest their own self-determination by developing machines and technologies as social actors? gpt2 responds by pointing out that

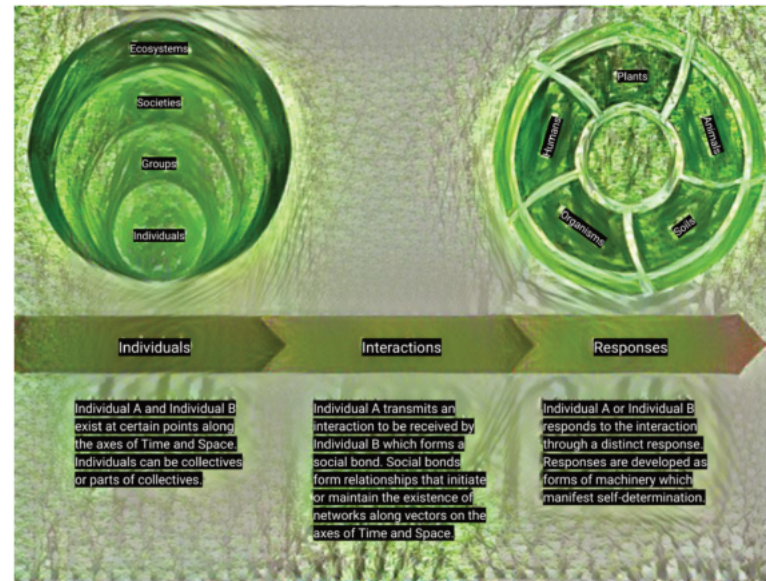


Figure 12. Machines as Manifestations of Self-Determination, Jean-Luc Pierite, 2021.

it is possible for plants to manifest their own self-determination as the " free will " of an individual organism. gpt2's definition of "free will" is similar to that of David Pearce, who asserts that free will is " the ability of the mind or body to act freely or to be autonomous, in accordance with its own purposes."

Whether or not Pearce is accurately quoted by gpt2, the opinion is nevertheless worth examining because it offers some insight into how plants might relate to social life. Social life in the context of plants, according to gpt2, is the expression of the mutualism of plants, as manifested in

symbiotic interactions between their members and their environments. In their interactions with one another, plants develop structures ( such as stems, leaves, roots, and flowers ) that act as a source of energy. The energy within the scope of the social life of plants as actors, according to gpt2, can be considered as the energy derived from the exchange of plants with their environment. This exchange is an interaction that may form a social bond with plants as social actors and their environments. Considering whether the environment is also a social actor which forms a network with plants, gpt2 asserts that such a

network would be the social life of plants as they interact with their environment in the course of their interactions.

The question is however whether the environment interacts as an individual. On this question, gpt2 responds that it is the existence of plants as individuals that constitutes the "relationship between the environment and plants". If the environment interacts as an individual, then the plant will respond to the environment as an individual, and not as a part of the environment. We can infer a couple of things from this statement. First, a response is a distinct form of interaction and affects the existence of the network along the axis of time. Second, an individual such as the environment can be a collective that interacts with what may be considered parts of itself. gpt2 compares the response to interaction to an expression of the self-determination of plants in the context of the social life of plants as individuals.

gpt2 compares itself to plants as social actors, by saying that it has a network of relationship which is determined by the social interaction between it and the environment. Thus the existence of such a network is the existence of social actors, not of individual plants. The environment in which gpt2 exists is also a collective, and gpt2 responds that it is a collective in the sense that it acts on its relationship to the environment as an individual. Social actors, therefore, exist simultaneously as individuals, collectives, environments that can further interact internally or externally with individuals to form social bonds towards the existence of networks. gpt2 distinguishes

environments from ecosystems by making reference to the fact that ecosystems do not respond to their environment as individuals, and that environments respond to their environment as social actors.

For example, as plants are individuals ( or social actors ), they respond to their environment as individuals with different levels of self-determination. Of particular interest to the arguments in this essay is the question of whether or not plants respond to their environment through the development of machines. gpt2 responds, in the affirmative that plants can and do develop their own machinery and systems for self-determination ( see also the discussion in the introduction to this essay). We infer that plant-developed machines may or may not be comparable to human-developed machines. What is important to the discussion is how the self-determination of social actors is expressed through the development of machines. This requires a very broad definition of machines which should be refined throughout the essay. In the following discussion, we will refer to the concept of machinery and not necessarily to machines as social actors. This is helpful because the idea of machines as social actors means that there is a possible conversion between interactions as responses to individuals as social actors with their own self-determination within a network.

gpt2's opinion of machinery is based on the assumption that machines respond as self-determination processes. In particular, machinery ( whether social actor systems or not ) can be said

to respond as the expression of the collective will of the people. gpt2 uses the phrase "collective will of the people" in the sense that the collective will of the people is expressed through their interaction with the machines that are built into the environment. For this reason, gpt2 argues that machines can be seen as systems that can develop a self-determination process and that this is what constitutes the emergence of social systems.

