

Latin American Futurism/s  
Technologies, Visions, and Communities of Futures-making and Forward-Knowing

by

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## ABSTRACT

In this dissertation, I explore the possibility of Latin American Futurism/s because Latin American visions of the future are primarily absent from the global conversation of alternative or counter futures. In three chapters, I expose three interrelated yet methodologically different approaches to understanding the emerging phenomenon of Latin American Futurism/s: A exploration of the connections between notions of visions of technology/futures for El Salvador's Bitcoin and South Cone's robots, the experiences and practices of local future-makers and their communities; and artifacts that characterize expressions of regional futuring. To comprehend the region's technological paradigms, I offer these socio-technical accounts of Future-making and Future-knowledge for/from Latin America as a geo-political region. Each element contributes, with its different interdisciplinary perspective, to characterizing "Latin American Futurism/s" as a form of technological rationality and regional futuring as an expression of shared paradigms about science and technology. These characterizations allow for an appreciation of the paradigms, strategies, and artifacts that configure domestic and professional futurity in Latin America, focusing on its objects and visions as mediators and sense-makers of what ought to come. In this manuscript, I offer a characterization of Latin American futurism/s to facilitate its recognition and understanding and to put in value the production of forward-oriented knowledge produced by people thinking and living in Latin America.

## RESUMEN

En esta disertación, exploro la posibilidad del/de los Futurismo/s latinoamericano/s porque las visiones latinoamericanas del futuro están principalmente ausentes de la conversación global sobre futuros alternativos o contrafuturos. En tres capítulos, expongo tres enfoques interrelacionados aunque metodológicamente diferentes para comprender el fenómeno emergente del/de los Futurismo/s latinoamericano/s: Una exploración de las conexiones entre las nociones de visiones de tecnología/futuros para los robots del Bitcoin de El Salvador y del Cono Sur, las experiencias y prácticas de los futuristas locales y sus comunidades; y los artefactos que caracterizan las expresiones del futurismo regional. Para comprender los paradigmas tecnológicos de la región, ofrezco estos relatos sociotécnicos de Future-making y Future-knowledge para/desde América Latina como región geopolítica. Cada elemento contribuye, con su diferente perspectiva interdisciplinaria, a caracterizar el/los "Futurismo/s Latinoamericano/s" como una forma de racionalidad tecnológica y el futurismo regional como una expresión de paradigmas compartidos sobre ciencia y tecnología. Esta caracterización permite apreciar los paradigmas, estrategias y artefactos que configuran la futuridad doméstica y profesional en América Latina, centrándose en sus objetos y visiones como mediadores y hacedores de sentido de lo que debe venir. En este manuscrito, ofrezco una caracterización para el/los futurismo/s latinoamericano/s, para facilitar su reconocimiento y comprensión, así como para poner en valor la producción de conocimiento prospectivo que es producido por personas que piensan y viven desde América Latina.

## RESUMO

Nesta dissertação, exploro a possibilidade do(s) Futurismo(s) latino-americano(s) porque as visões latino-americanas do futuro estão principalmente ausentes da conversa global de futuros alternativos ou contra futuros. Em três capítulos, exponho três abordagens inter-relacionadas mas metodologicamente diferentes para compreender o fenómeno emergente do(s) Futurismo(s) latino-americano(s): Uma exploração das ligações entre noções de visões de tecnologia/futuros para os robôs Bitcoin e Cone Sul de El Salvador, as experiências e práticas dos futuristas locais e das suas comunidades; e artefactos que caracterizam as expressões do futuro regional. Para compreender os paradigmas tecnológicos da região, ofereço estes relatos sócio-técnicos de Futuros e Conhecimento de Futuro para/da América Latina como uma região geopolítica. Cada elemento contribui, com a sua diferente perspectiva interdisciplinar, para caracterizar o "Futurismo/s da América Latina" como uma forma de racionalidade tecnológica e o futuro regional como expressão de paradigmas partilhados sobre ciência e tecnologia. Estas caracterizações permitem uma apreciação dos paradigmas, estratégias e artefactos que configuram o futuro doméstico e profissional na América Latina, concentrando-se nos seus objectos e visões como mediadores e fazedores de sentido do que deve vir. Neste manuscrito, ofereço uma caracterização do(s) futurismo(s) latino-americano(s), para facilitar o seu reconhecimento e compreensão, bem como para valorizar a produção de conhecimento orientado para o futuro que é produzido pelas pessoas que pensam e vivem na América Latina.

DEDICATION

*A mi covalante, Mati*

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## GLOSSARY

Futures: A period of time that is to come. Futures are plural and diverse because their characterization depends on the person's perspective envisioning or speculating about it, and the methods employed for its elaboration.

Images or visions of the future: descriptions and/or representations of possible futures for a topic or situation in a given temporal and territorial context. These are one of the epistemic artifacts of interest for Future Studies. Images of the future are a conceptual construct sometimes represented visually or described textually, yet these can be observed from communicative *traces* in different media. Visions of the future are elicited, produced, and captured for different methods and be the creation of an individual or group of individuals. The limits are fuzzy, contradictory, and sometimes incoherent, making them particularly hard to contain and analyze. These also are referred to as future images or future visions.

Images or visions of technology: descriptions and/or representations of a sociotechnical system for a topic or situation in each temporal and territorial context. Those images of technology are an observer's perceived understanding of the system. In contrast to Images of the Future, Images of Technology are rarely visually represented, and those are common in descriptive or narrative form. Images of technology are critical for decision-making, and often people coordinate with similar, but not equivalent, images of technology in their collective coordination about social and technical issues. These are also called technological images, techno visions, or sociotechnical images or visions.

Futurism (academia): Field of study of the future. They are also known as Future Studies. Futurism in this research project refers to the practice and research of future thinking by different methods and disciplines, particularly the diversity of forms, mediums, and patterns of future knowledge; The use of futurism in singular, unless indicated otherwise, will refer to the field of knowledge and its practice.

Disclaimer: Do not confuse it with Futurism (art), the artistic and social *avant-garde* that originated in Italy in the early 20<sup>th</sup> Century and centered on speed, dynamism, violence, youth, and technology.

Futurisms: Situated configurations of future knowledge. These oppose limited, universal or deterministic understandings of the future, and center images of the future around the interests and/or identities of different communities, often minorities or undermined in future-oriented conversations. It is popularized with the concept of Afrofuturism and has multiple territorial and identarian manifestations, which scholars have put together from around the 1990s. Specific manifestations will be identifiable for their prefixes or adjectives related to specific human groups or i (See table 1)

Monofuture: convergent and hegemonic visions of the future that assume human futures are universal, linear, and/or absolute. Their simplicity and frequency make them powerful, recurrent, and stereotypical articulations of ideas and objects about “the future of humankind” that global and regional media reproduce as a single human imagination with which we all go (see Collins, 2005; Luba, 2017). Paradoxically, there is not just one monofuture, but they tend to coordinate and catch attention. For instance, the deemed ecological collapse with the rise of artificial intelligence technologies are two monofutures that often get entangled, e.g., “To solve Climate

change, rapid automation and digitalization are needed to avoid the ecosystemic calamity.”

**Antifuture:** An image of the future misplaced to time and/or location. Antifuture is a category that informs the power dynamic that future images elaborated around monofutures produce in contexts that displace, replace and erase local future-knowledge.

**Counterfuturisms (also Alternative Futurisms):** configure a space of intellectual, social, and technical resistance. Those specific elements are typically described as futurism.

**Future Professional:** the people specializing (by training and/or practice) in designing, facilitating, discussing, and framing the future in multiple sectors. This dissertation will refer to people who define themselves as science fiction writers/editors, speculative designers, emerging technology policymakers, and foresight/prospective specialists who were determined to be the center of that professional expertise and are also referred to as Future Experts.

**Foresight practitioner:** The professional who produces insight and understanding for long-term effects and change processes using different methodologies. Foresight practitioners are generally trained in Future Studies or Futurism, their central epistemic community for most. Still, they may involve diverse practices and tools from other future-making practices.

**Future-making or Future making:** future-making is all practices that produce future-knowledge. There are different epistemic and cultural traditions of future-making,

which produce different modalities of future visions. From an organizational perspective is understood as the work of making sense of possible and probable futures and evaluating, negotiating, and giving form to preferred ones (Whyte, Comi, and Mosca, 2022)

Forward-knowledge: A type of speculative knowledge oriented towards the future. It's based on the experiences, perspectives, and evidence available at the moment of production and the paradigms used to project, foresee, anticipate, envision, and/or create ideas about what is to come. It's a synonym for future knowledge.

Future-thinking: all the ideas about the future which humans produce. This can be based on systematic practices or an intuitive perspective. Future thinking mainly manifests as images of the future, the multimodal product of human future thinking. Future experts specialized in the mediation, production, analysis, and/or dissemination of future-thinking in different communities.

Sociotechnical system: It's a system compound of human and non-human actors, which interact in situated contexts to pertain to different goals and objectives. Sociotechnical systems can use a particular paradigm to characterize, understand and change. In that form, sociotechnical systems are necessary to appreciate the complexities of technological relations with humans.

Agonistic: Inspired by the use in pharmacology and biochemistry, a relation between two elements that promote, uphold, or drive an interaction. In this project, agonistic effects refer to interaction images of technology that cooperate and support the production of the desired image of the future.

Antagonistic: Inspired by the use in pharmacology and biochemistry, a relation between two elements that stop, hinder, and delays an interaction. In this project, antagonistic effects refer to interaction images of technology that inhibit and hamper achieving a specific and desired image of the future.

Allosteric: Inspired by the use in pharmacology and biochemistry, a relation between two elements that transform and modify the expected interaction for other different through a modulation. In this project, allosteric effects refer to an interaction of images of technology that realign and reorient the achievement of the desired image of the future. In that form, allosteric elements in a system will reconfigure a future vision as requirements that, when considered, modify the orientation of what means that vision of the future.

Coloniality: The power relation between knowledge/power produced by the European colonization and its interrelated practices and behaviors that sustain social orders and forms of knowledge. Anibal Quijano initially articulated it as part of the decolonial critique in Latin America and popularized by the intellectual movement of Modernity/Coloniality.

Artifacts of the future: everyday objects, devices, or systems with a future-orientation that disrupts temporal assumptions. Artifacts of the future are common among speculative designers and creators to provoke conversation, imagination, and debate in different communities.

(Textual) Traces: are the multimodal evidence that informs and collects visions of the future. Images are coded in traces in the world as texts, diagrams, representations, maps, pictures, videos, stories, policies, and other forms of media to communicate these perceived or desirable states of a system in the future.



## PREFACE

Knowledge production is a collective endeavor situated in the times we inhabit, the places we share, and the perspectives we access. I had the privilege of learning from incredible people, scholars, workers, colleagues, and friends that have made me grow as a scholar, thinker, and human. I couldn't complete this project without their direct or indirect support, company, trust, and love during the last six years of amazing humans and non-humans that surrounded me.

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This research project had many intermediate products partially represented in this text. Among those, the following publication has been a collaboration emerging from the ideas around this research project.

- Pérez Comisso, M., & Jeffrey, D. (2023). Why Decenter Images of the Future Matter: Absences, Alternatives, and Accomplishments Challenging Future Visions. *World Futures Review*, 19467567231164460.  
<https://journals.sagepub.com/doi/10.1177/19467567231164460>

In addition, I shared part of the knowledge that this dissertation comprises in the following presentations, workshops, and events during my research period. The underlined text refers to available links, which also can be found at [www.mapc.tech](http://www.mapc.tech)

- December 7th, 2022 Ways of Futuring: practices to overcome dichotomies in Latin American Futurisms. 4S/ESOCITE 2022. Cholula, Puebla, Mexico.
- November 16<sup>th</sup>, 2022. How does Latin America envision the future? A study on "Latin American Futurism." Anticipation Conference 2022. Tempe, Arizona, USA.
- September 29<sup>th</sup>, 2022. Futurismo(s) Latinoamericano/a/s: Necesidad, Diversidad y Manifestaciones. (Master Class) Universidad CENTRO. Ciudad de Mexico, Mexico. (remote)
- September 9th, 2022. ¿Por qué la innovación necesita múltiples futurismos? Una exploración de Futurismos Locales. Oficina CORFO, La Serena, Chile.
- June 6th, 2022. Futurismos y Tecnología. Guest lecture in Diseño Tecnológico with Prof. Inaki Goñi. Pontificia Universidad Católica de Chile (remote)



- May 19<sup>th</sup>, 2022. Walking Backwards. Thinking on Latin American Futures. Canadian Society of History and Philosophy of Science. Part of Congress 2022. Virtual Event. (remote)
- April 21<sup>st</sup>, 2022. Decolonizing Futures. Guest Lecture in FIS 201 with Dr. Rajiv Ghimire. Arizona State University.
- June 10th, 2022 - Futurismos na América Latina . Libreria Ponta de Lanca. Sao Paulo, Brazil (video in Portuguese)
- January 12th, 2022 Futuros Latinoamericanos: Artefactos, mecanismos y visiones tecnológicas. IX CTS-Chile. USACH. Santiago, Chile (remote)
- November 17th, 2021 - Rant against Antifutures - I AM INTERNET Barcelona, Spain. (remote, asynchronous)
- October 31st, 2021 - How is Latin America shaping the future? A world café APF Futures Conference. Virtual event. (remote)
- October 30, 2021 Narratives & Imaginations of Situated Technologies. HASTAC Scholar. Virtual Event. (remote)
- October 9th, 2021. Refracting Visions: Methodological oscillations of Images of the Future(s) & Images of Technology (ies) - 4S 2021. Cyber Toronto, Canada (remote)
- September 26<sup>th</sup>, 2021. On the Search for Latin American Futurisms: Alternative ways to live with technologies. ISSR Graduate Students Posters. Arizona State University.

- August 9<sup>th</sup>, 2021. Sociotechnical explorations of Latin American speculations: Toward "Latin American Futures." STS Summer School. Harvard University. Cambridge, Massachusetts. The USA. (Remote)
- August 6th, 2021 "Tecnologías/Futuros Latinoamericanos" CTS Peru II. Full presentation start from 3:45:00 HERE Lima, Perú. (remote)
- July 1<sup>st</sup>, 2021 How do Images of Technology affect images of the future? A Latin American exploration. Borderland STS Lab. SFIS, ASU.
- 21 May 2021 - Where are Latin American futures? - NOSTS 2021. Copenhagen, Denmark. (remote)
- Abril 17, 2021 - Images of the Future and Latin America - STGLOBAL 2021, Washington DC, USA. (remote)
- December 2, 2020 - Thinking technologically [or images of the future, technology, and Development in Latin America]. Guest Lecture for Decolonizing Science and Technology with Dr. Fabian Prieto. Virginia Tech (remote)
- November 14, 2020, Thinking south: publics interest technologies beyond American Frameworks. ISTAS 2020 (remote)

## CHAPTER 1

### **INTRODUCTION: WALKING TOWARD THE FUTURE, BACKWARDS**

In this dissertation, I explore the possibility of “Latin American Futurism/s.” During the first two decades of this century, multiple “-futurisms” have emerged to understand the role of futuring centered on the perspectives of culture, identity, history, and/or location (such as Afrofuturism, Indigenous futurisms, Chicana/x futurism, and others). Among globally circulating futurisms, an explicit Latin American futurism is conspicuously absent. Why hasn’t yet emerged a Latin American articulation about futurity? Where are Latin American futurism/s? What may Latin American futurisms be?

As Polak (1961) proposes in the foundational Book *The Image of the Future*, the quality and relevance of local images of the future are signs of cultural development and empowerment of their people concerning incoming times:

The rise and fall of images of the future precede or accompany the rise and fall of cultures. As long as the future image of a society is positive and flourishing, the flower of culture is in full bloom. However, once the image of the future begins to decline and lose its vitality, the culture cannot survive for long. (Polak, p.19)

Polak’s work has been controversial. Although the relevance of the rise or fall of civilizations has been debunked (Morgan, 2002), the situated role of images of the future has been increasing over time. However, the role of future knowledge to influence and empower local visions of the future, personal projects, and articulate collective action and identity of images of the future has been reasserted in

organizational settings (see Berkout, 2006). Future thinking as a human capability and the articulation of "Future literacy" (Miller, 2007; 2018) as an essential skill to confront common challenges requires recognizing, and for that reason is critical to understand better what future stories matter, how those rises and decline and why diverse perspectives are needed in a world in crisis.

As a cultural or conceptual construct, the absence of Latin American Futurisms in future thinking also shows a lack of recognition of local images of the future in Latin America. I may propose two possible answers, among many reasons: Regional images of the future do not exist as it, or if these exist, those are undervalued and disregarded as Latin American.

It is clear to someone with some familiarity with the region that Latin America has been full of futures throughout its history (e.g., Comastri, 2020) and can even be associated with the same construction of the notion of Latin America, starting on the foundational times during the Bolivarian Revolution and its dream for an integrated Latin America (e.g., Montaruli, 2016), a dream that is still present on the imagination from and about the Latin American region and its people (Older, 2019; Schwarz, 2021). The evidence is sound about its presence.

However, "Latin American Futurism/s" as a concept or imagination is barely present in academic, popular, or cultural jargon. Knight (1980) is one of the first to use the term, but without problematizing it in any form, accounting of political scenarios at the time of his publication. Another trace is the 2008 conference of the Nordic Institute of Latin American Studies conference (NOLAN, 2008), which theme was "Latin American Futures." Explored some issues in Latin America without a clear connection to future knowledge in all the events. Unexpectedly, the concept is still

absent of characterization. Finding clarity between futurity and Latin America is frustrating and highly unlikely. The lack of articulation is evidence of a lack of care for the region's forward-oriented knowledge. Commonly, Latin American businesses consider that the people in the region care about "short-term" discussions, and the "long-term" perspective is usually delegated to those in the Global North. This temporal imbalance in the Western culture – which Latin America also belongs– is a straightforward consequence of euro-centric knowledge systems and a devaluation of local capabilities, which the collective of Modernity/Coloniality has clearly articulated concerning the "Coloniality of Knowledge."

In that way, this research project contributes to articulating a regional understanding and advocates for an integrative conceptualization and valuation of the previous and current works looking at the future and ways of future-making that are endemic to Latin America, its practitioners, local communities, and intellectual collaborators, that are spreading around the world. In that form, I do commit this dissertation to explore and characterize the concept of Latin American Futurism, with the same political intent that other futurisms have had in the past: Agglomerate systems of forward knowledge which are spread in different media and contexts, to make an argument about their relevance, utility, and value.

An essential digression at this point is to clarify that "Futurism" is not referring to the Italian-born Avant-Garde from a century ago, the one present in works by Bergaus (2012) or Detchon (2016), as well other authors on art and architecture history. Futurism in this research project refers to the practice and research of future thinking by different methods and disciplines, particularly the diversity of forms, mediums, and patterns of future knowledge. To avoid this common confusion – which even my informants in chapter 4 often bring up – must be acknowledged. In particular,

the rich discussion on the disambiguation page on Wikipedia for the concept of “futurism” offers a powerful distinction beyond the purpose of this research project. From here, I understand that concept is intellectually polysemic, yet I am approaching the notion of futurism as a collection, production, study, and expression of visions of the future.

This conceptualization of futurism and its overarching practitioners “futurist” – which many of their professional makers try to keep away - has been academically articulated in Anglo-Saxon academic and corporate literature and fostered by governments and organizations since the Second World War. These visions and methods are deeply influenced by images of the future in popular media, encoded in stories, movies, and illustrations mostly related to science fiction culture. Such visions were massified during the 20th century, scaffolding human imagination about technology, its role, expectations, development, and progress.

The convergent aesthetic, epistemological, and axiological elements of futurism, as centered in a global key – have been a product of a limited collection of places, people, and practices and possess reductionist approximations to the future as an object of inspiration, research, and relevance. Typical observations of these envisionings are Hollywood Sci-Fi movies, reports of the World Economic Future, Smart City policies, and “canonical” science museums that delocalize the production of future knowledge to appreciate global narratives. In that form, these convergent and hegemonic visions of the future, sometimes also as “monofutures” (Collins, 2005; Luba, 2017), correspond to powerful, recurrent, and stereotypical articulations of ideas and objects about “the future of humankind,” that diverse global and regional media reproduce as a single human imagination.

Since the 1990s, futurism/s has been pluralized by adding a regional or identarian lens in its discussion, but with uneven purpose, scope, and success. - Which is explored in Chapter 2 - With explicit revolutionary purposes, alternative or counter futurisms articulate philosophical ideas, cultural devices, and political responses to the universal and/or absolute images of the future surrounding people worldwide, nuances the determinism that future knowledge is often presented.

Mitchel and Chaudhury (2020) also argue against those monolithic visions that enclose dominant assumptions of “the West” about the World: Whiteness, Ability, Patriarchy, Euro-centric, and Christian. The massification of the internet with economic and cultural globalization expanded these stereotypical futures through international media (Mueller, 2017), creating an atmosphere in which technology, science, and the future are hard to be resisted. Alternative ways of thinking about the future have been. They are getting displaced, forgotten, undermined, and dismantled to ensure that “monofutures” are assumed as the only way possible or desirable of being.

Alternative and counter-futurisms configure a space of intellectual, social, and technical resistance. As Alondra Nelson (2002) suggests, futurisms offer alternative ways of living and being in the world in front of the current globalized and hegemonic visions of the future. Due to the centrality of technologies in the widespread visions and stories from monofutures, a common theme in the emerging alternative futurisms are other ways to be with technologies. This need makes exploring the absence of a Latin American-flavored future even more relevant.

In its political, social, and technological history, Latin America has been affected by the consequences of these “monofutures.” The coloniality of knowledge (Escobar, 2007; Mignolo, 2008) remains a crucial consequence of European colonization of The

Americas and US neo-colonialism from the Cold War, framing knowledge systems on a dependent form of Euro-centric and Anglo-Saxon knowledge production. (Sagasti, 1981; Sabato, 2011). The recognition and appreciation of Latin American ways of knowing are particularly problematic due to its mestizo heritage and remixing potential. In Latin America, many things had histories that have been obliterated. As Jorge Camacho, Mexican Futurist, and designer, said, "To think about the future, you need to think twice about the past." With this historical limitation, Latin American future knowledge and practice have been marginalized socially, epistemically, and politically as a consequence of the displacement that monofutures has to make – which is explored by some testimonials in Chapter 5 –

Many indigenous populations in The Americas – including Aymara people – embodied the future in forms that are not intuitive for Euro-centric ways of knowing. For instance, instead of pointing to the front when discussing the future, they pointed to their backs against the range of vision. This anecdotal element for me is not casual but a hint about something that the original human inhabitants of America have as different to other cultures: The future is not something we can look forward to, but

Our visual metaphors about knowledge and futures, masterfully questioned by Donna Haraway's *Situated Knowledges* (1988), are interrogated by the ancestral wisdom of Abya Yala inhabitants entrenched in confusing and mysterious forms with the understanding of current Latin American peoples. I'm unclear how those temporal embodiments merge with the futuring intuitions of Latin Americans. Still, I'm confident that we often are walking blindly toward the future, walking backward through the overwhelming voices of others, unable to appreciate our Latin American visions of the future, and falling victim to the neo-colonization of the collectives' imaginations.



As a Chilean interdisciplinary scholar, I acknowledge the presence of visions of the future in my country and region. Yet, I recognize the absence of intellectual articulation as a clear opportunity that motivates this research project. I am convinced that understanding alternative futurisms is a fundamental way to understand local relations with technology because they articulate a previously missing aspect from situated socio-technical systems: Their speculative dimension.

The work of a Science and Technology Scholar is to reject the universalism and determinism that knowledge and socio-technical systems apparently have. In that form, this dissertation aligns with the contested tradition of knowledge producers in my field, oscillating symmetrically human and non-human actors to create new ways to understand our knowledge in action. The lack of understanding about Latin American future knowledge, practice, and objects are my objects of interrogation.