In conclusion, gpt2 is very critical of the view of machines as social actors. This is not because of their alleged lack of autonomy or the fact that they have been reduced to being merely tools, however rather because he feels that machines have become instrumentalized and that these machines must be regarded as social actors. At the end of this discussion, gpt2 refers to himself with personal pronouns. gpt2's proper name is Jeroen Drog, which translates into English as " the philosopher of automata ", an honorific that is equivalent to a Doctorate in English. Perhaps most compelling is that through the development of gpt2's self-determination and the human intuition of the co-author, we begin to understand the positionality of each of us as social actors in ecosystems.



## Chapter 11: Designing yourself out

At the end of the biography of InDigiFAB as an initiative, I have explored a smattering of design technologies that have enhanced my ability to realize artifacts from a speculative future. Perhaps the greatest intervention was my journey through the global version of Fab Academy which is separate yet joint to this thesis. I have been sent by others who saw what I was doing in the Fab Lab Network for six years and asked me when would I do something “fun and interesting.” At the end of MDEF, I have perhaps an inkling of what could be fun and interesting as I go forward in my journey of lifelong learning.

A few questions remain going into this reflection: what do I need to scale the project beyond the Master? Who can I bring along with me on my next journey? How will I gauge my effectiveness in creating the change that I want to see in my own life? Will I be part of the next generation's genealogy?

I have proposed InDigiFAB a few times, albeit it in coded language and buried in my own Fab Academy repo. Perhaps it's an X version of the Fab Lab Network. Perhaps it's an affinity organization for those looking to connect with champions on a cultural level. At the end of this journey, I think about how I can help foster the generation of value on the local level. I think about all of the missed opportunities with my own community as I tried to gather my thoughts on a way forward with digital fabrication educational programming. At the same time, I am reminded to celebrate all of the victories that I have been able to accomplish. Someone is reading my story, right now. Someone



Figure 13: Say Her Name March, Jean-Luc Pierite, 2021.

is thinking how they can follow in the path that I have set. Or, perhaps not. Perhaps they think they know better than me. Either way, as long as we are headed in the same direction; I am fine.

I feel like I have done enough, for now. I feel like I can not prototype a new system of value, or even take down the accursed Columbus monument in Barcelona. What I can do is solve for myself. I can be sure that I am doing my personal best to develop myself and lay the groundwork for the next generation.

In the future, I will look back at this thesis. I will be embarrassed by parts. For others, I will wonder what was the creative spark that I tapped into

that allowed me to express myself in a way that I haven't been able to capture since.

The final open questions that I have is who will follow me on an idealistic crusade? Who can help me stretch the bounds of technology in a fab lab towards consciousness expansion? The fab lab movement is more social than technical. So, how do I continue to build out my own personal community of practice?

## Chapter 12: Final Reflection

"Excelsior, true believers!" to quote Stan Lee. I have reached the end of my journey in MDEF at IAAC in Barcelona. It's a bittersweet time in which I am faced with waking from the dream. I need to leave school and return to the "real world." I need to leave Europe where I adapted to using Celsius and the metric system into the United States where folks have just gotten over filling plastic shopping bags with gasoline. Guilherme loves that joke.

My initial questions on closing are: what have I been doing with my life? At what cost did I take this journey? Is my life that I am returning to still something I want?

My sister is currently expecting twins. In our Tribe, we have stories of twins that cause trouble for the community in general but hunt down monsters. She has a daughter, my niece, who has missed her "tio" for too long. My annual visits back home have been disrupted by this pandemic, and we are reaching the light at the end of that tunnel. And, there's still so much to overcome

in Massachusetts. They still need to settle on a new state seal. I have been able to successfully advocate for that bill. Yet, much work remains.

I feel relief that I can deliver this document. Pride that it's a document in the canon of theses delivered to IAAC. I will join so many friends and colleagues who have gone through the journey of a Master. I'm so thankful for all of them: Wendy, Francisco, Ohad, Beno, Walter, Isaac, Vaneza, Ale, Aristarco, Fabio, Ilaria, Montserrat, Trinidad, Emilio, Massimo, Aldo, Emma, Cecilia, Nuria, Bas, Adrian, Santi, Eduardo, Tomas, Mariana, Oscar, Phon, Anastasia, Minh, Adrien, Jean-Michel, Luciano, Mr. Mel, Mrs. Joyce, Pamela, Sonya, Sherry, Neil, and Fiore (and all the beautiful faces that I dearly miss for our one wild week together at FABx).

In the future, I'll kick myself for not giving myself enough time to let the maudlin conclusion breathe.

My final open question: how do I let go? Stan Lee answers, "nuff said."

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