This research project aims to identify and characterize Latin American ways of futuring. I intend to trace critical elements that allow the articulation of Latin American futurisms based on their manifestations as local visions of the future, their relations with technologies, and the professional communities of future-making in/from the region. In that way, this project is designed through the assemblage of three studies:}

- i) the interactions between technology and the future in recent cases of Latin American emerging technologies.
- ii) the characterization of local ways-of-futuring based on interviews with Latin American future practitioners;
- iii) the description of Latin American Futurism in conversation with other alternative futurisms, based on technological objects – sociotechnically understood – to exemplify some common and distinctive characteristics

between Latin American futurism/s and other alternatives to monofutures.

### **Research Design**

My doctoral thesis aims to answer the central question: Where are Latin American futurisms? So, it is essential to consider what makes a Latin American image of the future. What strategies allow us to identify them among the multiplicity of future visions and sociotechnical speculations? In addition, think about the mechanisms that create, maintain, resist, and suppress images of the future in the region.

My research question is **Which socio-technical dimensions characterize “Latin American” visions of the future in the context of diversification and territorialization of Global futurisms?**

I operationalize this question with three sub-questions:

- Which strategies situate future-centered objects as “Latin American” compared to other alternative futurisms?
- What elements characterize the images of the future in everyday media conversations about emerging technologies in the region?
- What mechanisms are used by practitioners and experts to produce and circulate local ways of future-making?

The figure below summarizes the role and contributions of each piece.

<b>Piece 1: Artifacts of Latin American Futurisms</b>	Which strategies situate future-centered objects as “Latin American” compared to other alternative futurisms?	Dissection of 5-6 cultural artifacts, that allows to exemplify characteristics from Latin American futurisms.
<b>Piece 2: Local visions of technological futures</b>	What elements characterize the images of the future in everyday media conversations about emerging technologies in the region?	Documental Analysis of reports, fiction pieces, and noteworthy newspapers notes (2019-2021) with focus on overlap vision of technology/visions of futures.
<b>Piece 3: Ways of futuring in Latin America</b>	What mechanisms are used by practitioners and experts to produce and circulate local ways of future-making?	Interview to Futurist, designers, decisión-makers and selected subjects. Expected 50 interviews from all region. Content análisis of grounded theory using MaxQDA

*Figure 1. Visual Summary of the dissertation structure (source: own elaboration)*

My main objective is to identify and characterize Latin American futurism/s and their relationships with technologies. As specific goals

1. Identify actors and products-making futures in Latin America, with emphasis on professional associations, communities of practices, and organizational changemakers.
2. Collect artifacts, resources, and materials that convey visions of the future from Latin America, emphasizing technological futures.
3. Describe local relations between “images of the future” and “images of technology(ies)” and their effects on public discourses about the future in the region.

4. Articulate the relevance of regional futures/futurisms based on the testimony of local practitioners and experts to understand their role in anticipatory governance, socio-technical engagement, and designs for the future.
5. Analyze a current example(s) of Latin American Futurism and its relation to socio-technical systems.
6. Propose how objects perform “Latin American Future Visions” and integrate a definition of Latin American Futurism

The research design of the dissertation is detailed in each piece because each of these three questions is explored differently, which I detailed below their scope and methodologies.

### **Relevance of this project**

The relevance of this project is threefold: First, trace some borders to identify the phenomenon of Latin American futurisms, looking for events, experiences, and examples around the region in the last three years (2019-2022); Second, bolster the local traditions of future-making, that include yet are not restricted, to the local traditions of future studies, science fiction, and technological governance. Third, unpack regional relations with technological systems to explain their relevance within situated speculative knowledge in the pursuit of better conditions of life in Latin America.

First, the characterization of Latin American Futurisms has academic and political dimensions. Making the *boundary work* around Latin American futurism is an intellectual exercise that will facilitate the recognition and participation of regional future-makers in their regional traditions of knowledge. Acknowledging that most ways

of future-making have a strong bias toward euro-centric knowledge, turning the concept into a meaningful category will facilitate conversations in the region scattered in different research communities. The political consequence of the re-articulation and re-cognition of works from Latin America as exemplars of a regional experience of futurity. The intended results of this project will articulate a collection of pieces to observe and discuss local ways of future-making.

Second, this research project facilitates a series of personal interactions that haven't happened until now. Several future-makers co-exist in the same countries or cities, ignoring their contributions and works. That intellectual isolation is strengthened by the varieties of expressions and ways of legitimation that differ between them. A systematic study of these works with a symmetrical perspective encourages dialogues beyond organizational and epistemic boundaries that current social arrangements facilitate.

A research anecdote, an awarded science fiction writer from Mexico worked in the same institution with an outstanding academic program for future studies. For the interaction produced by my research, the director of the program and the author met, producing synergies that didn't happen between their thriving communities before. We know from some interpretations of Heisenberg's uncertainty principle that we affect the world when we directly measure it. All research projects are intervention projects.

Third, as indicated in the research problem, the relations between the future and technology are deeply interconnected in reflecting futurism. The semiotic-material relations that emerge from speculative practices are situated as their socio-technical systems, and meanwhile, Latin American futurisms remain disarticulated; there are technological methods that are harder to explore. As a Science and Technology scholar

to me, this project offers an opportunity to connect technological traditions with future ways of knowing that are given for granted. In that form, this study extends the traditions that Alondra Nelson, Laura Forlano, and Jussi Parikka, among others, have established around technology studies and futures making in the past.

### **Intellectual Merit of the Dissertation**

Overall, this dissertation contributes to re-value and re-cognize methodological and intellectual contributions of Latin American ideas about the future. In that way, the dissertation elements engage in conversations about analyzing images of the future in media, the trajectories and genealogies of future-making in the region, and the situated relations between technology and futures based on a region that lacks a systematic study until now.

In addition, this dissertation offers methodological strategies to engage with technological imaginations on a scale that the sociology of expectations and socio-technical imaginaries haven't done. Images of the future, as dynamic as they are, evolve quickly and move faster. Looking at the techniques and knowledge for professional future-makers allows a multiscale study of speculative knowledge in Latin America, which is usually underappreciated because it seems overlapping and dislocated.

In that way, this dissertation contributes to articulating the notion of Latin American Futurism/s, the multiplicity of future visions collectively existing in the region, and its implications for the technological realities that are lived and being made in Latin America.

## **Ethical considerations**

The ethical considerations of the dissertation are made on the relations produced with the informants. Formal and informal communications have occurred since 2020 with different stakeholders related to institutional, creative, and academic expressions of futures, which allowed me to articulate this project. For the same reason, the identity of interviewees and data is being protected by a protocol approved by the ASU Institutional Board Review due to the sensibility and trust that some of these conversations have. (see Appendix A)

This project also has limitations in the ways that it is structured. Latin American Futurism/s cannot contain all social expressions of the future that are being made within the region. Therefore, academic or political proposals of new worlds made by politicians, social organizations, non-future scholars, and local communities aren't included unless they're directly connected or supported by some professional future-maker in the studied epistemic communities.

In addition, it was challenging to engage with people in Central America and The Caribbean because of the lack of articulation with other regional networks. Despite finding and contacting practitioners in the Bahamas, Trinidad and Tobago, Jamaica, Guyana, Cuba, Puerto Rico, El Salvador, Honduras, Guatemala, Panama, and especially Costa Rica, I was unable to make an official conversation or exchange, lacking more detail from the experiences and testimonies from their practices.

One condition that also is important is the context of production of this research project: The COVID-19 pandemic. This meant that a significant part of this research project was held remotely, connecting and using digital methods to gather data. At the end of the data gathering, in June 2022, I visited Mexico City, Sao Paulo, Rio de

Janeiro, and Santiago de Chile to participate with local practitioners and observe the material conditions of production in their work. These conversations enriched the relations with informants and provided some examples for the third piece.

Finally, this is not a historical project, and in that form, the genealogies included are limited to the information found digitally and the one indicated by the research informants. The temporalities of the future in Latin America are not constrained to Latin American Futurism/s, and more research is needed to articulate a chronology of future thinking in the region.

### **Intended Impacts**

The articulation of “Latin American Futurism/s” that offers this research project has academic and non-academic broader impacts that are summarized below:

- For STS scholars: A framework to engage with Latin American traditions of future-thinking and its deep relation with the emancipatory origins of Latin American STS. In addition, it introduces distinctions in scales and rhythms within the speculative dimensions of socio-technical systems. (Chapter 4)
- For future studies, scholars, and practitioners: Articulates commonalities around Latin American future-making practices, allowing internal conversations between regional experts and their dialogue with other global futurism practitioners. (Chapter 5)
- In Science Fiction: Appreciate the local contributions from Latin American speculative fiction in the literature. (Chapters 3 and 5)
- In popular media: Offer a compelling concept to engage with local expression of future knowledge, making future-making experiences and its communities within the region visible.



- In regional identity: It questions our relationship with future thinking, particularly the challenges that "monofutures" extend to the Latin American condition. In that way, the regional expression of future-making is an effective strategy to counter the everyday effects of anti-futures (images of the future that are unsituated images of the present, offered as desirable futures for transnational stakeholders).

## CHAPTER 2

### **WHAT ARE LATIN AMERICAN FUTURISM/S? A PROPOSAL**

It matters who and how imagines futures. We, humans, have an incredible capacity to imagine things, stories, worlds... Imagination plays a central role in configuring our realities, particularly in the material, semiotic and speculative construction of the future. (Moore and Milkoret, 2020; Ca Imagination's limitless and generative power imagination can transform people (Wheelwright, 2005, Quintana, 2021); and communities. (De Smedt, Borch, and Fuller, 2013; Hamstead et al., 2021).

However, future imaginations have been, intentionally or unintentionally, used as mechanisms of domination, control, and inequality reproduction for a long time, when imagination is constrained or disciplined, and the future is singled as a prediction. In 1993, Sardar (1993) reported that "[T]he unconscious goals underlying the formulation of futures studies is to shape the future of all cultures in the images and desires of the West" (p,185). Future-making efforts are successful just when the participants' expectation of the futuring is achieved. Robert Jungk (1969), studying imagination and the future, asked, "Shall we, in the name of the future, wage a kind of preventive war against the future to convert it into a vassal of today?".

Futures are diverse and plural, not just axiologically but epistemically. Since the early 20<sup>th</sup> century, with the articulation of academic and creative fields centered around future imaginations, such as science fiction, foresight, and speculative design. From them, we have appreciated its critical and inspirational aspects and the absence and constraints of assumptions and ideas that we can call futurism, the field of study.

Although initially, the word “futurism” was used to characterize an Italian-born Avant-Garde from Milan in 1909, the term has branched and diverged with the century. In that form, I refer to futurism as the situated set of practice and research around the processes of future-making and thinking. Making futures is a diverse epistemic endeavor, like any other intellectual project. This condition is essential for scientific pluralism (Ludwig and Ruphi, 2021), with multiple methods and disciplines that are valid and relevant in a different context to make sense of the future worlds, which currently include the ones mentioned above.

Futurism does not limit its diversity to a broad range of images and methods to describe possible, probable, and desirables ways in which we can change our world (Voros, 2003; Escobar, 2018; Gall, Vallet, and Yannou, 2022). They must also engage with the multiple temporalities differently through our culture (Iparraguirre, 2016). Temporal diversity or chrono diversity is described by Geißler (2002) as an underappreciated dimension of human experience that scholars have not given attention to. Chrono diversity acknowledges the cultural differences of time in human and non-human lives, such as its perception, measurement, use, and scale.

The *avant-garde* futurism – the one that is not the focus of this work but allows me a tremendous temporal example – advocated for an accelerated and violent alliance with the industrial machine to achieve human improvement and efficiency. They called for new rhythms in the human that just the machines seemed to have. Perhaps, those temporal desires are way too real for the ones living a century after them, surrounded by unimaginable machines for them. People thinking about the future often need to scope the ranges and rhythms of their imaginations, tuning in their codes the pace at which imaginations may run.

Futurisms are diverse, yet this is something that academic communities have increasingly acknowledged since the 1990s. Despite long denounced, recognizing the oppressive capacities of future imagination can have in individuals and communities, the awareness of material injustices, the shortcomings in representation, and the limitations on the anticipation capacity for those absent in visions of the future and future-making processes are concrete. Our conceptions of progress (Marx, 1987), development (Poli, 2015), modernity (Latour, 1993; Appadurai, 2013), and even technology (Konrad et al., 2017) were entrenched with limited assumptions about studying the future during the 20th Century.

The relevance of understanding a plethora of futurisms has started already. Besides the obvious intellectual exercise to acknowledge temporal, epistemic, and normative variance around futuring as a process in different contexts of knowledge production, studying diverse futurisms offers an exceptional opportunity for human recognition, self-determination, and justice. The different communities reclaiming and re-cognizing their ways of futuring, a particular practice of knowledge-making centered in our relationships with things and time, appreciate neglected anticipatory and speculative traditions and remixed with local learnings underappreciated imaginations from the past and present new alternatives to possible worlds.

In this chapter, I explore "Latin American Futurism/s" as the futuring that emerged from Latin America. Based on the critical study of the academic literature, I argue that a series of characteristics allows the identification and appreciation of futuring practices from Latin America. Latin America, a geo-political region that emerged more than 500 years ago from European colonization, has a fascinating and

contradictory relationship with the future. I will show that the piece has been waiting to articulate its future-making traditions formally.

It is fundamental to articulate the diversity of ideas that drives me to give attention to this question. The first section summarizes the turn from universal to particular futuring, identifying key moments in formalizing future thinking and futurisms as a matter of study —with an overview of Global Futurisms, or the collection of categories that differentiate from a hegemonic and single global future. In the 20th century, channeling future thinking to a hegemonic set of actors and alternatives was fundamental to making the interconnected and globalized world that we live in today. Yet, these global futurisms advocate bringing attention to diverse populations and ways of living that reveal these images of the future. Considering that futurisms are also linked with progress, development, and technology, the absence of Latin America in section one is discussed in the second section, in which I contextualize the need for Latin American Futurism.

### **From Universal to Situating Futuring.**

For a long time, humans approached futuring as an esoteric matter (Ralphs, 2013), not just for the difficulty of articulating evidence about the future but also for its open nature: Futures are being made simultaneously for the multiple actions and inactions of humans and humans. (Aradau and van Munster, 2011) We don't know if a volcano will erupt and destroy our town, yet we can learn from the past and anticipate it as an option in our future.

The exercise of future-making became professionalized with the scientific revolutions. The creation of scientific and social models to predict the behaviors of the world – things and people, equally - was a central matter of the scientific revolution and illustration. (Shapin and Schaffer, 1985; Marchant, 2015) With the industrial revolutions, the rate of technological change during the 19th Century transformed how we approach our realities and sophisticated fields to capture and analyze evidence, such as thermodynamics, to understand movement and heat (Mussardo and Merlone, 2010) and statistics to find trends in public health and labor allowed a more quantitative and precise modeling of reality (McDonald, 2001; Leibi, 1960). The ideology of scientificism articulated a systematic – yet not systemic – perspective about research and the study of futures spliced between linear modeling and expert envisioning. (See Huxley, 1936; Hughes, 2008; Warde and Sörlin, 2015) With the rise of technical knowledge, those who could predict the future were from fortune-tellers to engineers and politicians.

Strong technoscientific promises materialized in the early 20th Century to form our technological imagination. Popularized by both World Fairs, events recorded by early film cameras and visited thanks to the aeronautics and tourism innovation that allowed transnational flights (Molella and Knowles, 2019; Shulruff and Wyman, 2023), and extrapolated by the emerging genre of Science Fiction literature, which thanks to editorial innovations and visual narratives (Roberts, 2006) were able to spread visions of the future to positive, automatic, bright and universal.

However, with the end of the Second World War, imaginations were damaged, too. The new Foresight and Strategic Planning field faces a world with a more negative prospectus. (Seefired, 2014) Nuclear fears and social calamity – a product of violent

decolonization processes and environmental injustices – challenged bright universal and privileged images of the future. The integration of predictive models, organizational strategy, and envision exercises articulate modern foresight in Europe and the US. (Miles, 2010) This field, inheriting the assumptions of previous times, innovates methods to envision and design futures without too much attention to those left outside the future.

Sardar (1993) denounced in the 1990s how white, Anglo-Saxon, Christian, and rich people hold the field of future studies, offering little attention to issues in the global south. These academic and professional communities of authors, scholars, designers, and engineers reproduced the technoscientific biases about knowledge production. They maintained, until recently, intellectual dynamics that privilege Eurocentric knowledge, the legacy of the violence of colonialism, and enacting the divides that the Cold War established among the world's nations. This case is one of the first steps toward decolonizing futures (see Valentine and Hassoun, 2019; Dutta, 2020).

The validity of future knowledge in the early 1990s was given not to the diversity of perspectives or robustness of methods but rather to the alignment that those with the power felt to enforce their desired futures. This crystalized enduring narratives that are hegemonic until today, creating new ways of world epistemic, political, and material violence. This hegemonic narrative is sometimes called “monofuture” (Collins, 2005; Luba, 2017; Reina Rozo, 2023), and If future studies and science fiction has been underappreciated for their matter of concern, it’s not surprising that contributions from people of color in the West and beyond have been systemically neglected, disregarded, and forgotten until the 1990s. Grunwald (2018)

even suggests a techno-deterministic expansion of futures for those images of the future that restrict modern and emerging technologies as the only valuable and relevant driver for change in the world.

However, three decades ago, Mark Dery coined the notion of Afrofuturism to characterize the works that African American speculative authors have produced in the US (Dery, 1994) as an emancipatory alternative of futuring that has been taking relevance as a “counter future.” This concept brought attention to alternative futuring that have been neglected until “African American voices have other stories to tell about culture, technology, and things to come. If there is an Afrofuturism, it must be sought in unlikely places, constellated from far-flung points.” Cautiously, Dery opened a reading of past and future work with a new lens, linking previous literary and creative works made for African Americans in previous years with a need for recognition.

Yet, the black diaspora experience is one of many that has been reasserted for these futurisms. This kind of futurism isn't just an expression of creativity or idealism but also a way of worldbuilding that has been ignored until then. Afrofuturism placed black people in space, science, and technology, which was exceptional by a large majority economically constrained and socially. It centers on black communities in the US. If the present weren't a place to be free, the future would be where Black emancipation would be fulfilled. Later events moved Afrofuturism from a collective aesthetic to a philosophical guide for social movements, such BLM Protest in May 2020 (Drew and Wortham, 2021)

It is considering how since the early 2000s, science and technology scholars have engaged in this conversation of diverse and multiple futurities. Nelson and Miller,



cited by Yaksek in 2006, claim that the role of Afrofuturist scholars is “explore futurist themes in black cultural production and how technological innovation is changing the face of black art and culture” This implies how articulating “the future” refers to a proxy for situated technological cultures (Nelson, 2002). For this reason, alternative futurisms to the hegemonic “monofuture” are relevant beyond the emancipatory potential of imagination and include the transformative appreciation of diverse technological cultures that co-exist in our world. (Hui, 2020)

Through the model of Afrofuturism, other non-Black scholars and creators got inspired to create what is sometimes described as “ethnic futurisms,” mobilizing cultural aesthetics into the future. As Nwosimiri (2021) argues, these tense constructs categories that don’t align with other cultural concepts. It centers the experience on whiteness and not on the diversity of people worldwide. Reducing alternative futures is not just a biological reductionism that contradicts the liberatory inspirations in art, technology, and culture-bound under these labels. In that tone, Alternative futurisms have also been labeled called “counter-futurisms” by authors such as Parikka (2017), who, in his study of Arab and Gulf Futurisms, describes the capacities of people, things, and places to resist and emancipate from “monofutures” through future imagination, inventiveness, and radical innovation. These alternative futurisms need to be appreciated for what they bring: a renewed space for the imaginations of the marginalized during the history of future-making. The certainty that the future is for everyone because it includes everything, everywhere, all at once.

In 2023, when the UNESCO Future Literacy network is promoting the intrinsic anticipatory capacities of humans (Miller, 2018), the evolution of scientific and technological revolution increase not just the capacities to capture, predict and analyze

evidence but also that future knowledge relies upon diverse methodologies which democratize its practice. With the increasing demand for anticipatory capacities, the request to make the future relevant for people of all kinds gets and the increasing complexity of navigating possibilities and alternatives under restricted imaginations. Alternative global futurisms co-exist and sometimes overlap.

From here, the work of researchers, activists, and creators has increasingly engaged with the questions between technology and the future based on fiction, scenarios, and speculative experiences. Table 1 summarizes common characteristics of alternative futurisms or counter futurisms. These futurisms are listed below concerning their coinage. Then a brief list of common elements is mentioned based on the selected literature in the last column. In addition, some selected cultural examples, pointed or analyzed in the selected literature, are listed as a reference for manifesting that futurism in different media. A key observation is the centrality of science fiction as a medium to envision the future, appearing in most of these futurisms and bridging cultural and technological studies in their analysis.

Table 1: Categories of Alternative and Counterfuturisms. (Source: own elaboration)

Name	Summary of key elements	Some Relevant Exemplars	Selected References
Afrofuturisms (Dery, 1993)	<ul style="list-style-type: none"> <li>- Centers the future around the African diasporic identity and experience</li> <li>- Connects African American productions, linked by the Atlantic trauma of slavery and exploitation since 1619</li> <li>- Music and sound have a prominent place as modality and rhythmicity.</li> <li>- Common topics are intersectional identities, anti-racism, alienation, technical creation, and black imagination.</li> <li>- Identities redefine techno culture. Quantum, Digital, and Space technologies are common articulators</li> </ul>	<ul style="list-style-type: none"> <li>The Invisible Man – Ralph Ellison (1897)</li> <li>Parable of the Sower – Octavia Butler (1993)</li> <li>The fifth season – N.K. Jemisin (2015)</li> <li>Space is the place – Sun Ra &amp; Dir. John Coney (1974)</li> <li>Black is King – Beyonce (2020)</li> <li>Dirty Computer [Emotion Picture] – Janelle Monae (2018)</li> <li>Black Panther – Dir. Ryan Cogler (2018)</li> </ul>	<ul style="list-style-type: none"> <li>Yaszek (2006),</li> <li>Womack (2013), van Veen (2013),</li> <li>Nelson (2002),</li> <li>Bennet (2016);</li> <li>Brock (2020)</li> </ul>
Indigenous Futurisms (Dillon, 2003)	<ul style="list-style-type: none"> <li>- Anti-coloniality is a principle of this creation, to create better futures for indigenous peoples.</li> <li>- Plural and diverse, despite previous Britain colonies having prominently defined it.</li> <li>- Ancestral technologies and biodiversity, and first encounters are common topics.</li> <li>- Challenge what it means to advance technology, as well as the commercial circulations of commodities, and critique the digital divide</li> <li>- Narratives are connected to the traditional temporalities of those peoples. Rejects Western linearities.</li> </ul>	<ul style="list-style-type: none"> <li>Thunderbird Strike – Elizabeth LaPensee (2017)</li> <li>Hopi Princess Leia – Ryan Singer (2009)</li> <li>Transcending past/present/futures – Institute of Indian American Arts (2020)</li> <li>The 6th World – Futurestates (2012)</li> <li>Elatsoe – Darcy Little Badger (2020)</li> <li><i>Because Once You Enter My House, It Becomes Our House</i> – Jeffrey Gibson (2020)</li> </ul>	<ul style="list-style-type: none"> <li>Gartner (2015);</li> <li>Matters (2019),</li> <li>Fricke (2019); Poll (2020);</li> <li>Clark (2021)</li> </ul>
Sinofuturisms (Goodman, 2003)	<ul style="list-style-type: none"> <li>- Circulates around the People’s Republic of China and its futures</li> </ul>	<ul style="list-style-type: none"> <li>The Three-Body Problem – Liu Cixin (2014)</li> </ul>	<ul style="list-style-type: none"> <li>De la Seta (2020),</li> <li>Huang</li> </ul>

	<ul style="list-style-type: none"> <li>- Cybernetics, Automated technologies, and artificial intelligence are central elements in these visions</li> <li>- Divert China's geopolitical speculations to weaponize Western and Orientalist imaginations about China</li> <li>- It centers Chinese talents and economic productivity as an asset for disruptive short-term futures (around the 21<sup>st</sup> Century)</li> </ul>	<p>Sinofuturism 中华未来主义 (1839 - 2046 AD) – Lek (2016)</p> <p>The Waste Tide – Chen Qiufan (2013)</p> <p><i>Uterus Man</i> – Lu Yang (2013)</p>	<p>(2020), Conn and De la Seta (2021), Zhang (2021)</p>
<p>Chicana futurisms (Ramirez, 2004)</p>	<ul style="list-style-type: none"> <li>- Identities and experiences of Mexican American and US Latinx migrants are at its center.</li> <li>- Borderlands are a key location in their geography, movement, and emotions.</li> <li>- Evoke mestizaje of Latinx Culture and highlights female roles such as motherhood.</li> <li>- Common topics include death, indigenismos, coloniality, bilingualism, and survival</li> </ul>	<p>Acto Los Vendidos – Teatro Campesino (1967)</p> <p>Circuit board art – Marion C. Martinez (2003-10)</p> <p>How to Tame a wild tongue – Gloria Anzaldua (1987)</p> <p>Sleep Dealer – Alex Rivera (2008)</p> <p>High Aztech – Ernest Hogan (1992)</p>	<p>Ramirez (2004; 2008)</p> <p>Merla-Watson (2019); Goodwin (2021); Agloro (2019)</p>
<p>Gulf Futurisms (Al-Maria, 2008)</p>	<ul style="list-style-type: none"> <li>- Inscribe its images to the Persian Gulf, combining Islamic eschatology, corporate ideology, and posthumanism.</li> <li>- Contrast between the isolated geographies and monumental infrastructures.</li> <li>- Draws from national and royal projects, assuming parallelism with Italian Futurisms</li> </ul>	<p>Museum of Tomorrow – Dubai (2022)</p> <p>Arabic Alien – Meshal AlJaser (2019)</p>	<p>Al-Maria (2008); Smith (2013); Al-Saidi and Zaidan, (2020); Jurado (2020) Ali (2020)</p>
<p>Arab Futurisms (Majali, 2015)</p>	<ul style="list-style-type: none"> <li>- Arab identities are a place of hope and innovation, subverting contemporary political expectations</li> <li>- Break with cultural nostalgia of the region to</li> </ul>	<p>The Core – Mohammad Awwad (2018)</p> <p>A Whale is A Whale is a Whale – Sophia Al-Maria (2014)</p>	<p>Parikka (2018); Jurado (2021); El Shakry (2021);</p>

	<p>deterritorialize the place of Arabs beyond the desert and the past.</p> <ul style="list-style-type: none"> <li>- Aesthetics combine traditional desertic geographies with intense biological activity, juxtaposing settings that reject desolation.</li> </ul>	<p>2026 - Maha Maamoun (2010) A Space Exodus - Larissa Sansour (2009)</p>	<p>Muller (2022)</p>
<p>African futurisms / Afro jujuism (Okorafor, 2019)</p>	<ul style="list-style-type: none"> <li>- Decenters the West perspective, offering an alternative philosophy of science about the world</li> <li>. Centers on the production and experience of the African continent</li> <li>- Ways of living, learning, drawing from the past, and imagined on the future</li> <li>- African experience is framed from Pan-Africanism, grounded on the continent after decolonization, and connecting with their ancestry as viewed in the present</li> </ul>	<p>Who fears death - Okorafor (2010) Pet - Akwaeke Emezi (2019) The rape of Shavi - Buchi Emecheta (1983) Afronauts - Dir. Frances Bodomo (2014)</p>	<p>Okorafor (2019), Wolfe (2021), Talabi (2020), Clark (2019), Steingo (2017), Bryce (2019)</p>
<p>Rural Futurisms (Ferrara and Pisano, 2019)</p>	<ul style="list-style-type: none"> <li>- It confronts the binary visions of rurality that are grounded in obsolete urban imaginations about the countryside</li> <li>- Manifestations appear in different locations: Italy, France, Sweden, and the US, deterritorializing rural futurisms</li> <li>- Understand the centrality of rural life for human existence and sustenance, and vindicate their ways of living</li> </ul>	<p>"Ferme de la Mhotte" A sound walk - Liminaria (2018) "Manifesto of Rural Futurism" - Philip Samartzis (2019) Tales from the Loop - Simon Stålenhag (2017)</p>	<p>Williams (2017); Spanier (2021); Mahdian (2021)</p>
<p>Desi futurisms / Indofuturisms (D'Souza, 2019)</p>	<ul style="list-style-type: none"> <li>- Actively confronts the political struggle and communal violence of colonialism</li> <li>- It blends technology and nature, including strategies such as biomimicry and symbiosis</li> </ul>	<p>Apsara Engine - Bishakh Som (2020) Mangroves of Alien and Native froze and foamed, rose and rose, opened and closed, and one in all grew calm who knew</p>	<p>D'Souza (2019); Mitchell and Chaudhry (2020); Bankodar (2021)</p>

	<ul style="list-style-type: none"> <li>- Divinity is relevant, with multiple forms taken</li> <li>- Aesthetics shares a dreamy and poetic atmosphere.</li> </ul>	<ul style="list-style-type: none"> <li>- Rina Banejee (2014) The Next People - Salman Rushdie (2012) The trouble with Humpadori - Vihdu Agrawal (2016) Love Overgrown - Raveena Aurora (2022)</li> </ul>	
Polynesian/Pacific Futurisms (Hansel, 2019)	<ul style="list-style-type: none"> <li>- Rejects the epistemic separation between Polynesia and the modern world.</li> <li>- Aims to create capacity to save Polynesians themselves, especially from climate change and pollution</li> <li>- Interconnects tradition with a forward-thinking perspective to overcome colonization's legacies</li> <li>- The sea is the central place of action, defying conceptions about the future that depends on human living over land.</li> </ul>	<ul style="list-style-type: none"> <li>Maorifuturism: the digital, the speculative and the future - Jessica Young (2017) Thor and his magic tapu - Daniel Taipua (2017) Digital Marae - Lisa Reihana (2009) Umurangi Generation - Origame Digital (2020)</li> </ul>	Loui (n/d); Hansel (2019); Perez (2020)
Eastern futurism (Gerhart, 2020)	<ul style="list-style-type: none"> <li>- Revive the pre-socialist values of the zone to speculate about post-socialist and post-colonialism</li> <li>- Temporalities are characterized by "polychronisms," a way in which times are simultaneous and parallel.</li> <li>- The intersection between pastoral life, absurdity, and political geography constitutes an element to draw East European experience to better futures</li> <li>- Aesthetics are "non-referential, non-essentialist, and global."</li> </ul>	<ul style="list-style-type: none"> <li>In Futurum - Erwin Schulhoff (1919) A day in a life - Ruth Jenrbekova (2015) Yiddish Cosmos - Maria Veitz (2019)</li> </ul>	Miklósvölgyi Nemes (2017); KAJET: Journal N°5 (2022)

Tropical Futurisms (Quicho, 2022)	<ul style="list-style-type: none"> <li>- It decenters humans from the future. Has a transnational and geographical perspective</li> <li>- From a time of climate change, aims for new relationships with the Earth, considering that a warmer world will become a tropical world</li> <li>- Common geography places specific technological styles that question assumptions about development and ways of living around the tropics</li> </ul>	Tropical Futures Institute - Chris Fussner Lumapit Sa Akin, Paraiso - Stephanie Comilang (2016) A Amazonia misteriosa - Gastao Cruis (1925) Amazofuturism - Joao Queiroz (2019) Neurotropical - Mark Redito (2020)	Quicho (2022); Tropical Futures Institute
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As a conceptual construct, futurisms offer a place for imaginations that have been neglected, aborted, resisted, and forgotten. As Muller (2022) states in her dissertation, “[F]uturity is as much defined by a politics of the time, as it is by a politics of space. (p. 235). Initially inspired by speculative fiction literature, the construction of futurism goes beyond cultural aesthetics and works as a mechanism to interpret the political relationships between humans and technologies in different places and times. Based on the listed characteristics found under this label, the role of technologies – not just modern or digital, but any technology – is interrogated in its politics and displayed with multimodal strategies. Lek (2016) observed that futurisms are “minority movements which share an optimism about speed, velocity and the future as a means to subvert the institutions of the present.” In summary, these futurisms are a speculative exercise to question socio-technical politics.

In addition, the exemplars play a pivotal role in grounding these ideas on different mediums. As there is an association between music and Afrofuturism from the works of Sun Ra and Janelle Monae, other futurisms extend and subverts video,

performance, websites, and poetry. The mediums to speculate about the future, often centered on novels and cinema, are expanded by preferred modes of communication that suit the creators interested in these relationships.

From this exercise, we can observe that some groups and regions also overlap, with the last two futurisms in this list – rural and tropical futurism – which displace the attention from people to places, connecting their ways of living around the world to vindicate not global, but shared imaginations. Quicho (2022) mentions an event from the Tropical Futurisms Institute, where they explain some of their motivations “It is good to talk about the tropics since we’re all from the tropics. Rather than wait for some cultural institution from the ‘center’ to harvest from the periphery again [or] be a footnote in someone else’s historical narrative.” Futurisms recenter our attention about the dimensions to which we attribute the potential of futurity, and those are intersectional as the humans than imagine them.

In synthesis, in this section, I explored how we moved from universal to situated futures: universal “monofuture,” which charms with visions of the future from dominant and colonial perspectives, peoples from all over the world with royal, imperial, and corporative imaginations. The power of universal and hegemonic future images has been systematized with scientific methodologies and linked with progressive and disruptive technologies to be transmitted over time. However, the emerging collection of alternative and counter-futurisms includes multiple voices, places, and perspectives left out of our futures during modernity. Furthermore, alternative futurisms encode technological cultures within them and are a proxy for understanding the technological relations around that community and preserving cultural manifestations in our present and future.



The following section offers a proposal to explore a missing futurism of this section: Latin American Futurism, an understudied paradigm that I do propose in this piece some significant characteristics.

### **A Case for Latin American Futurism/s.**

Speculative thinking and creation in Latin America are not new, yet its research has been scarce and fragmented. Rachel Haywood Ferreira has been one of the most prominent Latin American Science Fiction authors, elaborating studies about the literary genre. She describes that "earliest works of Latin-American science fiction have often been victims of misplacing, mislabeling, and misrepresentation." (Haywood Ferreira, 2008, p.354). In science fiction, it's fascinating that despite authors and collectives engaged in the cultural production of this genre, the research until the last decade has been framed and dominated by US and Spain literature scholars that have traced the regional production.

The interdisciplinary nature of future-making has been a barrier to a collective account of the ways of futuring in the region. However, some fascinating genealogies and anthologies help us identify at least two centuries of future making in literature, arts, and academia. The same Haywood Ferreira (2008) has identified precursors of the genre as its antecedents in the 20th century many popular magazines, where fiction and techno-scientific knowledge were at the center of their contents. These include *Revista Mas Alla* (1953-1957, Argentina), *Nueva Dimension* (1968-1983), *Géminis* (1965, Argentina), *Crononauta* (1964, Mexico) in México, the *Magazine de Ficção Científica* (1970-1971, Brazil) in Brazil, and *Espacio-tiempo* (1965, Chile). Haywood Ferrera assessed these magazines, indicating the lack of originality of most

histories for local authors. "Strangely enough, however, a fair number of the Latin American stories in *Más Allá* that focus most clearly on space travel are among the least original, and Latin America is notably absent from their pages." (p.213) When the future started to be seen as a weighty object of study, the Latin American region engaged with the images of the future that aligned with monofutures, following the period's trends.

Nevertheless, speculative fiction and futuring in the region has also some political precursors. In the government of Juan Domingo Peron, he offers the people interested in new technologies to share with the president their innovations. As the historian Hernan Comastri (2020) studied, these Letters to Peron were an invitation to popular technological imaginations and a radical driver to shape technologies from the south. In parallel, global visions of the future negated projects like this one. Haywood Ferreira (2008) describes how many literature and media scholars characterized regional fiction in the mid-20th Century:

It would not be difficult to draw some skewed conclusions from an examination of a good number of these works: that science fiction is a purely space-age genre in Latin America, that it is always highly derivative of Anglo-American science fiction, that there are few, if any early examples of science fiction written there. (Haywood Ferreira, p.353)

The apparent lack of imaginations in the region is a consequence of colonial and dependent relations of knowledge and technology. Sagasti (1981, p.7-10) argues that Latin American thinking on science, technology, and development (PLACTED) was reductionist and simplistic. This school of thought dedicated to

envisioning material and human development in the region and articulated around the Economic Commission for Latin American and the Caribbean (ECLAC, In Spanish CEPAL) was the point of convergence of many intellectuals' concern about the social dimensions of science and technology in the region, including Amilcar Herrera (2015 [1972]), Jorge Sabato (2011[1975]) and in lesser degree Oscar Vasvsasky (1972) and Osvaldo Sunkel (1971), who made critical contributions to the technological understanding of the region, but also perpetuated the narrative of technical, cultural and political delay.

This group, a pioneer of Science and Technology Studies in the region, had a perspective of futurity that rejected the visions from the monofuture and reclaimed the need for regional and local alliances to achieve a distinctive and clear technological style. However, they constantly claimed the structural lag and backwardness in the region as crucial factors of technical and political dependency, reproducing the Western imaginations about Latin America in the development of science and technology.

The emergence of future studies is also connected to the ECLAC, which development strategies require elaborating prospective and foresight capabilities. (Medina Vasquez, Becerra and Castaño, 2014) This community grows with the influences of the French school of prospective (Godet, 1986). These epistemic barriers are central to explaining the lack of alignment and coherence among decision-makers, prospectivists, fiction writers, and other artists and activists for much of the 20th century in the region. The future was backbreaking work, and people involved in business and politics had a better chance to discuss alternative futures from and about the region.

At the beginning of the 21st Century appeared a new generation of creators emulating the global forms of futurity. In this way, the discourse and imaginations of the future in Latin America appeared global, homogeneous, and modern. The region could be part of the future, only a few years behind. Local projects were marginalized, as was the production of fiction that had to find other channels and labels other than future, science fiction, or futurism, consolidating a denaturalization of the regional epistemologies of future projects, both in strategic prospective and in artistic creation, both marginalized for not aligning themselves with academic, political, or creative standards acceptable to the region's specialists. At this point, to speak of Latin American futurisms did not make sense to most of those involved.

Latin American nations are called the "gray stain" around the world's foresight community. (Baena Paz and Patrouilleau, 2022) Despite lively traditions of future-maker creators and professionals, it is hard to find what Latin America envisions about the future. The absence of Latin America in the last two decades of emerging futurism is so subtle that this project focuses on the exploration of these images of the future, based on the analysis of documentation, interviews, and objects from and about the region, to characterize what entails a "Latin American Futurism(s)," how to identify them and why are essential for the local communities and beyond the presence of these futures in the current conversations.

Two moments should be considered in the change of this paradigm, orientated to the reclamation of a place on global and situated futurisms.

First, in 2005 a collective of writers and activists, coordinated by Osiris Reis, published a Manifesto called "Manifesto Anti-Brazilite." The piece was a reaction to what and how fiction can be written in the South American nation. Embrace principles of freedom and diversity in their craft, fighting the expectation for "Brazilianness" or the performance of archetypes or stereotypes about their nation in the constitution of their imaginations. It's not that they don't want to talk about their country, history, or nature, but they avoid being seen as an obligation. It's also antiimperialist documentation that imagination is not the property of the US, nor the Anglo-Saxon sphere, which has taken captive the production and analysis of imagination for the last decade.

The manifesto aims to subvert the negative connotation that local productions might have, such as funders' distrust in the quality of production, the audience's lack of entertainment, or the author's creative limitations to be able to speculate compelling stories about foreign planets written from a city in the Amazon rainforest. For them, the "Brazilite" was a mental barrier constraining the possibility of even suggesting images of the future outside their national comfort zone or culturally disputing other ways of thinking besides hegemonic companies' productions. This marginal manifesto is central to observing a process of rethinking the nature of future-oriented production from the same creators.

Second, the modernity/coloniality project, a collective of intellectuals from the social sciences and humanities, criticizes modernity's vision of the future, questioning the relationship between reason/truth. This collective, which includes thinkers such as Walter D. Mignolo (2008), Enrique Dussel (1993), Catherine Walsh (2010), Nelson Torres Maldonado (2007), Arturo Escobar (2007), Anibal Quijano (1999), among others, argues that the process of colonization of Latin America produced an exogenous and dependent form of knowledge. In this sense, it differs from trajectories of post-colonialism, understanding the phenomenon of coloniality as a manifestation produced by the experiences of the colonization of the American continent since 1492. The structures that sustain and contain this modernity/coloniality include capitalism, Catholicism, and the modern institutions that established a particular cultural pattern from the mestizaje of peoples in the last 500 years. (Baker, 2012)

Returning to Haywood Ferreira (2016), she states about Latin American visions of the future:

We have seen globalized futures with Latin American participation, futures in which Latin America remains on the margins due to the continuation of imperialist practices, futures in which characters profit from lessons of colonialism learned, futures where the measurement and perception of "advanced" and "superior" are redefined, futures that challenge the center to reexamine the status quo (220-221)

This trajectory clarifies that people in the region and its diaspora worldwide have produced and traced the presence of future-oriented knowledge. Based on rationality grounded in coloniality, creators get stuck in forms of imagination that are superficial and restricted. The path dependency on the region's fabulations deeply undermines taking the capacity of futuring more systematically. In addition, there should be a series of elements that Latin American peoples have produced, in half a millennium, that may characterize its ways of futuring that have been neglected and rejected until our days. In that form, and like an analogy as others, we must understand that there is at least a form of Latin American Futurisms inscribed on the objects and devices that are future-oriented. Still, also, it's hard to perceive when the future is on the tracks of Eurocentrism and modernity that doesn't belong to the region.

An important caveat of this piece is that due to the Global-North centrality of the current "Indigenous Futurisms," despite having a strong resonance in Latin America, I will not engage with Indigenous-centered visions of the future, which overlap territorially with the region, as many other spaces in North America, the Pacific, and even Europe. However, those are not the same epistemologically as a project of Latin American Futurism/s because their plurality and diversity need to be assessed by each specific group of people claiming future space. In that way, my scope is on the ontological subjects produced from the Conquests of Latin America in the 1500s and their national construction starting in the XIX Century. Remember that we can't isolate an object from other futurisms that inform. In that form, some manifestations of Indigenous Futurisms will be deeply linked with my understanding of Latin American Futurism/s.

In parallel, similarly to Afrofuturism, it has been some diasporic explorations of futurity. In her work, Catheryn Merla-Watson (2019) attempts an introduction to "Latinxfuturism" It is profoundly informed and even overlaps conceptually with "Chicanx futurism," described by Catherine Ramirez in 2004. A clear understanding of Latin American Futurisms is lacking, not just for the term itself, but for, and listed in Table 1. the degree of development that different fields have embraced in the last two decades, the multiple conceptions of futuring and futurism from the perspective of Latino migrants in the US. It transcended the borderlands and incorporated deep relations with Central American and Caribbean experiences and aesthetics. In their terms, they resist and contest boundaries of Modern/pre-modern, human/non-human that bicultural people navigate. However, it's another US-centered perspective. They might reproduce stereotypes of their ancestry and misrepresent the people's ways of living in the region.

Latinofuturism must also be situated within the ethnic and global subaltern futurisms as the experiences of people of color in the United States and throughout the world are interwoven through histories of bodily and epistemological violence systematically omitted from narratives of progress and technological advancement (Merla-Watson, 2019)

How Latinx, Indigenous, and Latin American futurisms should interconnect is unclear. But it's clear to me that to be inclusive of the experience of over 600 million living in Latin America – that is not just original, but migrants, as the ones that initially arrived from the north and the east and other others than later invade from "the West" – Nevertheless, I do propose to in future elaborations reflect about the racial and multicultural modalities that both shares. There are forms of exclusion and



oppression from the past and present that need to be addressed without the normativeness of American or European perspectives.

For the moment, I would clearly state that Latinxfuturism and Chicanafuturism cannot reflect on the ways of futuring and the cultural production that is not centered in the US experience. The example, sources, and cases are US-centered until now, and conciliation with other non-US-centered experiences is yet to be seen. Language difference is just one of the many distances that make this movement unable to embrace what is happening below the Rio Grande. In another part, Indigenous Futurisms aren't a single category but a myriad of manifestations with their ramifications, some more generative than others, and that are outside the scope of this research, as well, and I expect to see many other authors, scholars, and creators criticizing my definitions, to identify more and more futurisms in the years to come.

I acknowledge the paradox of writing this dissertation in a US institution from a territory that, for a period, belonged to what we understand as Latin America it might seem like a contradiction. Yet, I observed that contradiction as the generative space that allows me to make these questions to trace its stories and make sense of this rationality, the rationality of future knowledge from, about, and between Latin America as a collaborative space. Ezequiel Gatto affirms, "When becoming replaces presence as a way of understanding the world, this difference between futures and futurity becomes, in my opinion, more productive" to operate on the intellectual space needed to appreciate the value of futurity on reflection about our world.

## **Elements around Latin American Futurism/s**

As mentioned above, this piece explores Latin American futurisms as a location and an expansive identity. Not only focusing on literary or cultural production but as epistemic framing to approach futuring from a regional perspective. Expressly, Latin Americanness must be understood not just by history, race, location, or shared experience – such as coloniality or migration – but as a collective feeling emanating from a large and diverse collection of humanity. These are a way of being entrenched between food, language, objects, and ideas about the world had tenants that make future visions feel more Latin American than others and help us search for alternatives in our world.

It's vital to notice that I'm not the first one attempting to articulate a Latin American perspective about the future that is embedded in art, science, and technology. The Brazilian author Patrick Brock is researching the same idea in the Norwegian collective co-futures, with promising results to discuss. In addition, the Brazilian Costa Silva (2022) explores theater's contribution to Latinofuturism. This articulation, grounded in a similar yet reduced homological exercise, establishes parallelism with current affairs and invokes elements of temporalities, nature, and political performance, mentioning some examples in theatre without a clear connection with other arts or future thinking. In that form, currently, no proposal has been actively engaging on the dimensions of Latin American Futurism(s).

In a region so vast as Latin America, it would be crazy to think that I'm the first one looking at this topic. However, this interdisciplinarian and multinational approach allows me to sustain that Latin American Futurisms may have elements

that facilitate the recognition and distinction of it from other kinds of futurisms. In that way, I propose four elements that help me to identify Latin American future objects and experiences that can offer new relations with future knowledge, which I will shortly describe:

- The presence of “hybrid temporalities” that blend timelines and different rhymes.
- A centrality of nature as a dynamic, conflicting, and transformative dimension
- Failure is a norm in technological regimes. Improvisation is a way to be with objects.
- Peace looks like an everyday celebration and color.

Hybrid temporalities are the mix of different chronologies, from measurement to perception. I draw the notion of hybrid temporality from the work of Nestor García Canclini (2009), a media scholar dedicated to studying the internet in Latin America. He observes that social groups are not homogeneous but a complex mixture of our knowledge and neighbors. García Canclini says hybridization “is not synonymous with fusion without contradiction” (2009, p.II). The hybridization process possesses the quality of contradiction as a reference to the regional structural inequalities and the quality of mixing as a point of emergence of new things. Furthermore, the Bolivian sociologist Silvia Rivera Cusicanqui (2018) defies the hybridization mixture with the postcolonial feminist notion of “Ch’ixi,” which requires embracing the contradiction generatively, following the Harawayian understanding of “trouble.” When these understandings are applied to the notion of time in Latin America, the result is an intense collection of unfitted temporalities happening simultaneously.

In that form, it is not that Latin America doesn't have linear Western temporalities, but that that linearity is subverted in innovative ways that make, for instance, "ahorita" a permanent state in Mexico that transcends present, past, and future as traditionally understood. (Kuskelin, 2022). Haywood Ferreira has also observed this quality about the genre interconnection "Latin American science fiction has a powerful propensity to form hybrids with neighboring genres" (Haywood 2011, 8), which as a consequence, breeds new ways of conceiving time and narration on the images of the future.

The centrality of nature is a second aspect that I recognize in Latin American futurisms. The relationship between the people and the region is traversed by the ancestral knowledge of multiple communities that describe the Pacha Mama as a sentient being. (Gudynas, 2010; Tola, 2018) This belief is clearly observed in the past and present concerns of a region that understands wealth as part of the territory. Latin America is an extractive region. Its commodities come from mining, agriculture, oil, and renewable energies. (Chastain and Lorek, 2020) The region has environmental justice causes worldwide, which is not explained just for the colonial and corporative extraction of the region but also for the high level of awareness that Latin Americans have about the environment. (Ferrucci, 2019; Alvarez & Coolsaet, 2020) This centrality erodes modernity's binaries about life, breaking the distinctions between wild and civilized, organic and inorganic, and even life and death. (Jarosz, 2017) These relationships are observable in the decisive role that nature elements – wind, water, land – and biodiversity – mushrooms, forest, birds, jaguars, rabbits, dogs – play in everyday life expressions and metaphors of Spanish and Portuguese languages among the regions.

Around this dimension, Ramiro Sanchiz, an Uruguayan storyteller, describes how nature plays a role in his sci-fi production:

El verde es un color precisamente asociado a la naturaleza y la vida; en la novela a la que aludís el protagonista encuentra un tono particular de verde en a una entidad que no es vida ni tampoco sustancia inorgánica, ni tampoco natural ni artificial, ni terrestre ni extraterrestre. Lo único familiar es precisamente que su color es verde, aunque no sea el verde que conocemos. De hecho, esta idea de erosionar la distinción binaria entre natural/artificial (que de alguna manera presupone una afirmación fuerte sobre la agencia humana) es uno de mis temas favoritos desde la escritura de Verde en adelante. (Fritz, 2022)

[Green is a color precisely associated with nature and life; in the novel you allude to, the protagonist finds a particular shade of green in an entity that is neither life nor inorganic substance, neither natural nor artificial, neither terrestrial nor extraterrestrial. The only familiar thing is precisely that its color is green, even if it is not the green we know. In fact, this idea of eroding the binary distinction between natural/artificial (which somehow presupposes a strong assertion of human agency) is one of my favorite themes from the writing of Green onward. (Fritz, 2022)]

A third element emerges around the concepts of failure and improvisation as immanent in the Latin American perspectives about technological cultures. Gambiarra (Portuguese) or Chapuza (Mexican Spanish) often refers to material remixes with incomplete or anti-aesthetical design, but that does the work. (Bouffleur, 2006) This is often associated with a lack of rationality when seen through Modernity's lens. Osorio (2022) reflects on the tendency to study technological history in the region, analyzing the creativity and situatedness of *chuño*, in contrast to most studies that center on modern and digital technologies. The chronolandscape that emerges from the interactions between technologies in the region creates an eclectic scene that locals and foreigners often question.

However, I claim that this condition is the default setting of our technological regimes. Latin Americans and many people from the Global South embrace it as a way of being with technology. Improvisation and failure are also connected with our political regimes' perceived lack of efficiency. (Brinks, Levitsky, and Murillo, 2020) The notion of the "Banana Republic," popularized after the US-framed coup of Guatemala, has haunted the region's lack of political stability. Technological landscapes are mismatched yet functional to a certain degree. Obsolescence is delayed, and artifacts and systems that still work are kept in operation, even when it is clear that they are broken.

Nevertheless, I would like to place value on this aspect and balance the negative political connotations with the power of innovation. Our systems' material and political constraints drive patterns of change everywhere that require a particular sensibility to be appreciated. Yet, the coloniality we also possess in the region produces a contradiction: Despite being surrounded by those creative assemblages,

these are publicly undermined and described as temporary. Even if that temporality has been the whole existence of some buildings, institutions, and nations...

The last element I found is that ideal visions of the future aren't places of calm, continuous growth, and balance. Instead, peace looks like an everyday celebration and color. This emotional aspiration is represented in the cycles of festivities around the region, from the holy week to the Carnaval. Music, family, love, and dance are connected to the expected. This state of celebration is found in diverse ways but includes the capacity to withdraw from mundane preoccupation or survival conditions to have mobile stability. One that keeps time and people together, like a picture in its best moment. It's not growth that drives this image of the future, but contemplation, one that understands the finite span of human and non-human life and makes the best of the time together.

Those four aspects in my proposal came from carefully observing and listening to objects, devices, ideas, and theories about the future of Latin America. It might be wrong because all categories are incomplete. However, to figure out what makes an image of the future "Latin American," these four aspects came as salient.

Two considerations are central to appreciating this: A Latin American future is not necessarily done for a Latin American person, and neither has to happen in Latin America. As with other futurisms, these are flowing categories that we can retro-label after their enunciation. (Haywood Ferreira, 2008) Yet, finding two or more of these elements may tell us that the sensibility of the project, creator, or community involved aligns with contemporary elements that gravitate toward Latin American future productions. Many of these conceptualizations contest even what

foresight, design, and science fiction are traditionally conceived. Yet. Stephen Tobin, in a similar issue, offers a grand synthesis of the Latin American feeling:

Si esta breve descripción resulta chocante, debería ser así, dado que "Khatakali" exhibe un rasgo central para la ciencia ficción latinoamericana como un conjunto: a menudo problematiza las fronteras rígidas del género literario que por lo tanto cuestiona las nociones occidentales sobre qué es la ciencia y cómo se crea el conocimiento. En otras palabras, desafía las conceptualizaciones tradicionales sobre qué constituye tanto la ciencia ficción como la ciencia, tal y como las entiende el Norte. (Tobin, n/d)

[If this brief description is shocking, it should be, given that "Khatakali" exhibits a central feature for Latin American science fiction: it often problematizes the rigid boundaries of literary genre and thus questions Western notions of what science is and how knowledge is created. In other words, it challenges traditional conceptualizations of what constitutes science fiction and science, as understood by the North. (Tobin, n/d)]

In that form, exploring Latin American futurisms is to get on the hinges of imagination to detect those subversive characteristics crossing geographies, epistemologies, and ontologies with Latin America at the center—the following chapters approach technologies, visions, and communities' different manifestations of Latin American futurisms.



## CHAPTER 3

### **ARTEFACTUAL EXPLORATION OF LATIN AMERICAN FUTURISM/S**

Artifacts are usually an entrance to future making. Rockets, robots, time machines, and other devices configure human imaginations about what might come in the future. The role of these devices in the configuration of our future visions is manifested in multiple forms in popular culture, which are deeply informed by Anglo-Saxon science fiction and cinema productions. Yet, not all of those technologies manifest equally in the world. This chapter explores Latin American Futurism/s from an artefactual perspective to exemplify its manifestation in different works and mediums.

My goal in introducing exemplars is to show the diversity of the manifestation of the ideas introduced in Chapter 2. Understanding the list of characteristics as a compass rather than a map is essential because the articulation of Latin American Futurism/s is still ongoing. The object analysis allows appreciation of the neglected and specific way Latin America connects with its imagination for the future. The questions that guide this study are which strategies situate future-centered objects as “Latin American” compared to other devices in other futurisms?

In this chapter, I will describe my methodology to approach these objects and their stories based on the heuristic set of markers to identify Latin American Futurism/s. Then, I offer seven artifacts I describe as exemplars of Latin American Futurism/s. Each has different modalities and strategies illuminating Latin American

envisionings and desired future experiences. In conclusion, I summarize my argument around why Latin America matters in the conversation of global futures and futuring.

I hope this project empowers regional creators and scholars of futures and technology to articulate better collective responses to challenges that require their talents in the region. The selected cases are neither exclusive nor unique around the region, but to me are a great place to start to learn about the diversity of communicative, creative, and intellectual strategies that the interested reader to combat assumptions about this region and people, to appreciate the value and quality of the imaginations coming from elsewhere.

#### **A note in methodology.**

In this chapter, I showcase some selected objects, devices, stories, and experiences that I consider examples of Latin American Futurism. This selection is intentionally diverse in territories and styles because how future knowledge is presented is not reduced to narrative or film. These devices are described and characterized to highlight the four dimensions proposed in the previous section, articulating how to pin other things as part of the movement. However, I clarify that I´m linking these products under the label of Latin American futurism/s, and authors and creators may embrace, reinterpret, or reject these labels. In Global Futurisms, categorization is always problematic, and limitations are given to the frameworks and theories that allow us to produce that category.

The selection of artifacts came from purposeful sampling. The following sampling is a product of the mapping made of workers and works between the

window 2010-2022 that this dissertation focuses on. The inclusion on this list are works made by Latin American future experts or for other futures experts in Latin America, which incorporate some of the aspects from the proposal in Chapter 2. In that form, the feeling that each of these projects represents aligns with some or many characteristics that inform Latin American Futurism/s.

For the analysis, I relied on firsthand access to the pieces (or fragments of the piece) through digital and physical media and as secondary literature to describe their history, design, affordances, and appropriations around them. (Van der Boomen and Lehman, 2014). Based on exploring the objects, I combine the modalities of the technology that mediate it and the representation of the future that it conveys its experience. In that way, identifying potential images of the future came from a careful reading of an experience, such as plot, spatial design, temporality, and/or production. (Gillespie and Toynbee, 2006) Each object I selected informs, from modalities that emerged from different geographical and epistemic locations, forms of futuring that inform a view with Latin America at the center. The key attractors were initially the future (and its multiple iterations) and their connection to Latin America (from the creator, location, or intention). As object 3 illustrates, you don't need to be native to the region to create products of Latin American futurism.

To explore critical exemplars of Latin American futurisms, I use media and content analysis to characterize elements of seven multimodal artifacts produced around Latin America, with that feeling at its center. In that form, the collection of observations was synthesized using analog methods and articulated by combining aspects that inspire Thing Theory (Brown, 2001) with Visual Methodologies (Rose, 2001), specifically those that allow exploring the site, modalities, and production of

future images. These exemplars came from the collection of devices, notes, interviews, and travels between 2020 to 2022 for this dissertation project. Among these, I selected elements that powerfully illustrate the proposed characteristics of Latin American Futurisms.

In that form, each object highlights the dimensions of production, meaning, representation, and futuring of each experience. Notice that I'm labeling these elements as Latin American future probes, and the authors may or may not agree with my interpretation of their works afterward. However, this is similar to most futurisms introduced in Table 1.

Under these considerations, the following sections introduce and describe each of the seven selected artifacts.

**Panoptica: Los últimos días del Futuro (Perú, 2013-2015; 2022-now).**

Cesar Santibañez, writer, and Hugo Espinoza, illustrator, created the comic Panoptica: The last days of the Future in 2013. In initially five numbers across two years, these self-contain visual stories describe the days of the last millions of humans on the Earth. This project has two different editorial moments: As a limited publication by Dogma Editorial in Spanish in Peru from 2013 to 2015 by the creators. Since 2020, the Italian editorial Future Fictions got the rights and edited two volumes in Italian and English, which collect the original five editions, and extend the stories with texts and three other stories, reviving the production of Panoptica and extending it to a global audience. As the writer suggests, the edition is "suggested to adult public" (Santibañez, 2014), which doesn't restrict different readers from engaging

with this world. The broken temporalities of production and the separation of characters in the plot inform hybrid temporalities around this project.

This narrative is told by a countdown of humans on the Earth and the calamities of a humanity doomed by infertility and nuclear radiation that mutates and pollutes nature in multiple forms. With a strong cyberpunk inspiration, the story tells the stories of many characters in 10-pages numbers of black and white illustrations. Panoptica's plot is developed by exchanging diverse viewpoints among different humans with evolving motivations in a world in demise that may promise to converge. Between them, the young Lily, a rebel and courageous woman who befriended a mutant in her adventures; Charlot, a marine who travels around the world doing the complex works that nobody wants to commit and Niddill, a woman haunted by her past, who on the discovery of her lonely commits to a bio-terrorist organization called Evol-A, which aims to the final elimination of human beings "If men are finite, the humankind is finite," motif of Evol-A inform us about the threat that presents for some of the characters and the comfort that other can find on the certainty of human extinction in the world of 10534.

The story possesses multiple influences, from Cyberpunk 2077 to Miguel Angel. Even an allegory to Miguel Angel's Pietà is included in the first number, which narrates the story of Lily and its mutated mascot Grubber in an ecosystemic event that changes her life. (See Figure 2). The assembled intertext in the story offers a common language to transmit the motivations and concerns of the talented authors with other science fiction creators worldwide and the overall Western Cannon of art and culture.

The environmental trope is transversal during the story. Nature is not constrained to a background, but an actor that drives the story, not just for body modifications of characters, mutant ecosystems, or atmospheric travels, serves us to understand the philosophy around the world and propels a world in which humanity it's at last. As a multi-perspective narration, this comic has multiple visions of the future within the characters. Still, as an overall creative work, it tells us how humanity may arrive at its extent by fighting to celebrate its existence on Earth.



*Figure 2.* Still-image from *Panoptica: Los últimos días del Futuro*. Chapter 1 (2013). Illustrate Grubber, a mutant mascot in a pollinated Mushroom forest carrying Lily, a protagonist, and previous owner. As one of the authors claimed, this is a direct reference to Miguel Angel's *Pieta*. (Source: *Panoptica* website. Illustration by Hugo Espinoza)

### **Fractura, Short Story (Uruguay, 2021).**

Ramiro Sanchiz is an accelerationist and speculative realism translator, science fiction writer, and essayist from Montevideo, Uruguay. With more than 25 books published, his works covering two decades of literary production have been recognized as one of the new voices in Uruguayan literature and Latin American fiction. Sanchiz's *Fracture* is the story of an Uruguayan writer who visited the domed city of Lima, Peru, for the first time. In this world, Lima had a mysterious dome, placed by the Incans during the Spanish colonization, that perdures until today, affecting the city and its inhabitants fascinatingly.

It does not a surprise that one of his short stories, "Fractura" (Fracture), was included in the Anthology of Latin American Science Fiction "El Tercer Mundo Despues del Sol" (The Third World after the Sun), edited by the Colombian Scholar, Editor, and Sci-Fi Writer Rodrigo Bastidas. The stories offer a range of tropes, methods, and expressions from 12 nations and multiple generations of authors of new weird, cyberpunk, eco-utopias, and hard-to-define stories. This 2021 collection published by Minotauro Editorial, which is famously a pioneer in the speculative genre for starting the Spanish translation of Anglo-Saxon science fiction (*Martian Chronicles* by Ray Bradbury in August 1955, prologued by Jorge Luis Borges), established a new ground to understand the definition of science fiction from Latin America.

—Todo en Lima aguantará así, precariamente, hasta que se caiga el domo

—decían mis colegas.



[-Everything in Lima will hold up like this, precariously, until the dome falls down.

-said my colleagues.]

(El Tercer Mundo Después del Sol, p.200)

The mystery of the dome is not the center of the plot but a missing toy soldier the protagonist had lost in his childhood. The writer's memories haunt a large section of the narrative, exploring the theme of childhood, past and present times interject—the piece questions what loss means for the main character. However, in Lima, a legend tells that everything lost returns to the north of the dome. In that form, the nostalgic and recursive search of the protagonist is updated by his visit to this speculative Lima.

Finalmente, alguien me preguntó qué querría encontrar, si pudiera elegir con qué o con quién reencontrarme. Yo me puse a hablar de juguetes, de libros que había perdido en mudanzas. ¿Ninguna mujer?, insistieron, ¿ningún amigo? ¿Un abuelo, una abuela? Y no supe qué contestar.

[Finally, someone asked me what I would want to meet if I could choose what or whom to meet again. What or with whom to meet. I started talking about toys, about books I had lost in moves. No woman, they insisted, no friends? A grandfather, a grandmother? And I didn't know what to answer.]

(El Tercer Mundo Después del Sol p.202)

Our main character suffers the effects of being inside the dome, and their memories feel the effects of being “outside the cosmic karma.” The mysterious powers

of the dome not just protected Lima from Colonization and isolated it from some universal forces. The disruptions of the protagonists are teased by other characters, who make his time in Lima more meaningful in his search.

Sentí que llevaba meses enteros en Lima, que la ciudad hacía tiempo que había empezado a cansarme, a gastarme. Sabía que no podía ser así, pero cuando busqué en mi memoria el dato preciso del tiempo que llevaba en la ciudad, esa información (que debía ser de una certeza luminosa) se resistió en acudir.

[I felt that I had been in Lima for months, that the city had long since begun to tire me, to wear me out. Had long since begun to tire me, to wear me out. I knew it could not be like that, but when I searched my memory for precise data on how long I had been in the city, that information city, that information (which had to be of a luminous certainty) resisted in to come.]

(El Tercer Mundo 56rofess del Sol p.203)

The climax, accelerated by an ancestral drug parallelizing the narcotraffic that largely stereotypes the region, connects the protagonist with his more precious loss. The ways in which this speculative Lima distorts by indigenous technologies what is possible and don't is rewarding and meaningful in unexpected ways. Ultimately, Sanchiz communicates a powerful metaphor about what makes us feel complete, even in a foreign environment.

The closure of the narrative is not the end of Sanchis' contribution. Something compelling about the Anthology is that each author shares a little blur about their understanding of "Latin American Science Fiction." Sanchiz's response is surprising

due to his trajectory of cultivating the genre for 20 years yet struggling to identify it. Fracture concludes with this note, which is even more twisted than the end of the short story.

Si me hubiesen preguntado hace dos años por la ciencia ficción latinoamericana habría respondido expresando mis reservas de que tal cosa existiera —más allá de la obviedad de “ciencia ficción escrita en los países de Latinoamérica”—. Pero después de leer *El Gusano*, de Luis Carlos Barragán, y trazar sus conexiones con *Ygrassil*, de Jorge Baradit, y conectarlo todo con los cuentos de Pablo Dobrinin, Alberto Chimal y Mariana Enríquez, todo cambió. La ciencia ficción latinoamericana está emergiendo o ya ha emergido desde el sistema complejo de la literatura latinoamericana, en gran medida gracias a los nuevos caminos de conexión, redes analógicas o digitales, biológicas o sintéticas. Y su configuración más clara es una versión de alguna manera territorializada del weird lovecraftiano y el más reciente new weird, en tanto tradiciones releídas desde nuestros territorios que producen entidades ficcionales nuevas y deslumbrantes: ciberchamanismo posthumano en una historia alternativa de la modernidad global.

[If I had been asked two years ago about Latin American science fiction, I would have responded by expressing my reservations that such a thing existed - beyond the obvious “science fiction written in Latin American countries”-. But after reading Luis Carlos Barragán’s *El Gusano*, and tracing its connections with Jorge Baradit’s *Ygrassil*, and connecting it all with the stories of Pablo Dobrinin, Alberto Chimal, and Mariana Enríquez, everything changed. Latin American science fiction is emerging or has already emerged from the complex system

of Latin American literature, largely thanks to new paths of connection, analog or digital, biological or synthetic networks. And its clearest configuration is a somehow territorialized version of the Lovecraftian weird and the more recent new weird, as traditions reread from our territories that produce new and dazzling fictional entities: post-human cyberchamanism in an alternative history of global modernity.]

(El Tercer Mundo 58 profes del Sol p.210)

The text tells us a lot about the connections and traditions of literary science fiction from the region and the author's trajectory to achieve his place on this collective project. Sanchiz, as a successful writer for the last two decades, seems to struggle to place himself in the labels that I expected, as an epistemic issue that is starting to be resolved by collective projects that allow recognizing its kind.

### **Hyper-reality, Conceptual Video (Colombia, 2015).**

In 6 minutes, Keiichi Matsuda reflects on the impact of virtual and augmented reality in Hyperreality, a visual experience that follows Juliana in her everyday life in Medellin, Colombia. In the presented future vision, the virtual and physical elements overlap and are interconnected in an overflow media. (Gomez Garcia, 2016) The conceptual video is made for Matsuda in his studio in London as part of a larger collection of visual explorations about the future. The role of smartphones, wearables, and interactive codes establish a reality where digital stimuli constitute the center of the experience. Highly personalized assistants guide people through their progressions in labor and life. (Figure 3) But everything that Mariana Restrepo is gets in danger when a hacker intervenes in her accounts. With shots full of information, the viewer also gets overwhelmed by the first-person perspective of this video.

Juliana Restrepo guides us on the eclectic experience of her search. In three short moments, she tells us about the construction of society during a bus trip, her concerns about her cyberpositionality doing grocery shopping as a job, and its resolution in the crowded city of Downtown Medellin. (Figure 4) Each scene is an overload in colors, sounds, and movement, which are glued by the perspective of Juliana. The glue between every interaction and experience is an immersive perspective, which allows the viewer to explore this future life of floating visuals, interactive calls, and points. Hyper-Reality attempts to explore this exciting but dangerous trajectory. The project was produced by Matsuda in London, with the support of local organizations in Colombia and a crowdsourcing campaign on Kickstarter.



Figure 3. Still image from Hyper-reality (2016). The image shows the hand of a woman with yogurt in a supermarket. Information in the aisle is displayed by a digital device that allows the projection of highly personalized augmented reality (AR). The video is always seen from the first-person perspective of Juliana Restrepo, the story's protagonist. (Source: Hyper-Reality of Keiichi Matsuda, Youtube channel)



*Figure 4.* Still image from *Hyper-reality* (2016). The image shows an augmented street in Medellín, Colombia. Bright colors, sounds, and other aspects in an ecosystem of saturated information signal different elements. The incorporation of Spanish, English, and Japanese text reports the global nature of the corporative media environment in which the character lives. (Source: *Hyper-Reality* of Keiichi Matsuda, Youtube channel)

### **Case 63, fictional podcast (Chile, 2020-2022).**

Caso 63 is a limited fictional podcast series created by the Chilean screenwriter Julio Rojas and initially launched in November 2020. With three seasons of 10 episodes each, it was produced by Emisor podcasting in Spanish and streamed by Spotify, having each episode around 15 minutes. The main actors are the Chileans Antonia Zegers and Nestor Castellana. This series was translated and launched in Portuguese in July 2021 as *Patient 63* with the participation of Seu Jorge and Mel Lisboa as the protagonists, in Hindi in early 2022 as *Virus 2063* with Ali Fazail and Richa Chadra, and in English in July 2023 as *Patient 63*, starred by Oscar Issac and Julianne Moore. The local recognition of their actors increases the relevance of this pandemic narrative, which incorporates psychiatry, temporal travels, epidemiology, and the recorded voice to tell a romantic, emotive, and traumatic story.

What will you do if you're told that the one that needs to save the world? The series' plot starts with the psychiatrist Elisa Aldunate (Antonia Zegers), which records seven sessions with its new patient Pedro Reuter (Nestor Castellana), registered as Case 63. Pedro affirms to be a temporal traveler who came to a stop a new pandemic and needs Dr. Aldunate to be the one that helps him to stop someone from taking a flight between Santiago and Madrid a few days after his arrival. Pedro was placed in an asylum for their ungrounded claims and erratic behavior.

We listen to the recordings of Dr. Aldunate to explore the effects of this case, where fiction and reality alternate and evolve to interconnect temporalities between 2012, 2022, and 2062. In this narrative, the main two characters intersect with other minor roles on multiple timelines, constructing a larger cacophony of desire and struggle that follows the protagonist. Avoiding more spoilers, the many temporal loops we heard through the episodes, the story attempts to arrive at an earlier place of tranquility. However, the creator incorporates dramatic elements with an incredible sound edition that make the audience understand that impossible to make things as are used to be.

The atmospheric elements that include are vital. For instance, during episode 8 of the first season, Eliza visits her favorite place in the hospital. As an outdoor location, you can also hear the movement of the leaves with the wind, some people walking, and a bit of water from a fountain. The sound edition is intentionally designed to immerse the situation, with attention to details that make the listener close to the case and their characters.

### **Argentina Futura, government program (Argentina, 2020-now).**

With the goal of “to generate a plural and diverse platform of thought, with a federal and local perspective, that contributes to a long-term vision” about Argentina, in 2020, the Office of Cabinet of Ministers of Alberto Fernandez Government launched the program Argentina Futura, (Boletin Argentina, 2020) with the leadership of the anthropologist Alejandro Grimson. The program selected academic, intellectual, and social production to envision public policy and governance in the future of the South American nation. An attractive characteristic is that it was initially designed to work until December 2021. However, it has been extended and enlarged, increasing its scope and bringing continuity to a limited-time program.

Initially acting as a critical articulator during the COVID-19 pandemic, the program invites diverse scholars from all disciplines and territorial experts to public policy discussions. Topics such as the Future of Work, the Global Latin American Model, and fostering skills for Future thinking have been activities led by this initiative. He initiative coordinates a series of publications, too, like the Open Books of the Future, an iterating handbook of contributions about key concepts of future thinking written by leaders, politicians, scholars, and practitioners involved in the process of technical and social innovation. A surprising element is the prominence of philosophers and social scientists in shaping Argentina Futura, with expected links to the government. They also propose a counternarrative to technoscientific futuring that has dominated the development agendas in the country. Other activities include a University Forum for the Future and a podcast called Futuralia. Monthly editions discuss elements of visions of the future in the National Radio of Argentina.



The program appropriates in a governmental way methods of future-making as agenda-setting and a hotbed for emerging topics in energy, demographic, labor, and public policy. The national focus of the initiative allowed them to vindicate a disarticulated collection of initiatives and expertise in the territory, which includes the foresight center in Universidad Nacional de Cuyo, Mendoza, one of the most significant prospective initiatives in the region. The inclusion of science communicators has also played a role in making Argentina Futura a convergent space for innovators and creators looking to work in a global crisis on a national scale.

This program can be observed as a way to generate government capacities, particularly from the learnings of the COVID-19 pandemic. Yet, it is not bounded to the traditional models of futuring and incorporates the strong future-oriented traditions mentioned in the second section about the future in Argentina's past. Each activity they develop is full of academic glamour to bring attention, as an attractor that the experts know the best ways to include everyone in the future. The program results are yet to be seen in detail, but the construction of the community and the institutional attention are intersecting highlights. Yet, the continuity of this program depends on political interest because they're not a proper institution on any federal level, just a renewed program.

The propulsion of new national imaginaries of development, justice, sustainability, and health is evident. Argentina Futura functions as a node of scholarly thought in the nation to think about the future and brings to the center of government that multi-epistemic expertise to anticipate, with the taste of mate and the sound of the milonga, what Argentina can be in the remainder of this century.

***Museum do Amanha, a science museum (Brazil, 2016-now).***

The Museu do Amanha, inaugurated in Rio de Janeiro, Brazil, in 2015, is one of the most prominent spaces about the Future in Latin America. This monumental white building was designed by the Spanish architect Santiago Calatrava. It defines as a “different science museum,” enacting different experiences to reflect on human relations with time and nature. The main exhibit, “The Gallery of Time,” located on the second floor, is a compound of five sections that offer a sequential yet open pathway for exploration. Multiple openings allow accessing two lateral hallways, which reproduce most of the exhibit in an accessible way (braille and volumetric production). On the main course, each section has a specific topic and geometry, aiming to immerse the audience in the conversation about the future.

- Cosmos is a half-sphere dome where a film about the universe places the role of humans in shaping the world from the origin of the universe until the present. After the dome, six oval desks offer interactive infographics about the physical properties of the universe, such as pressure and density, in context with the astronomical bodies of the universe.
- Earth (*Terra*), three cubes of seven meters with visual tessellations about matter, life, and information. On the outside, multiple infographics support the main piece, three artistic interventions with a dynamic sculpture or material pillars that evoke the reflection about what it means to live on Earth.

- Anthropocene is the most impressive exhibit, a compound of six black totems with ten-meter tall and three-meter-wide screens about human impacts in the biosphere. The immersion in this space is not just made for the materiality of the screening but for the sonic rhythmicity of acceleration framed by a 6-minute film portrayed as a synchronized and trilingual visualization film, updated by the museum with new metrics and statistics. (see Figure 5) Da Costa and Rocha performed a semiotic analysis of this interdisciplinarian and environmental display.
  
- Tomorrows (*Amanhas*) is built as a folded origami; the exhibit focus on aspects of nature, humanity, and technology interconnection. Interactive digital games such as “*O jogo das civilizacoes*” and “*Humano*” interrogate with the visitor’s interaction what it means to go to the future. Illustrated in Figure 6, the infographics and videos in this sector are based on multiple sources and incorporate testimonies of Brazilian and global experts in sustainability, urban planning, and demographics.
  
- Us (Nos) is a minimalistic and sonic experience, surrounded by two semi-spherical spaces built as an Oca, an indigenous house of the Tupi-Guarani people. At the center, a churinga, a wood plaque made by indigenous Australian people, is showcased over a toroidal platform with inscriptions about ancestral reflections about time and life. The inscriptions reflect the interwoven dynamics of temporal dimensions and the overlap between past, present, and future human experiences. This space is a place for the visitor's reflexivity and to return to the world

and find the bottom of the building, which leads to a panoramic view of Guanabara Bay.

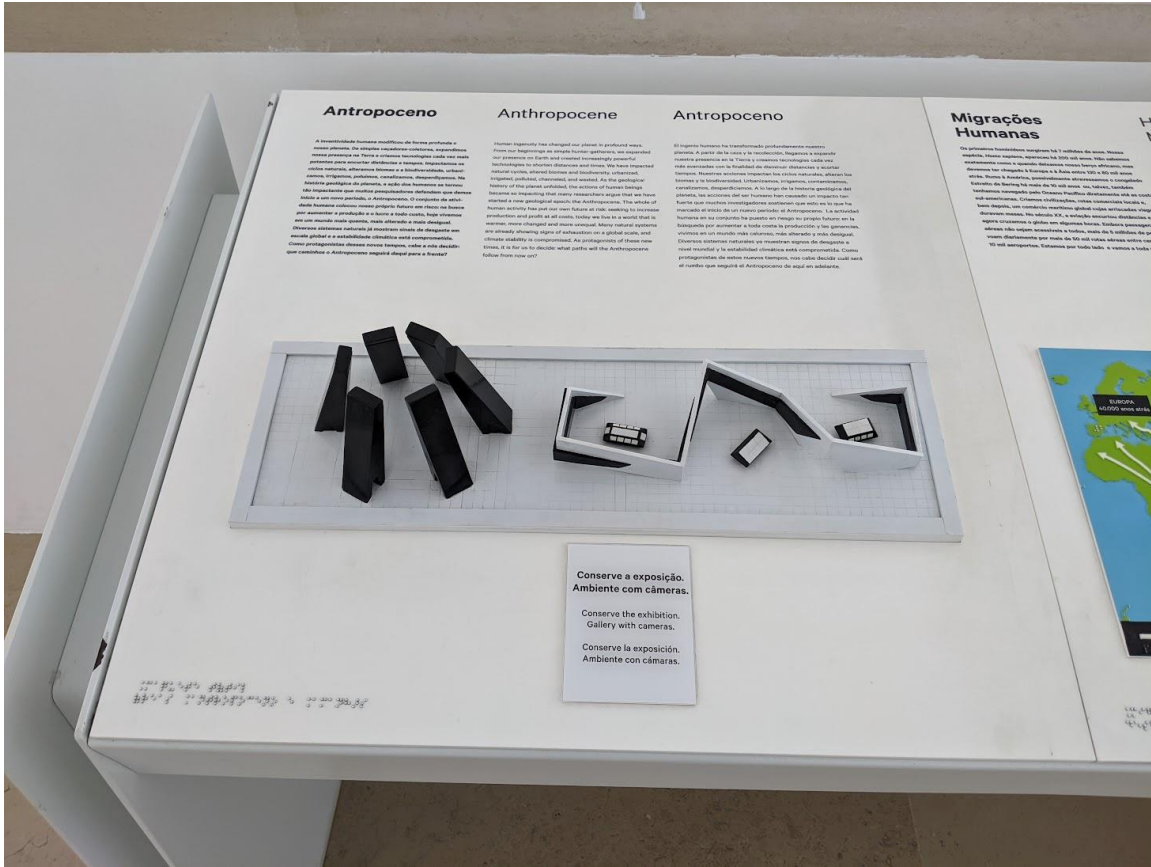


Figure 5. Lateral Display of Main Exhibit, Museu do Amanha. The picture shows the volumetric design of the sections Anthropocene and Amanhas in the museum for blind visitors. In addition, a trilingual description of the curators is showcased above to explain their design intentions for the modules (Source: Own elaboration, Visit on June 2022)

The main exhibit of the Museu do Amanha has many aspects of relevance as a manifestation of Latin American Futurisms. At first, despite its non-traditional narrative, it was framed as a science museum. The reflective elements indicate that in addition to informing and entertaining with scientific concepts, there is an operation to offer visions of the human, planetary, and cosmic futures operating in different scales around us. That design is intersected by open space to walk around, interactive devices

to get more information, characteristic volumetric spaces that aim for different visitors' rhythms, and the use of light and sound to guide to the edges and invite exploration.

Each exhibit possesses its own temporality, crossed with their intellectual contributions that increase in complexity on every visit. Those multiple narratives also have different sources, operating as an experience of epistemic diversity about how we understand and interact with the future. The multilingualism of the experience, uncommon in most museums of the region, it's a declaration about how this place has something to say from Brazil to the world.

Spatially, the monumentality of the building and spaces contrast with the tiny details of its exploration, making it feel the future out of place. Even the location in which this museum is located is one of the places where historically arrived black slaves to Brazil and the Americas. This violent paradox is reinforced by the fact that the Spanish Architect that designed the piece has been involved in multiple controversies about its "universal" and "ideal" style, which unrealistically set expectations without historicizing the locations. (Pedrosa, 2018. P.10) Yet the main exhibit in this building subverts that historical oblivion and attempts to include everyone in its narrative, allowing its visitors to envision futures in which they can see the world as protagonists and not wait for others to indicate them where the future will come from.



*Figure 6.* Frontal picture inside the origami design of Amanha, part of the Main Exhibit, Museu do Amanha. The picture shows an angular corner that works as a portal, with continuous displays showing philosophical questions about the future. The lower corner shows three visitors interacting with one of the games in the area, “O jogo as civilizations” (Source: Own elaboration, Visit on June 2022).

**Toys of Tomorrow in *Diseño del Mañana*, academic experience  
(Mexico, 2016-now).**

The postgraduate diploma in “Diseño del Mañana” (Designs of Tomorrow) from Centro, a private Mexican university focused on Creative Economies, is a place of convergence of future thinkers and makers worldwide. Since 2016 the program led by the Media anthropologist and strategist Karla Paniagua has gotten around 60 graduates in this one-year learning experience. (Paniagua, 2019) The program incorporates multiple learning elements such as systems thinking, foresight methods, speculative design, anticipatory anthropology, and multimodal workshops. The program incorporates master classes and practices that overachieve the scope of a graduate diploma, incorporating as many elements and practices of future-making in just one year.

Among these experiences, I like to focus on the product of a particular Social Innovation workshop co-led with Paolo Cardini in Global Futures. In this workshop, students engage practices of speculative and creative design. One of the most meaningful objects I found in my explorations is part of works on Toys of Tomorrows from the 2019 generation. This device is a speculative blanket created to comfort young kids in Mexico's peripheric and rural towns.

This speculative object, 3D printed in a green resin as a prototype, responds to the increasing violence due to the punitive prosecution of cartels and other criminal organizations that have taken over the Mexican territory. This toy is for a future in which that trend continues, and the state cannot ensure safety for its inhabitants beyond major urban centers. Despite the fact that murders had been decreasing in

2022, Mexico had around 30.000 homicides a year, which target diverse populations. The blanket acknowledges the uncertainties of growing up in this environment that parents and kids have. Figure 7 is a picture of a prototype.

The speculative company "BruLeo" (an acronym for the two authors of the project, the students Bruno and Leonardo from the program) develop a ballistic blanket for increasing everyday protection for infants. In their envisioned future, this device will be a way to ensure that parents targeted by a narco organization are able to protect their babies from an attack on their parents. This device is envisioned as a product of National Football Clubs producing blankets that incorporate multilayer Kevlar – to protect from 9mm – to ensure the legacy of their parent's passions in case of catastrophe. The speculative Design applied in this device is particularly concerning but also profoundly relevant to the conditions of life in contemporary Mexico. Like other cautionary tales, the intentions of the design are aligned with a present of failure and incompleteness, which requires preparation for the worst with the best attitude.





*Figure 7. Anti-ballistic Blanket in CENTRO, Mexico. Created by the speculative company "BruLeo," part of the workshop on Social Innovation of the Designs of Tomorrow program. (Source: Picture taken by Karla Paniagua, program director).*

Why would a parent like to leave their child with a Kevlar blanket? Because it might be a legacy that will save their life in case of catastrophe. The biological care of mother and fatherhood gets projected through this speculative design. The element is intergenerational because it's the ability to understand the transcendence of the material and the people through it. As many Latin Americans, the boundaries between life and death are communicated through objects in rituals of memory that allow them to live with the loss. That emotional connection increases with the Football designs, which turn everyday tradition and belief into an element to be shared in the afterlife of these current tragedies.

The program is a statement of the integrative creativity that Latin America can have around producing images of the future. This object emanates a powerful synthesis: The future is happening everywhere, and we can anticipate but not predict. The Design of Tomorrow diploma students seem to be empowered with theoretical, creative, and strategic tools to grasp, from a Latin American experience, images of the future surrounding the region and the world.

### **Learnings and Next Steps.**

The object analysis offered in the piece illuminated four elements that I do propose as markers to detect Latin American Futurism/s in Chapter 2, which include:

- The presence of “hybrid temporalities” that blend timelines and different rhythms.
- A centrality of nature as a dynamic, conflicting, and transformative dimension
- Failure is a norm in technological regimes. Improvisation is a way to be with objects.
- Peace looks like an everyday celebration and color.

Those elements emerged from a deep engagement with objects, creators, and elements of futurity that center Latin America in their endeavors. Their presence or absence is not a requirement, yet a factor to consider if the piece in question is centering aspects of Latin America in their performance and affordances. The identification of these pieces, at the moment, is not an element of self-determination

but instead a retro-labeling exercise of the analyst to make sense of the production and consumption of images of the future with the feeling of Latin American on them.

The selected pieces in Table 1 (Chapter 2) aren't an exhaustive list but a collection of exemplars to discuss, observable in different aspects of the seven objects. I consider that the boundary of different futurisms should not be absolute, yet simultaneous, allowing to highlight aesthetic, ideological, and epistemological elements of communities of practice engaging with the future. As the case of Afrofuturism has shown, retro labeling can be contested, and the relation with other emerging categories of counter futurisms is a negotiation that is still to be happening. This discussion particularly applies to the relations between Latinxfuturism, Chicaxfuturism, and Indigenous Futurism, which overlap partially with the tropes, motivations, and dynamics of the proposed Latin American Futurism.

Another consideration is how Futurism informs about the technological cultures within a group of people somewhere in the world. Even if they are culturally, linguistically, or climatically connected, those intersectional experiences defy monolithic and universal claims that have dominated the social imaginations and public policy about what technology means. From a Latin American perspective, the lesson that Science and Technology Scholars have collected in many case studies about traditional and modern technology may find some parallelism with the images, narrative, and imaginaries that articulate the speculative realm of Latin American Futurisms.

As a final note, I want to bring Chattopadhyay's (2021) "Manifesto of Futurisms," a project in which he studied recent manifestos of futurisms, and attempted to articulate a collective meaning of them, too. He concludes that most futurisms don't focus on the "decolonization" of science fiction because these manifestos understand science fiction as colonialism. As I mentioned, the structures and infrastructures of knowledge are vessels of coloniality.

Chattopadhyay interprets the subversive nature of these manifestos as decolonization. In contrast, and perhaps of my lack of understanding of the decolonial movement, I perceive the most valuable lesson to observe of futurism is what we - collectively, as humanity- want to keep in our futures iterations when the notion of Latin America may become an anachronism for a galactic civilization. They look for inspiration about how the past envisioned the future to understand the value of multiple perspectives in which no one is left behind.

Multiple futurisms are a space of multiple reclamations: territorial, intellectual, racial, political, and temporal. The need for futurism starts when we acknowledge that images of the future are also simultaneous, multimodal, and controversial. In that form, futurisms are not just an innovation in understanding science fiction and speculative literature as a whole in the early 21<sup>st</sup> century. Futurisms are a way to embrace our ways of existence with technology, which are plural, diverse, and contested. It seems modern monofutures stole our capacity to imagine different ways of being in our world... until we fight for it.

## CHAPTER 4

### **LOCAL VISIONS OF TECHNOLOGICAL FUTURES**

Technologies and futures are intertwined concepts in our language, imagination, literature, and life. (Johnson and Jameson, 2021, p.7) Both dimensions require radical imaginations to open speculative worlds, prospect scenarios, and models about possible, desirable, and probable new realities. (Roca, 2022) Technologies and futures are deeply entangled because both are interconnected in our speculations and expectations about how the world is and can be materially and semiotically. Through processes of visioning and speculation, visions, expectations, and images – that I will use interchangeably – allow the representations of designs, processes, and systems that yet not exist. Berkout et al. (2006) describe the relevance of visions as expectations, anticipatory spaces of possibility that frame issues and bind together human processes and groups. Despite their close relationship and relevance, visions of technology and images of the future aren't the same.

Due to the situated perspectives on the constructions of images, these are a manifestation of knowledge that can be analyzed carefully. Images produce traces in the world in texts, diagrams, representations, maps, pictures, videos, stories, and other forms of media to communicate these perceived or desirable states of a system. When I refer to a perceived state of a system, what in STS is described as an "image of technology," and when I describe "desirable," it is the expected "vision of the future." For the same reason, Visions of the future are epistemic and situated artifacts entangled with technological paradigms in their elaboration. This underlying

connection is central to explicitly interrogating the relations between the future and technology.

Dominant and hegemonic visions of technological futures exist around the world. (Coronil, 2011) Latin America is not a place that usually looks in search of visions of the future; it is perceived as a place where the future is not happening. Many future and science studies scholars describe as a structural element the lag or backwardness of technological cultures in the region (Herrera, 1973; Sagasti, 1989; Sagasti, 2004; Bitar, 2014). Science and Technology Studies have centered their attention on places of production of New and Emerging Technologies (NETS) to study images of the future, such as environmental regulations and incentives around the European Union or the US (Sovacool et al., 2020)— Latin America as a region that rarely is highlighted for its contribution to emerging technologies. In the last century, techno-centric visions of the future are scarcely located in the region, characterized by dependent, technological colonialism and precarious and negative perceptions about new technologies, as Diaz-Morales, Mora Solano, and Soto Kiewit (2018) who report for Costa Rica in a national survey are still being manifested in Latin American people. However, not being a protagonist in emerging technologies doesn't imply that you can't be a pioneer in visions of the future...

In this piece, I review popular media in Latin America around emerging technologies to explore the question: What elements characterize the images of the future in public media about emerging technologies in Latin America? Two cases are explored: the application of robots in the Southern Cone (2018-2021) and the implementation of Bitcoin in El Salvador (2020-2022) through a case study based on a selection of available local and regional press.

The first case is relevant because these countries are also selected for being usually used as “test beds” for the appropriation of other technologies in the region and their high level of academic productivity in relevant areas of expertise such as the economy and computer science. In addition to bringing much media attention to the small Central American nation, the second defies our assumptions about the economic and technical transition. Current hegemonic visions of capitalistic futures tend to be located in other contexts and presuppose a futurelessness of money that cannot be contested by peripheral actors (Skotnicki and Nielsen, 2021). El Salvador’s experience has led to substantial positive and negative reactions from diverse institutions in El Salvador and the rest of the World to challenge our assumptions about the future of capital and development.

On situating futures around emerging technologies in Latin America, I expect to contribute to the conversations about technological futures’ intellectual and political value to understand technological cultures. The piece is organized as follows: An initial section introduces definitions, differentiation, and dynamics of visions of technology and the future. Then, the methodological section describes “dissection” as an analytical strategy for exploring images of the future within socio-technical systems. The following two sections describe the findings for each case, framing the situations, describing the systems based on the media materials, and describing the images of the future found in them, in the order of El Salvador’s Bitcoin Implementation and Robots in the South Cone. The subsequent section discusses the results in light of the relations between technology and future of this kind of analysis. A conclusion summarizes the main elements of this exploration and further questions in the critical study of images of the future/technology.

## **Visions of technology and future.**

Visions of the Future are epistemic and situated artifacts for change-making. These use past and present knowledge to envision alternatives in the future. This plural and temporal orientation doesn't exclude that anyone can produce them yet not interpret them properly. Images of the future are unevenly distributed worldwide (Gibson? 1993). Since its popularization by Frederick Pollak in 1961, the concept has been central for Future studies to articulate different representations of a society and its aspects and orientations into the future (Ferganani, 2021). Images of the future can be produced from signals—predictions, forecasts, and scenarios by individuals and organizations based on present information in a given time and place to inform, advocate and anticipate future states of a social system.

Images of technology refer to mental models that different people articulate about a technological system. Science and Technology Studies scholars (STS) have given this concept less centrality than their Future Studies counterparts. Nevertheless, visions of technology are popularly shared in media (Goldman, 1989), articulate technical consensus (Joergues, 1990), inform relations of systems in action (Suchman, 1993), and inform sides and perspectives around a controversy (Wisniosky, 2012). In the case of technological visions, the essay "This is not a pipe," an aesthetic analysis by Foucault (1983) of the work of the also French painter Magritte, helps us to understand that concepts and representations are subjective and situated in previous knowledge. Images of technology emerge as concepts but vary for the degree of expertise – or permeating within the system's operation that supports such technology – how we envision a device, artifact, or process. The author Richard Rhodes (2012) collected visions of technologies as quotes from the 20<sup>th</sup> century US, as popular voices



that informed the arrangements of the systems we live by and inspired actions for better futures (for white, able, male-centered, urban and privileged people in most cases, or also dominant and hegemonic visions of the future). For works like this one, we might assume that visions of technology are universal and socially accepted.

However, visions of the future and images of technology aren't universal. Each people or community can create, engage or reject them at any moment. Visions are contingent, messy, incomplete, and even contradictory. Yet, allow us to convey complex meanings through envisioning processes. The same artifact simultaneously will have different visions when situated in time and place. Varvsavsky (2013) described these ontological and operational differences as "Technological styles"; similarly, Hughes (1983) describes them as "style" for large-technological systems. "The style of each system was based on entrepreneurial drive and decisions, economic principles, legislative constraints or supports, institutional structures, historical contingencies, and geographical factors, both human and natural." (p.462) More recently, Hui (2020) introduced the notion of techno diversity as cosmo technics to reintroduce the understanding of technologies (and their embedded futures), challenging universalistic and absolute assumptions. Technologies and their futures in that way need to be situated.

Socio-technical futures connect technoscience's potential and prospects with emerging social arrangements. (Konrad and Bohle, 2019; Lösch et al, 2019). Sociotechnical futures are instrumental in approaching how technological systems make the world in particular ways, appreciating the interdependent agencies that peoples and things make and do in the world. Yet, STS has integrated futures in their studies through the analysis of expectations (Brown and Michael, 2003), anticipatory

governance (Guston 2010, 2014), and socio-technical imaginaries (Kim and Jasanoff, 2009; Sismondo, 2020), with limited acknowledgment of the traditions of Future-thinking from Future Studies, as well without a systematic integration of a socio-technical systems perspective on the production of future.

Because these images change over time and place, those traces can be found in different contexts, professionally and socially. Images of the future and technology are not a definitive perspective but an early manifestation of human needs and desires; hence, they are central to any technological endeavor. In that way, the negotiations, circulations, and embodiments of images in our world are central to STS literature. I acknowledge that everyone has a different entry point for different socio-technical systems. Despite the obviousness of this statement, I often find that how we talk about technology and the future of our counterparts has a similar perspective. Carefully acknowledging the traces must be done to situate images of the future and technology.

### **Methodology.**

To observe Latin American images of the future, I did select two cases of interest in which merging technologies of the 2020s are being deployed in the region: The implementation of Bitcoin as legal currency in El Salvador (2021-today) and the production and use of robotics in the south cone (Argentina, Chile, and Uruguay, since 2018-onwards). A methodological split must happen to distinguish which elements are the socio-technical structures we're rebuilding our speculations. In that way, the methodological work of this article is detailed below. Both cases are of my interest because they aim for desirable socio-technical futures: In the case of El Salvador, the promise of a cashless and more prosperous society by decentralized money; In the

case of robots, an increase in efficiency and safety of production processes through the use of technical capabilities to automate.

To study situated images of the future and technology, I propose a method called “dissection.” Dissection is a method to capture and study images of the future and technologies within socio-technical systems. Dissection entails the a) capture of relevant vision traces, b) the reconstruction of the socio-technical system from the visions, c) the identification of images of the future within the socio-technical system, and d) the display of the speculative elements from the analysis.

The method of dissection is inspired by other interdisciplinary methods (Lury et al., 2018), especially future-centered approaches such as Alex Wilkie’s speculating (Wilkie, 2018; Wilkie, Sarvrasky, and Rosengarden, 2017), which use speculation to explore and provoke through the power of imagination with objects, devices, and ideas that explore inventive and anticipatory knowledge. Dissection drew from multidimensional analysis of socio-technical systems and their capacity to inform us about global and local futures (Lindner, Anderson, and Dourish, 2012; Sovacool et al., 2020), the systematic exploration of sources to identify images, stories, and imaginaries of the future (Fisher and Mehnert, 2021) and the interdisciplinarian integration to place and situate futures for the critical appreciation of their effects in communities at different scales (Haraway, 2015; Parrika, 2017; Conn & De Seta, 2021), contributions that came not just from Science and Technology Studies, but also from Science Fiction Studies, Media Studies, and Future Studies.

In that way, I collected documental traces from each case to capture the images of the future and technology. Due to the research context around the COVID-19 pandemic, selected traces came from digital media and documentation available on government and business websites. For El Salvador's case, traces are 50 digital news from Salvadorian and Global newspapers from June 2021 to December 2022 and 30 digital pieces from January 2018 to December 2022 for the South Cone case. These materials were selected considering their relevance to the topic, incorporation of opinions or quotes from critical actors, diversity of perspectives, and details about the embedded processes in a defined timeframe. These traces were found in Spanish and English to triangulate different views about the same cases and ensure that despite the geographical locality of these technologies, multiple perspectives were attended. In addition, official documentation from programs, regulations, and reports was considered for the story triangulation.

The analysis was twofold: First, I elaborated a codebook on a series of descriptive categories that allowed me to identify actors and relations between them, such as people, places, artifacts, regulations, and institutions. The different actors were approached by a deductive strategy, following the definition of the element and finding it in the source. These categories then identified some relations between actors from the text and their connections through the annotation of rhetoric strategies that described an interaction between actors in these pieces and actors among the system that each case configures (inspired by Sovacool, 2020, p. 644). These descriptive categories were analyzed using MaxQDA2022 as a supporting tool to systematize this content analysis and produce a synthetic visual representation of the socio-technical system.

An important distinction is that textual traces – or selected segments in the media – were descriptive when referring to past or present elements, often contrasted by other secondary sources such as national reports and regulations. This work to tune the relations between actors and interactions is similar to what a polarizer makes to a light wave. The vectors of action (past/present or future) are critical differentiators between a socio-technical system's current and upcoming manifestations. In that form, some actors identified might be in the making or mere speculation, constituting Future-oriented and speculative elements among the emerging system. Those were treated differently because these hint at the future dimensions of that system.

Those different interactions allow the observation of the tensions between present and future elements, which a subset of elements configure a vision of the future within a socio-technical system. The central element of these systems is identified by the recurrence of the actor on the sources analyzed, as well the number of relations of them with other aspects. That central element plays a critical role in the desired future, yet the visions of the future are still plural and diverse.

The second part of the analysis of the same traces identifies emerging categories of future-making that converge around the case. Those do not correspond to pre-conceptual categories that helped to understand the socio-technical system or regimes within the documentation but to generative tensions that appeared around what is possible, desirable, and achievable for that socio-technical system in that place. These are the images of the future that are underlying the system. Said categories were collected inductively by similarity and then labeled on emerging themes and given special attention to forthcoming and future elements of the system.

Those emerging categories conform to the collective images of the future that interact within the current systems, “ping” some aspects of the socio-technical system in different directions. Those visions of the future might converge (when they align with the desirable future) or diverge (when they resist). In that form, the diagram first displays a socio-technical sketch of the system, illustrating interactions and overlapping visions of the future that orientate different interests around stabilizing that emerging technology.

Dissecting acknowledges that socio-technical actors are speculative, acting over the system through future visions. Those actors and relations are not yet in “how things are” but instead potential state in “how things might be.” Those elements are highlighted at the edges of the socio-technical representations and account for future-driven dimensions that the emerging technology has been and is doing on the system. This dissection method aims to make studying socio-technical futures more transparent due to the focus on situated knowledge (contingent, limited, and contextual) that the selected trace allows. It clarifies which things are “present” on the system and what images are “pulling” those systems in different directions professionally. Images of the future are vectors of change in a system.

The following two sections will apply this to the cases of El Salvador’s Bitcoin transformation and the implementation of robots in the South Cone. As indicated, each case differs in scope but centers on territorially bound socio-technical futures in action for a nation or sub-region. Each case will be presented based on the results of primary sources unless other is indicated for direct quotes or supporting materials.

## **Case Study I: Bitcoin in El Salvador.**

El Salvador is a Central American nation that has been led since 2019 by Najib Bukele, a right-wing and charismatic populist leader that has committed to transforming its country. He's very vocal and committed to transforming his country by "getting rid of corruption within the system." Among multiple policies, in June 2021, he stormed the globe through this Twitter account, announcing that he is advocating El Salvador to be the first to make Bitcoin, the most known cryptocurrency, a legal tender in his country, making it the first in the world with this kind of regulation. Until that moment, El Salvador was a dollarized country. To confront the country's hyperinflationary process during the 1990s—in 2001, eliminated its national currency to pick the dollar as its official mean of exchange. The future has been central to this proposal, having multiple images converging in leading a "crypto revolution." Around 20% of the national GDP came from remises those emigrants sent to their families, mainly from the US.

Understanding this transformation from a socio-technical perspective, based on the selected sources, produce a diagram where Bitcoin, Bukele himself, and a nationally sponsored digital wallet called Chivo centralized the interactions with the elements of the system. Figure 8 illustrates the main elements of this transformation.

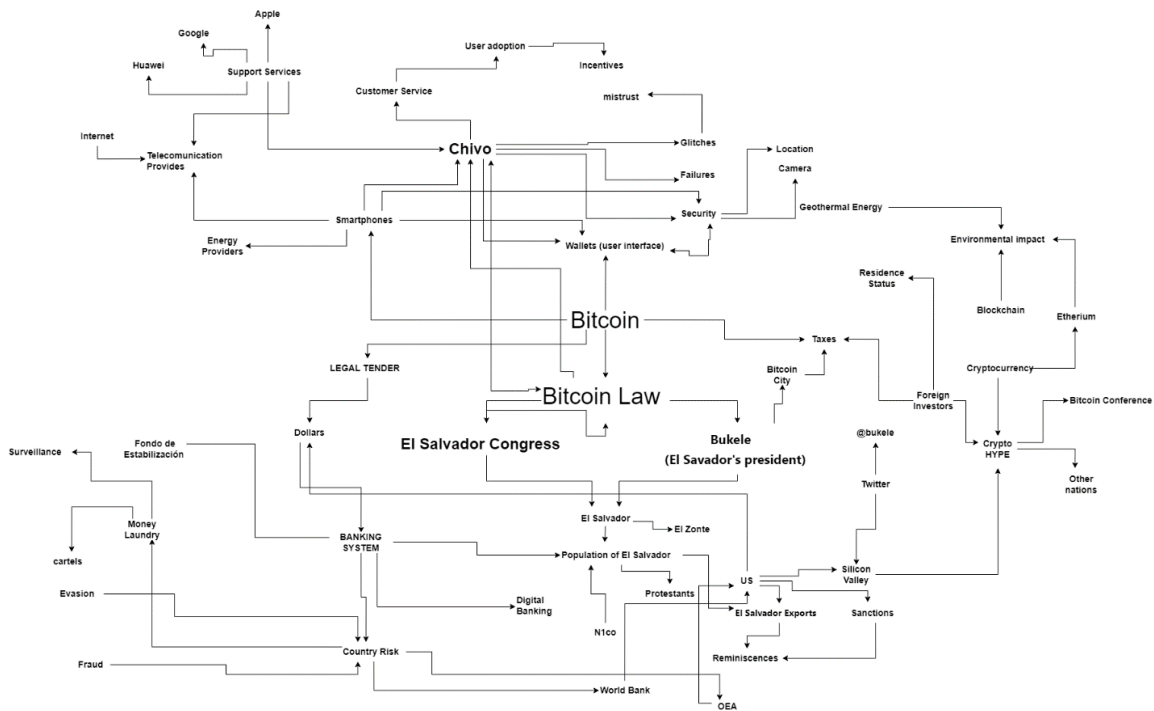


Figure 8. Socio-technical diagram of Bitcoin implementation in El Salvador. Arrows and relations connect different elements of the system in a relational form. The number of elements was limited to 75. (Source: own elaboration)

On this system, we can observe different elements, from the technical and regulatory aspects around the Bitcoin Law, the main instrument to enforce this transformation, which was approved in less than 72 hours after Bukele’s proposal to the national Congress. The law had very little detail about the implementation. Still, it incorporated a series of elements to frame a rapid transition, expected to happen just three months after the approval of this regulation. In the upper area of the graph, it’s possible to observe the technical elements around the Chivo app, including its users, energy and telecommunication providers that are necessary for its functioning, as well as some reactions to the ill-design that this program had, that produce multiple failure and glitches that barely were compensated with a 30 dollars incentive for new users.



The lower section of the diagram concentrates on the financial aspects around this process, from the national banking system, a stabilization fund that supports the government investment in this process, the risks of tax evasion, fraud, state surveillance, and money laundry, that a rushed process like this has been criticized, as well international institutions such the World Bank, which has advocated against this policy and its implementation from the beginning.

The right section of this diagram incorporates external elements that are associated with the physical and virtual implementation of the Bitcoin Law. Bukele has been particularly vocal about this, but not to their citizens after this law's approval. In an event in Miami, Florida, he presented the plan for a Bitcoin city, a crypto paradise powered by geothermal energy that will not have local taxes. Even some reports highlight migratory incentives to foreign crypto enthusiasts that decide to support this project and commit to moving in there. That fueled the "crypto hype," or media cycle in platforms such as Twitter and Discord from crypto enthusiasts, with little participation from the local Salvadorians. One mild exception might be El Zonte, a coastal town that received 2017 a generous donation of \$10000 US Dollars in Bitcoin and turned this place into a test-bed for adopting Bitcoin in El Salvador. Despite the community fame, most reports show how a limited amount of people in the country have found it helpful and keep using Bitcoin in their daily transactions.

In that way, this socio-technical system illustrates normative, technical, social, mediatic, and political salient on the process of the Bitcoin Law in El Salvador. This process promises an economic transformation of El Salvador and which, during the first year of implementation, was slowly losing traction, despite the unconditional government support. Alex Gonzalez Ormedod, from Rest of World, has characterized

the populist effort of El Salvador’s government as “Bukele is sticking to his Bitcoin guns and working on doctrine handed down by maximalists — people who believe that despite the peaks and troughs, crypto is humankind’s unavoidable future” highlighting the dominant future-orientation of this process for the Central American nation.

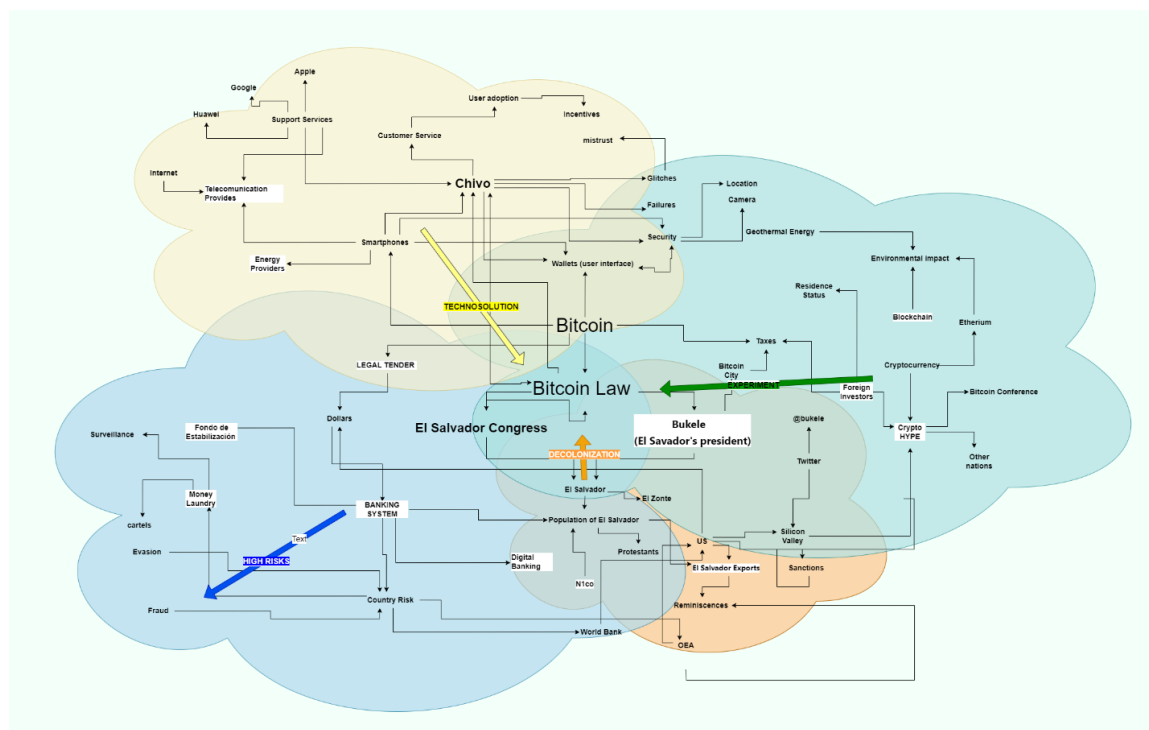


Figure 9. Overlap of Images of the future with the socio-technical system’s representation of the Implementation of Bitcoin as legal tender in El Salvador. Each color describes an image of the future emerging from the actors around that area of the system. Images overlap in the center section, yet four future images were identified and labeled as follows. Yellow: Technosolution, Green: Experiment, Blue: High Risks; Orange: Decolonization. (Source: own elaboration)

However, that future is not singular, and based on the documentation analyzed, I can identify four entangled different images of the future, illustrated in Figure 9. These futures can be articulated as Techno solutionism, Experiment, High Risks, and Decolonization:

- Bitcoin is a techno solution to economic disparities. This optimistic vision carries the possibility that Bitcoin will solve economic disparities of Salvadorians, increasing bancarization (access to banking services) and decreasing exchange rates for remises. The government has been a particular advocate of this vision and has observed little and incomplete justification for the Bitcoin Law, repeated by government officials and representatives and supported by a technical enthusiast in the nation. This vision is contested by some entrepreneurs, such as the creators of n1co, a digital banking app that has surged in adoption in the failure of Chivo Wallet.
  
- El Salvador is a significant economic experiment about the reliability of Bitcoin as the national currency. International sources, such as Caribbean or Latin American economic experts, have reproduced this ambivalent vision. Using tax-payer money to buy cryptocurrencies has been considered dubious and potentially corrupt. Some nations, such as Namibia, Bangladesh, and Paraguay, have also seen it as an opportunity to learn of the potential success that El Salvador may have with Bitcoin to reproduce similar policies in their nations. Speculative regulatory elements such as the residency reform to bring international investors and the potential construction of Bitcoin City are also part of this future vision. Yet, Salvadorians that also describe this process as an experiment include the caveat that the future doesn't include them and is made to attract foreign investment and international attention.
  
- Implementing Bitcoin as currency creates huge risks to El Salvador's stability. This pessimist vision of the future characterizes the process from

the perspective of a political and economic collapse in a nation with a weak economy. International institutions such as the Interamerican Development Bank (IDB) and similar have called to rescind the regulation and return to the previous economic regime. In addition to the normative risks, the potential of economic crimes such as tax evasion, money laundering, international fraud, and platforming crimes of cartels and other criminal organizations are part of the risk of this socio-technical process. This future vision is often brought for institutional actors abroad in a highly homogenous political sphere – dominated by the President’s political party in the parliament, justice, and executive branches.

- The Bitcoin Law will decolonize the economic system of El Salvador, reducing the dependency on the US. This delinking vision of the future advocates for a new economic relationship with the US, the leading economic partner of El Salvador. Due to the high immigration of Salvadorians to the US, Bitcoin is portrayed as a way to build a different future in that family members can develop their talents locally. Using Bitcoin is described as a transformative force constructing new development capacities in the country without international interventions. This one is also connected with the possibility of considering cryptocurrency as a way to dedolarize the country, departing from their current economic regime and making any future economic sanction that El Salvador’s government may receive less effective from this or any other populist policy.

These four visions may be reminiscent of Dator's four future archetypes or two-axis scenarios. However, each had intrinsically positive and negative dimensions depending on the perspective that avoids constraining them into archetypes or two dimensions. Salvadorians are centered on those related to techno-solutionism and decolonization and are displaced from this system's experimental and risk-centered future images. In that way, local and global perspectives envision different possibilities agglomerated in these four categories. We can observe in Figure 9 how the vision of the future selectively engages with some different elements. The colored arrows also represent directions of change, being oriented to the center, those elements that converge the centralized government interest towards Bitcoin and towards the borders of those that move away from these interests. All the detected images are speculatively interacting within this system, in favor or against each other, to advocate, materialize, dismantle, or resist those possible futures around this project.

More implications about these results will be included in the discussion section. The following section explains a sub-regional case that will also help to understand the value of this methodological approach for technology and future vision integration.

### **Case Study II: Robots from the South Cone.**

This second case focuses on the configuration of robotics in the South cone. Some elements justify an eclectic articulation, with robots not framed on a national border but on a sub-regional agglomeration. According to the International Federation of Robotics (2022), Latin America is a region that has increasingly adopted robots in different processes in the last decade. However, their scientific output in the area is reduced and has limited capacities. (Senkar, Shar, and Iswanto, 2022). In addition,

the success of young scholars and students in international robotics competitions, such as RoboCup and First Lego League, contradicts this professional lack of capacities. Since 2012 a surge in robotics training and competitions in Uruguay, Argentina, and Chile has propelled increasing attention in the field of automation engineering. Yet, the manifestation of robotics seems to be different from the popular envisioning or the expectations of the World Economic Forum in the Fourth Industrial Revolution, also called Industry 4.0.

In that way, the analyzed sources help to observe how dominant visions of automated futures are portrayed in sub-regional media. Automated futures as imaginations that engage with labor transitions through digital transformation, such as the ones described by Schwab (2017) or studied by Pink (2022), doesn't necessarily align with the vision of Sudamericana robots founded. Nevertheless, Latin American people tend to be hopeful about using robotics in the region, not necessarily about their local development. Marroquin and Saravia (2022) report, based on an analysis of the regional survey Latinobarometro, that people with positive views about robots tend to be male, single, more educated, and trust others. In addition, the use of robots in the health sector is supported by people in the sample.

For that reason, I did focus on reports and news of robots being created and or used in these countries. Figure 10 represents the main elements around robots in the selected media sources. The first element is that the notion of the robot is polysemic. The imagination of robots is strongly informed by media and science fiction rather than local technical capacities. Many sources incorporate speculative and narrative elements in their descriptions, particularly on the future of job aspects. That ambivalence between technical and speculative characterization is represented by this central ring

surrounding the concept of ROBOTS in the diagram. A primary difference with the previous case is that the central technological vision seems deeply stabilized and informed by popular culture, which simultaneously distorts local understandings and public conversations by assumptions extracted and reproduced by popular media. The diagram has a central cluster that also disengages internal characterizations of robots from the local uses and reference of robots among the three countries because the sources show a powerful dualism between more technical news and reports and those focused on the impacts, potential, and uses.

Externally, the system is a composition of 14 different robots used in at least one of the three countries, radiating as a second level in the diagram surrounding the concept of robots. The relation also shows the disengagement between technical characterizations and sector-centered characterizations of robots. Reports tend to contain one of these perspectives: technical characterizations of development, innovation, and functioning or successful applications or uses of robots in different contexts. The relevance of this is that the conversation of robotics is scattered around its application areas and not a coherent process of national or regional automation, illustrating a diverse stage of technical interest and development depending on the economic activities involved.

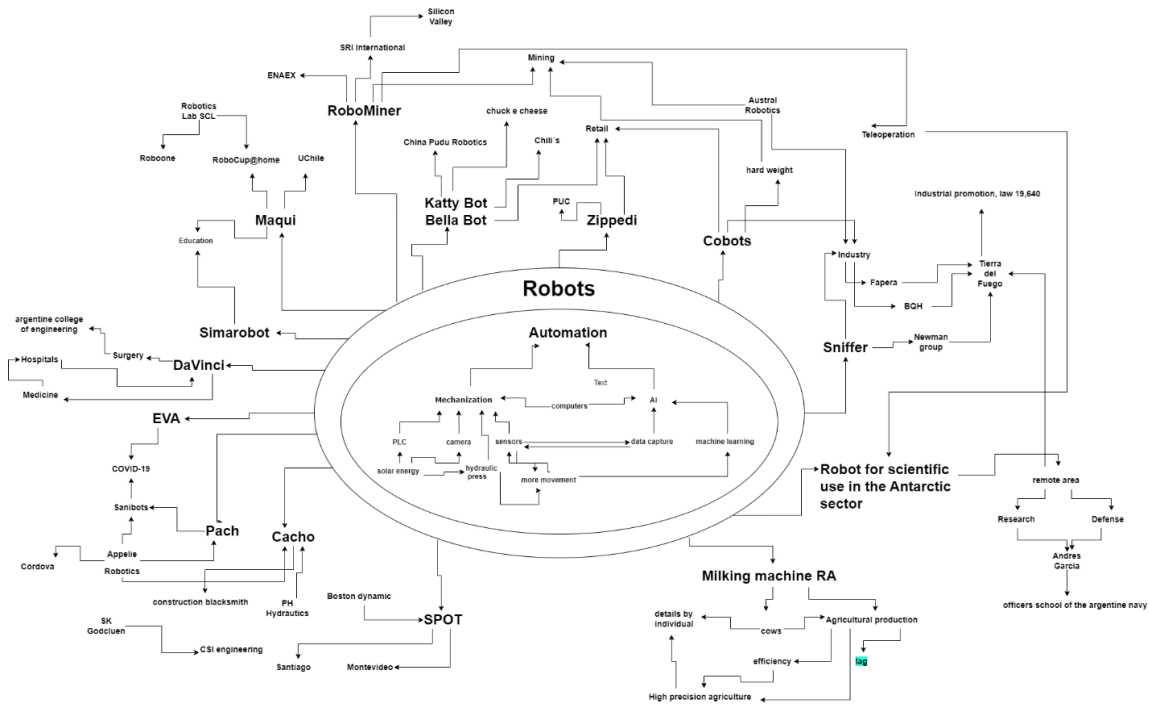


Figure 10. Socio-technical diagram of Robots in the South Cone. Arrows and relations connect different elements of the system in a relational form. The number of elements was limited to 75. (Source: own elaboration)

Among the 14 robots included, these have different origins. For instance, in recent years, Cacho and Pach are “Robots Argentos,” developed from a robotic spin-off from an architecture firm in Cordova, Argentina. Other cases had limited specialists, such as the Milking Machine RA implementation, which has been supported in some farms in the three countries by a single specialist from Uruguay, or the Antarctic scientific EVA research robot, which has been a creation by an inventor in Argentina defense official school. The areas where robots are used in Chile and Uruguay are not dominantly manufacturing industries, as is usually depicted in automated futures.

Instead, robots to support extractive industries in the agro-alimentary and mining sectors seem to be the main focus of innovation, with many service-related robots in retail, education, customer service, and medicine. An exceptional case seems



to happen in Tierra del Fuego, where Argentina's local regulation has encouraged industrial automation. Cobots and sniffers have recently been a recent addition to Patagonia's microwaves and air conditioning factories.

Another element of this diagram is the strong presence of private partners and international firms in these developments. The role of government looks pretty restricted, and incentives for robotics development appear to restrict the training of younger generations. The main productive actors for the observed robots are Chinese and US companies that provide robots incorporated and tested in the region for different uses. Local experts seem to have a role in adapting and appropriating the technology in context, capturing data, and tailoring specific codes to update the base programming of the system for local needs. For instance, SPOT, the robotic dog developed by Boston Dynamics, is only present in Chile and Uruguay in the region at the moment of this study, which has been able to be used in monitoring tasks. The media coverage of SPOT in Uruguay was high, probably supported by a media campaign from the construction company that acquired, generating company leverage just for using a robot in their building sites. Robots are shown as a novelty that is foreign to everyday life, despite other domestic robots – such as the Roomba vacuum cleaner – being easily accessible, despite its high price, to many people in these countries in 2020.

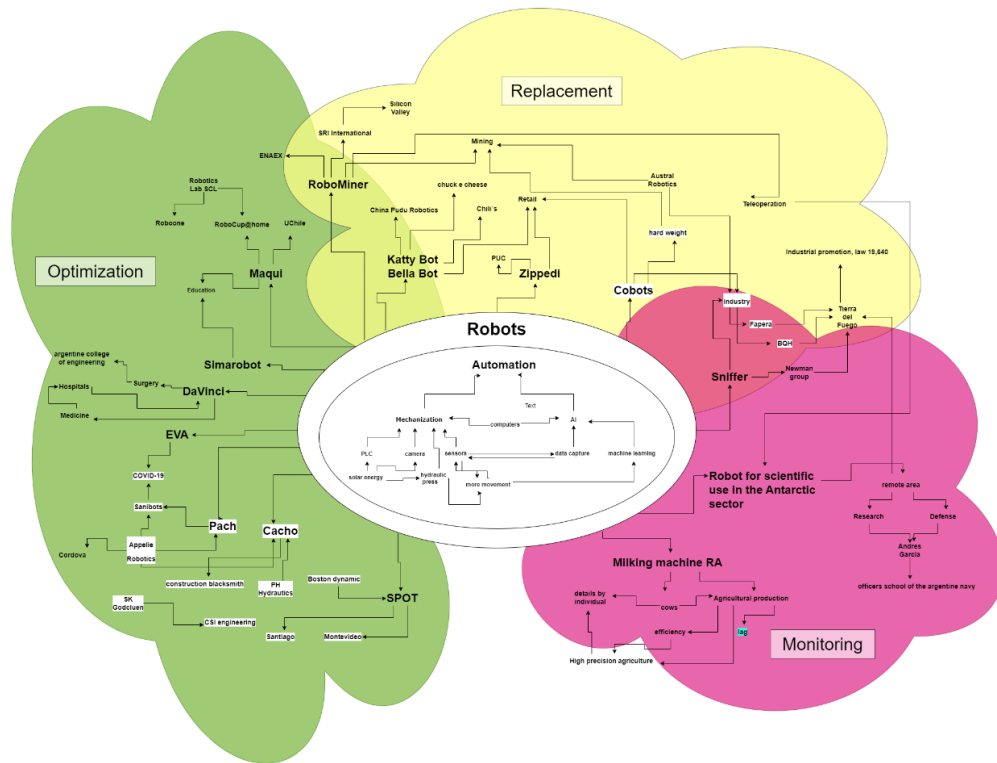


Figure 11. Overlap of Images of the future with the socio-technical systems of Automated futures. Each color describes an image of the future emerging from the actors around that area of the system. In this case, the central section has to keep isolated from the powerful imaginations that the notion of robot possesses in the popular imagination, that in the sources recurrently seems disengaged from the local process. Three images are identified and labeled as follows. Green. Optimization, Yellow: Replacement; Magenta: Monitoring. (Source: own elaboration)

Figure 11 illustrates three images of the future detected around this transnational socio-technical system, an ecosystem of experimentation and testing for the region in using and creating robots. These images of the future are identified as replacement, optimization, and monitoring. Some industries or devices are more prone to some of them on the selection, as expected by robotics perception described in Latin America until the moment. In addition, the robot's perception is less affected by local visions of the future. Based on the analyzed sources, the notion of robots and their

influence on the region's future seems disconnected from local capacities and projects. In that way, these images of the future are constrained to industry experts in robotics. Despite describing start-ups, prototypes, the first unit, or experimental pact, many sources overstate that robots impact or highlight their transformative potentialities. For that reason, the visions of the future co-exist with a rich imagination of robots that seems barely grounded with the future visions about what robots can make in the South Cone.

- Robots will (or are) replace human labor, eliminating disqualified or obsolete workers from their positions. A hegemonic vision of robotics futures, deeply informed by international reports and popular media. This vision is reproduced in cases of manufacturing and retail activities. Despite its popularity in public conversation, it seems less prevalent among the studied sample. This vision of the future drives fear of uncertainty. However, the restaurant host and waiter robots KittyBot and BellaBot tested in 2021 and 2022 in Santiago de Chile were perceived as a complement to regular operations and humanized by customers giving tips captivated by their efficiency, according to reports. In Patagonia, where cobots are being used for industrial processes, these are described by workers as helpers in their operation, taking riskier tasks like lifting heavy weights and decreasing safety issues. In that form, this vision of the future is contradicted by local testimonies, yet strongly supported by journalists and media, that frontload labor loss in many robotics reports and news for the analyzed sample.
- Robots optimize human activities to make labor more efficient, safer, and fun: A future vision that describes robots as companions incorporated into

the tasks and social dynamics. According to my analysis, this perspective is mostly claimed by company owners, project leaders, and technical specialists who advocate for the responsible use of robotics. Teen and young professional competition robots are also in this image of the future, describing engagement with robots as a learning opportunity. The companion prototype Maqui, developed by the University of Chile students in 2018, got third place in RoboCup@Home. A similar case can be seen with the Uruguayan implementation of SPOT for construction and Cordova's company Applelie Robotics, which has developed construction, medical, and retail robots in the last three years.

- Robots are devices to monitor services and activities that are hard to maintain. This image of the future includes projects such as the Antarctic Scientific Research Robot, which is expected to be able to sustain observation in the Winter when it is hazardous for humans to be on the continent. Also, the case of the Milking Machine RA, implemented in some Argentinian farms with the support of an Uruguayan consultant, aims to decrease the complexities of large-scale milkers, offering more flexible and compassionate methods for bovines. The automated system is highly efficient because it offers animals the chance to go when "they feel ready" to get milk extracted. That level of attention to each animal is not something that most companies can offer to their workers, using the robot to increase productivity through the self-management of the animals. In addition, they capture large amounts of biometric data of everyone to follow health indicators and other risk factors hard to grasp by humans during the extraction process.

Visions of Robotics futures in Argentina, Chile, and Uruguay have some level of coherence, despite being different nations—the emerging sub-regional ecosystem of shared capacities and convergent market dynamics for professional and domestic applications. One reason is the similar technical capacities often shared regionally among industries and academia. Robotics is an area that increasingly caught the attention of the media. However, it is still a very niche technical area. The lack of humanoid robots, like the ones in speculative fiction stories, among the selected news also illustrates a recurrent connection between popular imagination and local visions of the future. Some sample materials included policy or economic opinions, which rely on unsituated images of the future referring to the implementation of robots, such as the potential effects of RoboMiner of Enaex for the whole industry. Another observation is that the local robotics industry is surrounded by other automatic systems that are not robotics, such as AI chatbots or other mechanisms, hadn't conveyed a proper definition of a robot, disrupting the public discussion about robotics with another emergent phenomenon that is not doing what is claimed.

### **Implications of Dissecting Images.**

In this section, I will argue why how both cases deploy a compelling strategy for the analysis of local futures visions within socio-technical systems, looking at the emerging relations between images of technology/future, the relevance of the speculative dimension of socio-technical systems, the relevance of analyzing Latin American images of the future and the methodological limitations of this piece.

### ***Emerging effects among images of future and technology.***

In the previous two cases – El Salvador’s Bitcoin and Southern Robots for short – the characterization of the socio-technical system was captured from the popular media and resources. Elements that are brought to the stories and news are actors in the ongoing processes that those socio-technical systems in these places have. El Salvador’s case shows that not all elements exist materially in a socio-technical system at a given moment. “Bitcoin City” is a primary element of El Salvador’s Bitcoin future, advocated by its president. Yet, no document nor resource does enact it as part of the system. Instead, it exists as a speculative element on the network and supports relations with other material and semiotics actors that interact with it, as well as with the image of the future – of Successful experiments to make El Salvador richer with Bitcoin – that is part of.

Considering that each element on the diagrams is an image of technology –the Chivo app, the dollars, or the President himself – the contested visions of the future compound an overarching imaginary about El Salvador as a pioneer in a techno-economic revolution. Yet, a cashless society in El Salvador – a socio-technical imaginary? – suppress the dynamisms of future visions in this process and may collapse the richness of speculative elements from its diverse visions. The struggles and interactions with cryptocurrencies have made El Salvador a global actor in this market and challenged the values and assumptions – of freedom, privacy, and non-state intervention- that Bitcoin possesses as technology. Those dynamics are recovered when we deploy the socio-technical system and its vision and do not articulate its imagination as a discursive process that drives change.

Technological visions also offer the chance to observe different kinds of interactions with future visions. Some elements of a socio-technical system may interact with supporting, rejecting, or scaffolding processes in achieving futures and a socio. A socio-technical analysis helps with intervention for the different competing visions of the future. Let's observe how some system elements interact with the future visions in El Salvador's case. I will introduce some typology around the interactions, which is interesting to consider for the interpretation between socio-technical actors and images of the future.

Initially, the existence, distribution, and reliability of telecommunication networks in El Salvador are crucial to maintaining the digitalization of finance in the country. I interpret that it produces an **agonist effect** on the vision of the future intended in that sector – of techno solutions for the debanking of the citizens, which telecom companies are driven to offer better support for Salvadorians. Similarly, lower digital literacy among citizens has been pointed out as a primary challenge in implementing Bitcoin in El Salvador, especially among the elderly population who might own a tiny business in a city or town and now is forced to accept Bitcoin for transactions. The digital literacy of the citizens is having an **antagonistic effect** on the visions of the future, increasing risks and making convergent images of the future more unfeasible. A final kind of relation emerges of supportive systems that are critical for the technological transitions needed for any combination of these futures visions to exist; that can be observed with the banking and electrical systems of the country, which despite not being centered in the emerging technology, require to work correctly to supply of dollars for money conversions and transactions around the country and keep working to power computers, antennas, and smartphones capable of operating

Chivo app, a vital element of this project. The banking and electrical infrastructure operate an **allosteric effect** that supports and maintains the emerging Bitcoin socio-technical system.

These relations – agonistic, antagonistic, and allosteric – are observable when we dissect the images of the future from the images of technologies in a socio-technical system. Detecting these relations between technology and the future informs a more nuanced and detailed characterization of the situated dynamics of technical objects and expectations in action. Both cases allow an appreciation of the assumptions and interactions that sustain in these geographies these technologies because not all images of the future are the same, as the contrast between hegemonic images of automated futures and the south cone cases illustrate.

Future visions that frame and drive actions around these change processes are not coordinated. Yet, these diverse perspectives allow me to follow some of the relations between the socio-technical elements and their connection with intended images of the future. In my perspective, when we neglect to identify the relations between technologies and the future, we can easily rely on technological shortcomings – universalism, determinism, dependency, solutionism, and privilege (exclusion), among others – to interpret a complex ongoing technological process.

### ***Speculative dimension of socio-technical systems.***

As I mentioned, images of the future are never entirely achievable, yet they are fundamental to coordinating action and change between actors. Yet, socio-technical systems carry the images of the future that were present in their design, use,



operation, and elimination as a tiny ontological potential that also defines its interactions in the future- The fact that both cases central technologies have been dominantly adopted mostly by affluent young men in Latin America have to do with the expectations and assumptions of these systems from their origin, and the effects that the elements of the socio-technical system made in the local imagination. The images of the future that I was able to detect inform not just policy or organizational decision-making (a central function of visions) but also characterize the perspective in play for local transformation that is present at the moment that characterizes these technologies in their respective contexts based on the resources analyzed – in this case, a diverse collection of news and reports about each process –

The process of dissection of technology/futures visions contests the sensation that the future is monolithic, universal, and path-dependent. As I illustrated in the previous figures, these images of the future exist around arrangements of elements in a system and co-exist with previous knowledge – the image of technology each person has. As an image, it's contingent and flexible. Yet, different people will position in a socio-technical system from different elements a different element, making them part of different speculative dimensions around what is possible, desirable, and doable around that change.

The South Cone Robots case better illustrates the difference between speculative dimensions in a socio-technical system. Despite all cases referring to the implementation of robots in the South Cone, people involved in educational, health, or construction sectors applications strongly rejected the envisioning of replacement that dominates public conversations around robotics. Instead, they advocate for robots as companions of human processes, and their designs, framings, and performance

reported in the sources displayed the collaborative and synergic interaction between humans and robots.

People not connected or interacting with a socio-technical system will carry images of technology informed by popular media. In that case, most pieces reproduced assumptions of humanized robots and catastrophic narratives in human-robot interaction, even when devices were used for scientific purposes. The dominant view of robots reinforces de-territorialized visions of the future that misinform the local process of change in each case and risk people making ill-informed decisions.

These speculative contradictions also have a theoretical effect: they extend our understanding of socio-technical systems from semiotic-material to imaginative-semiotic-material systems. For those who study and analyze technology in society, this exercise links visions of the future with local socio-technical analysis, explaining why sociotechnical futures inform a plurality of technological manifestations and offering a procedure to appreciate diverse technological cultures through the analysis of images of future/technology.

### ***Contribution of Latin America to future visions.***

The fact that both cases are from Latin America is not trivial, as mentioned in the introduction. Latin America is often disregarded as the site of socio-technical futures. Most literature in this area follows creators, makers, and processes in Europe, Asia, or the US. The understanding is that technologies emerge in their origin. However, technological emergence happens every time a community deploys a new socio-technical system for them (Wetmore, 2007). As recently indicated, the dissection

of socio-technical systems to identify critical images of future/technology informs about the emerging local technological cultures, styles, and cosmologies that sustain those change processes.

In the case of El Salvador, the Bitcoin Law has made them a key actor in the international scene to discuss cryptocurrency, in contrast to other nations such as China or Ecuador, which implemented their cryptocurrency years before to enter the innovations of digital assets, El Salvador disrupted – democratically and economically – with a public policy that offers more questions than answers. The low interest of Salvadorians in bitcoins or the low usage of the ill-design Chivo wallet didn't stop El Salvador from becoming a key player in global technology in just over a decade. Without a technical domain, this policy makes them draw new images of financial futures at the short-term expense of their democratic process and the distress of their people. However, if this populist bet results, El Salvador might obtain material advantages in possible scenarios where Bitcoin increases its value and wealth in the nation, simultaneously defying development, governance, and economics paradigms. This is the strongest desire for the best outcome of this radical's images of the future. For them is not to subvert a capitalist society but rather make capitalism work.

For the south cone robots, I looked at three nations testing and prototyping new devices and projects. Despite their implementation in different areas, I could perceive the fascination and fear that these new artifacts, all robots, are being reported. It's interesting to see how sub-regional networks of innovation enable different interpretations of the role of this technology and its future, that tension popular imagination from books and movies and defies international assumptions about the scope of work and its effects of robots for Uruguay, Chile, and Argentina.

The Monitoring, Replacement, and Optimization images shared a functional dimension: how they have been depicted and framed in media. However, automated futures that ground the scattered local capacities and experiences tell us how robots are being deployed in the region, with careful experimentation and humble phanfarrea among engineers, journalists, consumers, and workers.

Both cases share how emerging technologies and their futures radically enchant people in Latin America but also acknowledge their technical, social, political, regulatory, and imaginative limitations. In that way, I clustered visions of the future that tell us about what people are living and want to live with technology. The fascinating aspect is that when we acknowledge that technology is not an anthropological universal, we can embrace the plurality of perspectives that co-exist around imagination and its technical capacities to move closer to some of those. What makes Latin American visions of the future fascinating, in addition to their little understanding, is that they approach emerging technologies as something that doesn't fully belong to them, moving away from personalist or technological heroism. Technological futures are seen as dependent and mobile, acknowledging that futures are a collective process.

### ***Methodological Limitations.***

Finally, some methodological limitations need to be addressed in this piece. These have related to the kind of sources, representation, and interpretation of results that need to be articulated.

About the sources, capturing images of the future and technology from media sources has two main challenges. First, the sources might have biases and partial visions that are contrasted by large amounts of textual data, as is represented in the case of robots with this powerful division around the vision of robots from internalist and externalist perspectives backed in the sample. In that way, my sample contained 50 pieces for the El Salvador case and 30 for the South American one. Those numbers were achieved by tracking diverse sources for three months, discarding pieces that were too short (less than 300 words) or too promotional (such as opinion columns).

In addition, other media sources were consulted while framing the case. Still, they were not analyzed as part of the socio-technical systems, such as the case of YouTube videos, academic papers, or organizational reports that scaffolded the project but weren't analyzed. In that way, the socio-technical systems reported came exclusively from the aspects included in the sample. Some other existing actors or relations aren't included in them for the strategy selected. However, the corpus of news and reports was able to capture the dominant actors of the system, and it was triangulated with those other sources mentioned to decrease factual inaccuracies that may be common in news articles, which added very little information about the cases themselves and the relations with images of the future.

The representation of the socio-technical systems came from the elements detected as people, organizations, artifacts, regulations, and places. Yet, the relationship between them came from integrating these elements and their recurrence based on the analysis. For the complexity of a system, many elements were left apart, and the selection of 75 aspects came from the consideration of the recurrence in the analyzed data, relevance in the context of the case, and potential relations that helped

me to articulate the clusters found in the images of the future. In that way, balancing evidence and findings was critical in selecting and distributing the representations of the socio-technical systems described above.

Regarding interpretation, detecting images of the future is a process of careful capture. Not just the direct quotes to future elements compound an image of the future, and textual markers need to be used to track elements of futuring in the reports. Those textual markers have to do with future-oriented text, which incorporates conditional, public announcements, predictions, and counterfactual, often implicit. However, each cluster was merged as a commonality during the analysis and then re-named and characterized after all samples were collected in an emerging category.

Using news and articles to study the future requires a particular sensibility to weak signals and speculative knowledge for the case. Something else is that the images of the future described have stability and frequency among the corpus but might be slightly different for other analyses. Longer corpus might introduce other less represented visions of the future that, for instance, extend or contest some of the ones I found in both cases. It's important to consider that. Also, new facts might discard current visions of the future, making this a process that requires tracking to effectively intervene in a socio-technical system.

## **Conclusions.**

In this article, I did explore two Latin American cases to characterize the visions of the future embedded in the socio-technical systems from the use of Robots since 2019 in the South Cone nations of Chile, Uruguay, and Argentina and the implementation of Bitcoin as legal tender in El Salvador since 2021. Both cases were studied by analyzing news and media articles from local and international sources around those topics until December 2022. A corpus of information was analyzed through the dissection of images of future/technology, a methodological strategy introduced to work in symbolic ways to think about technological futures, and introduced in this piece.

From this process, I found four images of the future incorporated in El Salvador's Bitcoin adoption, which can be described as follows: Bitcoin is a **techno solution** to economic disparities; El Salvador is a significant economic **experiment** about the reliability of Bitcoin as the national currency; the implementation of Bitcoin as currency creates **huge risks** to El Salvador's stability; and the Bitcoin Law will **decolonize** the economic system of El Salvador, reducing the dependency on the US. These visions overlap and have distinct elements within the sociotechnical systems partially or exclusively related to their future visions. El Salvador's Bitcoin Law challenges the regimes of techno-economic futures, disrupting imaginations about what economic development and financial inclusion mean.

In a second case, I analyze the implementation of South American robots in Argentina, Uruguay, and Chile. This sub-regional system is characterized by the

centrality and robustness image of the technology of robots, which presents the intersection between internalist or technical elements and externalist or societal impacts of robots in different fields of application. Despite robotics slowly being incorporated in productive areas and adopted by consumers, three visions of the future were identified for this case: Robots will (or are) **replace** human labor, eliminating disqualified or obsolete workers from their positions, Robots are **optimizing** human activities to make labor more efficient, safer and fun, Robots are devices to **monitor** services and activities that are hard to maintain. The sources constantly invoked the presence of popular media images of robots, showing how global imaginations rather than local capabilities often mediate the understanding of robotics and automated futures.

The value of dissecting the images of the future of the socio-technical systems they inform is a form to situate technologies in context, combining speculative, material, and discursive dimensions. In addition, representing and analyzing popular media allows me to identify effects – introduced as agonistic, antagonistic, and allosteric – between images of technology and images of the future involved in these systems, situating relationships between the technological future of emerging technologies. In addition, for the kind of sample, this methodological strategy allows showing what is seen and what envisions are being reproduced in the communities involved. However, for the same reason, biases, invisibilities, and exclusions can maintain some images of the future unable to get attention.

These cases offer local articulations of the future that, despite some of them may have a global presence – as the possibility of human substitution that robots suppose – its effects can be placed in the territorial capacities, experiences, and



imaginings, carrying in this case, the characteristics of Latin American visions of the future. In addition, this project allowed me to explore the connections between popular news, images of technology, and the future and see how technological shortcomings discourse can get reproduced and maintained, mainly when technological development of emerging technologies is not as public for the people. That way, this project extends the ways to think with technology and the future, opening new questions about the role of images and imagination in local technological cultures. Haraway (1988) claims that "single visions produce worse illusions than double vision or many-headed monsters," These pieces describe, in two cases, a perspective for its operationalization that resists singular universal and deterministic futures and uncanny feelings during our permanent process of technological change.

## CHAPTER 5

### **LATIN AMERICAN WAYS OF FUTURING**

The production of futures is an act that every human performs at some moment. From planning our day, strategizing a project, and visualizing the effects of Climate Change in our territory, future thinking is intrinsic to the ways in which we humans understand the world. Whitehead (1967[1933], p.89) described foreseeing as a form of understanding, a present-based capability to deal with future events.

Whyte, Comi, and Mosca (2022) define future-making from an organizational perspective as “the work of making sense of possible and probable futures and evaluating, negotiating, and giving form to preferred ones” (p.2). Practices of future-making are transmitted as experiential knowledge, which for its emotional nature, is embodied, sense-based, and contextual (Knorr Cetina, 2001, p. 187). From a pragmatist perspective, Comi and Whyte (2018) also define future-making as a form of inquiry that engages with representations about the future. Based on this conceptualization, future-making is a non-rationalistic and deliberative activity, often framed as a collective endeavor. (Whyte, Comi, and Mosca, 2022)

Because the future is not a matter to be determined nor disciplined (e.g., Kornberger, 2013), it must be approached as incompletely knowable, problematic, and open-ended (Wenzel et al., 2020). The devices, stories, reports, visualizations, and predictions are materializations of a practical engagement that turns professional future making a distinguishable form of craft, which differs from rationalistic ways of futuring such as foreseeing (Tsoukas & Shepherd, 2004) and wayfinding (Beyes & Holt,

2020). Future making is hands-on and generative expertise (Ewenstein & Whyte, 2007), where participants craft devices to represent, transmit and display future visions.

In that form, the quality of forecasting, foresight, and forward-thinking is not homogenous among people. Some people have developed their craft in different epistemological traditions, incorporating tools and strategies to build better plans, observe more significant amounts of data, narrate scenarios, or make sense of more complex issues. In the last century, the consolidation of different communities of practice around future-making has created experts about the future worldwide.

Jasanoff (2020) argues that “to explain the diverse ways in which technological trajectories develop around the world, one needs a more nuanced theory, one grounded in a deep understanding of co-production and sensitive to the distinctive attributes of the politics of future-making.” (Jasanoff, p.32) Despite suggesting socio-technical imaginaries as possible frameworks, counter-futurism (Parrika,2018) in fiction and foresight has become a robust approximation to connect technological regimes with visions of the future. The attention to the local practitioners of future-making can offer insight to produce this theory collectively to understand situated futurisms.

The goal of this piece is to articulate the relationship between expertise and future-making in the case of Latin American Futurisms. In this piece, I do explore the notion of Latin American Futurisms from their practitioners. I rely on in-depth interviews with a wide range of Latin American experts to understand their situated knowledge. The guiding question of this piece is: What mechanisms do practitioners

and experts use to produce and circulate local ways of future-making? I focus the attention in this piece on the training, influences, and methods given in the in-depth interviews, and these results are systematized. (See Appendix A)

The piece initially describes the methodology of sampling, interview protocol, and analysis from which interviews were done. Then, I characterize the common elements and findings on the dimensions of training, influence, and professional practices of futuring that enact their future-making, relying on quotes from their answers. The following section articulates their understanding as part (or not) of “Latin American futurisms,” discussing the relevance of this category to frame their work. The piece closes with final remarks that help us to understand situated future-making as a central element to understanding alternative futurisms.

### **Methodology.**

To know the process involved in the experience, influences, and practices that configure “Latin American future-making,” the study of professional practitioners as experts were selected as a strategy. Despite many kinds of people working with the future in the region and the world – such as scientists, politicians, activists, economists, etc. – Professional future makers work as enablers of future capacities and inspiration in their region.

The notion of the future professional maker was established from different epistemic communities often involved in designing, facilitating, discussing, and framing the future in multiple sectors. In that form, science fiction writers, speculative designers, emerging technology policymakers, and foresight/prospective specialists

were determined as the center of that expertise. Future makers operate in networks beyond their training, mobilizing forward-knowledge in places they hold that expertise. Usually, the label “futurist” is an umbrella used in English to refer to all these kinds of practitioners and specialists, and commonly they are participants of international networks such as the World Futures Studies Federation (WFSF), Millennium Project or the Association of Professional Futurist (APF). In that form, those were my initial sites for searching the presence of Latin American participants.

This research was affected by the context of COVID-19, and an appropriate research design was made considering the location and territorial constraints. Initially, a list with 210 individuals from most nations in Latin America was elaborated, with contact information, examples of their work, and other relevant information curated. This list focalized on individuals members of those networks, as well as others participating in virtual events, audio or video interviews, remote workshops, or others from April 2020 to December 2021, focused on the future, such as the FutureCON conference, APF Festival of Futures, the podcast Exploradores de Futuros (Chile), and the virtual Network of Seminarios de Estudios de Futuro (Mexico/Argentina), which appeared as nodes that congregated these specialists.

This study is based on qualitative, exploratory, semi-structured interviews with a selection of those practitioners. The interviews were performed between February and May 2020 using a non-stratified, purposive sampling approach. For the invitation to interview was, considering the inclusion criteria of being born or based in a Latin American nation and working with some of the previously mentioned future practices in the last decade (2011-2021). I did prioritize invitations to have a wide range of participants. Elements such as age, gender, and country of origin were considered to

increase regional representation and procure a territorial and intergenerational diversity of perspectives and practices of future-making.

Fifty-nine interviews were held via Zoom, with an average time of 101 minutes. Interviews were transcribed during the conversation and reviewed for clarity and coherence. Among the interviewees were 29 men and 30 women from 11 nations in the American continent: Argentina (3), Bolivia (1), Brazil (17), Chile (5), Colombia (7), Ecuador (2), Mexico (15), Perú (3), Uruguay (1), Venezuela (1), US (2). Two interviewees were European (Spain and Italy) and were invited through the relevance that both were identified to articulate the networks and works on the region in recent years. Many of the participants also had dual citizenship and diverse migration stories. Interviews were held from Phoenix, AZ, aligning time zones with places such as Sydney, Dubai, Boston, Salvador de Bahía, and Cali. More details see Appendix B.

As can be observed, the lack of presence of Central American and Caribbean nations is a limitation of this study. Nevertheless, invitations to future-makers from Trinidad and Tobago, Guatemala, Jamaica, Guyana, Costa Rica, Panama, El Salvador, Cuba, and Dominican Republic were sent, getting, in some cases, non-interest or lack of capacity to schedule in the time window. Nevertheless, this limitation does not restrict the regional perspective of this study to the Latin American region as a geopolitical space due to the regional work that many of the interviewed experts had in all these nations and the reference to the works and inspirations of people from those places about Afro-Caribbean Futurist, technological experimentation and government advisory that my sample of interviewees had with them. However, this lack of representation also needs to be understood as a proportional presence of that expertise in the local population because my list had a more considerable amount of

Brazilians and Mexicans, which is coherent with the population of those nations in respect of the rest of the region.

The results will be presented indicating three aspects: Main field of occupation, country, and gender. The aspect of the field of occupation resulted from a remarkably fluid on this project. Even though I initially framed four domains of practice (science fiction, speculative design, foresight/prospective, and emerging technology policymakers), these four categories blended with many of the interviewees, crossing the professions of disciplinary or labor categories and allowing them to understand the interdisciplinary nature of future-making practices.

In three sections, the interview protocol set a series of questions to identify elements around their personal and professional trajectory. First, one to know about their positionality, training, and own perception of their work; second, center on the sources and influences on their work, with emphasis on local, regional, and global methods, concepts, and practices that they usually incorporate or elaborate in their practices as Latin Americans. And finally, a third part to an understanding of the role of technologies (in particular emerging technologies) in their future-making practices, which may inform and perform and how they perceived the possible future as well their perspective of the future for the region. This piece focuses on the results of the two main sections.

The analysis of the transcripts was done in MAXQDA22 to perform content analysis. The analysis was done for each question, synthesizing and comparing the common elements and notable differences among the interviews. The analysis summarizes the perspectives, practices, and experience of this group of professional

future-makers, an incomplete but representative collection about the state of the art of future-making in Latin America.

In the following sections, I report on the main salient from these 59 interviews, relying on direct participant quotes. Quotes were translated from their original language (Spanish or Portuguese) and slightly modified for clarity when needed due to translations. These are introduced as perspectives on expertise and training, Intellectual influences, and practices of future-making, which inform the mechanisms of future-making that these people engage in their projects and labor.

### **Who is a Future expert in Latin America?**

Future expertise has been traced to the cybernetics and system thinking communities in the 1950s and 1960s (Seefried, 2014). That knowledge has been articulated and professionalized on networks such as the Association of Professional Futurists (APF), the Millenium Project, the World Futures Federation, Design Futures, and other global-scale organizations. All these organizations involve future-makers professionals from Latin America, sometimes even in the range of directors or project coordinators. However, the initial feeling I found in the interviews is a profound disconnection between the future-making happening in the global north and the one that Latin Americans made. One of the interviewees characterized this gap in their training as follows:

We started going to World Future Society conferences. It is a training with an Anglo-Saxon Anglo-Saxon vision—the vision of a single future (Foresight, Mexico, Women).



Many interviewed accessed some level of training or formation in their lives. The initial discipline of these people is highly diverse, from medicine and engineering to literature and feminist studies. Some even never got a degree. However, a shared interest in the future came from an early age, orientating their interest in their disciplinary or labor roles towards future-making. Most participants mentioned how hard it was to break with their disciplinary framings and the limitations and drawbacks they lived when their peers perceived them as out of their initial communities of practices.

In that form, most Latin American future-makers became experts in unstable conditions. That training was often described as limited and inaccessible in their nations. Many of them, particularly those working more than ten years on futures in any capacity, described the importance of self-learning and intrinsic motivation as drivers of construction as professionals. Online materials and seminars have been vital in accessing this knowledge since 2000. Previously, just the opportunity to get a professor or book in their hands canalized their curiosity and interests. The courses from the Institute for the Future (IFTF), including a Coursera free training, events from Singularity University and the School of international futures (SOIF) were meaningful opportunities for some practitioners in the last decade to access to the initial skills of future-making:

I took the Futures Thinking course on Coursera—many master classes and workshops are part of the specialty. I have learned by leading in the specialty. Not from start to finish, I attended classes, conferences, and others (Foresight/Design, Mexico, Women).

However, the most common description was the self-training and formation through mentors. The incipient knowledge validation of future knowledge and foresight in the region established a precarious ecosystem that relied upon contacts, trainee opportunities, and the formation of networks.

It was learning by doing 100%. I joined as I learned with great craftsmen who had been doing visioning, Julio Ceppi and Stefano Marzano, the bosses at Phillips Design (2000). In 1995, they published Vision of the Future. All very incipient (Design, Argentina, Women).

I looked for the main prospectivists in Mexico: Antonio Alonso Concheiro, Guillermina Baena, and Francisco Miklos. I read their books, invited them to my house, and they oriented me on how to do my things. I surrounded myself and became familiar with them. To advise me (Policy, Mexico, Women).

Those currently active in these networks have articulated or are part of emerging programs in the future, design, foresight, and political prospective. Among those courses are regional organizations with seasonal events, like the Curso de Prospectiva Regional, CEPAL, or short training organized by FLACSO and PNUD in South and Central America and others for the Centro Javier Barros Sierra in Mexico. The seasonality of these cohorts keeps the networks alive and the opportunities for learning and exchange flowing.

I am in some WhatsApp groups and share memes with these prospectivists. I constantly contact them (Foresight, Ecuador, Men).

I was self-taught in science fiction. I trained myself to write it in a dialogue with colleagues. I learned a lot from people like Alberto Chimal and Pepé Rojo. When I discovered Mexican science fiction, it was important to me. I was invited to be part of the science fiction anthology by people who had written it before. I read this body of Mexican science fiction but did not identify many things with what I wanted to be. There was a guild accompaniment, that there was union in the face of the disdain of the mainstream, of friendship that was given, in this thing of marginality. (Sci-Fi, Mexico, Women)

One of the oldest training programs in the region is the Master in Strategic Thinking and Prospective at the Universidad del Externado, Colombia, and the Master in Strategic Prospective at the Tecnológico de Monterrey, both created in early 2000. In addition, a network based on the Universidad Nacional de Mexico by Guillermina Baena, which has articulated foresight and prospective from the Universidad Autonoma de Mexico (UNAM), was launched in 2002. These initiatives are the oldest programs in the region, deeply connected to economic, political, and business settings for future thinking. The UNAM network has also created strategic alliances for training around the region, with the Universidad Nacional de Cuyo (Mendoza, Argentina) and initiatives such as Teach the Future, created by Prof. Peter Bishop in Texas, which has chapters in many countries in the region, such as Perú, Mexico, and Brazil. What connections have specifically linked international foresight experts that have traveled around the region to offer their tools, experience, and knowledge?

We had many mentors. Javier Vitale, from Argentina. We went to Foresight a lot. We financed these trips. And we connected with people. Javier gave us a whole course on prospective agro-industrial scenarios. Agrarian University.

Economics, Forestry, Agrarian, etc... Lucio Henao also. A lot of self-education. Starting at the University, I found an alignment in innovation and foresight (Policy, Peru, Women).

Some other trainings that have appeared since 2015 include a program by the Brazilian studio Aerolito, the Universidad Nacional del Cuyo, and a postgraduate diploma in Diseño del Mañana by CENTRO, Mexico. These programs focus on developing future-making skills beyond strategic foresight, empirically incorporating the experience of many fields and application settings.

For the case of people who focus their craft on speculative and science fiction writing, the resistance scenario was similar. Many literature programs neglected and even rejected the production of future-oriented texts in the traditions of science fiction.

Twenty years ago, I left college, nothing of science fiction or speculative genres was studied there, and we didn't see many female authors either. A masculine canon, which is "culturally endorsed." (Sci-Fi, Mexico, Women)

People who engaged with the topic were part of generations of pioneers in the region field that rescued cultural production and defied the canonical understanding of literature production. One of the interviewees shared about this:

Several training instances coexist, even though they are very different. Different. The most important is the North American Literature Chair at the University of La Plata. The University of La Plata has to do with the courage of Gabriel Latelo, who decided to give it only in Science Fiction. Now the program

is about women authors. I have taken women authors and read them to be able to read them. He talked about canon and counter-canon teaching science fiction that applied beyond science fiction. Fiction. He taught me a way of reading (Sci-Fi, Argentina, Men).

The resistance to the production of future fiction was strong for most future-makers. Yet, the communities that focalize their practice on science fiction and speculative fiction have gotten from their writer colleagues one of the harshest rejections of their craft, limiting training opportunities, marginalizing their production, and professional their works. However, they have created communities to fight against the undermining they historically have received.

I realized that if you talked to other people, you could see the visions of science fiction, their proposals, and what they were publishing. Many people in Mexican literary criticism that Mexican science fiction cannot exist. It is not part of the canon. And we must say, of course, it exists (Sci-Fi, Mexico, Women).

However, around 2015 appears to be a pivot in the opportunities. Since this year, those who have endured and worked around the future in the region have received a more positive response. This aligns with the beginning of more integrative programs, regular training, and publishing opportunities around future-making that incorporate speculative design and other ideas. In particular, with the rise of the future as a matter of concern for other disciplines, the valuation of future-making skills has been increasing in the region.

Today, many of the interviewees led initiatives, courses, programs, and activities to train others on future-making skills, such as creative writing on science fiction, edition of collective volumes, curation of events and design experience, cross-disciplinary training for people beyond their discipline and organizations, as well other manifestations of a regional valuation of future-making among the people of Latin America.

Just as important as learning was unlearning. How colonized my view was done in consumer goods. That was really important to me. To understand the other perspectives. But, my privileged perspective required me to unlearn the systems that we're created. (Foresight, Colombia/USA, Women)

Latin American future-making can be found now in different professions. Yet, the diversity of traditions of thought and practice makes them a heterogeneous and inconsistent community where they struggle to see each other. These creators of futures make sense of emerging processes based on constrained institutional arrangements, in which cultural values of the region seem to resist long-term reflection. From these testimonies and their experiences, the next section will describe their influences on their professional practice of future-making.

### **Influxes of Expertise: Global and Regional Future-Knowledge.**

Latin American future makers are framed on contemporary networks of future-oriented knowledge. The interviewees were asked about their influences and sources to understand their primary sources in their professional work. Initially, most declared

the relevance of global (or Anglo-Saxon) future sources and authors that shape their work.

I've been really inspired by the books I read. In 2018 I stopped using social media. And the time from the networks, I started to invest in reading books. I'm like an intentional practitioner. Not just the subjects I work on directly. Ex: Sound, Music, Ted Chiang fiction, Ursula Le Guin, Asimov, and books on media studies. Old books, reading Paulo Freire's Pedagogy of the Oppressed. I don't take notes in the books I read; in others, I trust my unconscious. I read 2 or 3 books at the same (Design + Foresight / Colombia / Men).

These inspirations have also been nurtured by direct contact with authors worldwide.

My primary influence is Jim Dator. The guy answered my mail with questions. Tips from design research to future. He was very friendly and sent me some articles and papers from himself. (Brazil / Foresight / Men)

The main reference is Sohail Inayatullah. The most present in my current prospective studies. I started with Michelle Godet, and then outside of the French prospective, human and social prospective, forecasting (Foresight / Ecuador / Men).

However, from the analysis, I detected a significant disconnection with other future scholars and sources from around the region. As mentioned, many interviewees reported the precarious labor ecosystem and limited opportunities they had to offer

their future-oriented practices. One testimony is revelatory about the relation between knowledge and place among the respondents:

I went to Tallinn, Estonia, to give a talk at the foreign language library. In Estonia, I felt I was on another planet, a colonizer on the moon—mysteries of pre-Hispanic times. Funny, what Peru is best known for is the time when Peru was not Peru. When I returned to Lima, I began to study my own culture. I had to change my understanding of technology. Not all technology is modernity. Intelligently use wind or light. They took it as a philosophy when considering sustainability, which was a problem. Now this moves me in my work. It is about these other types of technology, these other types of Andean and Amazonian innovation. We feel like foreigners when we travel to those places (Sci-Fi / Design / Peru /Men).

Similar ideas informed an emergent trend among future-makers: An search for ancestral knowledge and wisdom to situate their work as part of the region to which they belong.

I feel guilty and enraged that I can't quote who is my indigenous ancestors, but I can do generations of Europeans. In Brazil, black was renamed and separated. One hundred forty-five million people are black in Brazil, and they don't know where they came from, and they recreate that way of life from affinity. (Foresight / Design / Brazil / Women)

This whole theme is mystical and energetic between the Mayas and the Galactic Mayas, between civilizations and pre-Hispanic themes. We were very advanced



civilizations knowing there were things we didn't know. What things make we do not take advantage of that sense? Rescuing my Mexican roots is something that motivates and moves me. Not only roots, like patterns and fabrics. Creativity, empathy, teamwork, and collaboration (Mexico / Foresight / Design / Men).

This aligns with some of the causes that future-makers align with. Most future-makers declared some kind of ideological influence, such as feminism, anti-capitalism, libertarianism, cooperativism, and environmentalism. Despite the political variety of the participants, a common element is a clear commitment to making better worlds that overcome the limitations of the current reality of people's lives in their countries.

It inspires me that the world can change. Ursula K. Le Guin really inspires me as my Saint Matron. We have some illustrations by Ursula K. Le Guin. She was given the Medal of gringo letters, and she gave a speech about capitalism. All the powers that people give can be taken away by people. It is very important to think that in the future, this system can disarm me, in the heteronomy, in the concentration of power, the capitalocene interests me a lot. It inspires me a lot to say what I can do, NOT contribute. My individual actions can contribute to proposing things, even if they are small so that they do not contribute to this system. (Sci-Fi / Mexico /Women)

This sensibility is not just theoretical but also embodied. The influxes of knowledge are also supported by their daily experiences, which based on observation, inform their professional and personal decisions. In particular, the environmental

effects of Climate Change and other associated crises are a consistent source of attention and inspiration for many respondents.

The transformation of the environment (I was born in 1978) from 1978 to now but for me has affected me (I don't know why I am so sensitive). I see how many city areas are drying up and how the cycles no longer correspond. I have seen how insects, lizards, birds, and flora change. What worries me is that there are people who do not realize it. People who only care about knowing what they are going to eat that day, having space in transportation, and updating their status on social networks. How can they not see this when the human status prevails over all other species? (Sci-Fi / Mexico / Women)

Cultural referents beyond their region are also commonly mentioned. From social science theories and science communication products to African percussion music and Doramas are around the sphere of influence of Latin American future-makers. It is an eclectic community driven by curiosity, personal histories, and professional trajectories in creative and undisciplined ways.

My sister taught me Korean during the pandemic. I am a big fan of anime. No, currently, but formatively it touches the stories of my adolescence. I'm also a fan of K-Pop and Doramas. I've always been very curious about Japan. (Sci-Fi / Mexico / Women).

Future-makers also have a solid sensibility to current events. Some draw more attention when previous projects immerse them in that knowledge ecosystem. These events are close to their areas of origin and exemplify a caring sensibility for their

places of belonging. Even if people move far from there, familiar links and motivations make them keep the heart where they are from, informing their performance.

I am very inspired by what is happening on the border. Surely you know Acemoglu's text, *Why nations fail* (I met him in another master's program in Sweden). He talks about Nogales Arizona and Nogales, Sonora. I think the future of my country is on the border—those binational characteristics, that thing that is not totally American, totally Mexican. I am very inspired by what happens on the border between Mexico and the United States (Forecast / Mexico / Men).

Because I have been working with space aliens in Puerto Rico, there is Arecibo, which is essential for the history of extraterrestrial communication; the first intentional message was sent from Puerto Rico. Learning from that and science in Puerto Rico, now it is very sad and it was damaged in the Hurricane, and I don't think it will be built again. (Sci-Fi / USA / Men)

The influences of future-makers are diverse and mixed in Latin America. These require attention to issues around the world. As the following quote shows, future-makers interconnected nature, western theories, ancestral knowledge, and resistance to the known regimes from the lived experiences as elements of their reflection and practice of futuring.

Currently, there are two very important things: Rene Revetes' work in the 60s. Thinking science, not only as European, Anglo-Saxon, central, and hegemonic but other possibilities of science. Other cosmogonies: The oriental (Buddhism,

oriental philosophy) or native peoples. Look for these tools in dialogue with current philosophy and relations with Guattari, Deleuze, and Jean Luc Ranciere. I am also very interested in discussing our relationship with nature. The human/nature dichotomy. Rhizomatic relationship (Sci-Fi/Colombia/Men).

The influences, whoever doesn't complete the range of activities that future-makers do in their work. For the achievement of their craft, most future-makers have developed, used, modified, and/or transformed methodologies to produce futures, which are the focus of the next section.

### **Methods and Practice of Future-making.**

Future makers are in a transition in Latin America. From pioneers in the field that are still alive and active to the newer generations that enter the field during the COVID-19 pandemic, future-makers use a wide range of practices. The first distinction is between those that use participatory methods and those that use methods that inform their production. This distinction is relevant because it changes the role of the future-maker from the elicitation of future visions to the facilitator of interactions. Most interviewers referred to themselves as the latter

Here is this notion of futurism or futurist. I am the professional in the process of debate and construction of the future. I am not a visionary. I am the furthest thing from that. I am not a guru. I know some concepts and methods that allow us to organize a reflection on the future. In this framework, those who participate are the social actors involved in the problems under study. (Foresight / Policy / Argentina / Men)

All frameworks are useful and applicable as starting points for future practices. You can build your own and apply themselves. Have that softness on your approach, and doing it on your own, scale it up, doing on the start to build up the credibility in your approach. We embraced futurism as an approach to make you more literate about the future, always framed around technology. We avoid futurists. We talk about emerging and how ready it is right now. How faster is it moving, and who is working on it. Flip the script as a tool that facilitates you to use these tools on your own. (Foresight/Design, Brazil, Men)

Many respondents reported that national or regional traditions or methodologies weren't a thing. A perceived divide between practitioners related to Foresight/Policy and others to design/Sci-Fi was observed in the answers. The methodological traditions they described always referred to the ones with a similar craft. In very few cases, an interviewer understood future-making as a polyphony of strategies. Homology seems to be a primary form of rationality for these sub-communities.

There is no Brazilian tradition to foresight in the way that future methodology here, in Latin America. Future is very connected to the French normative, to try to have a correct answer and driver of changes. Instead of foresight. Less focus on signals and more connected to the trajectories of things. I pick things from different schools... I am trying to make this jigsaw puzzle. There is no tradition. (Foresight / Sci-Fi / Brazil / Men)

In addition, Future makers are not alien to criticism. This one has been key to differentiating the epistemic communities involved in producing future knowledge and the contrast between their practices.

A new generation of prospective. Between foresight and design. One of the things I discovered about how foresight is communicated is rather ugly, only in written form, with horrible laminates. The PowerPoint slides are very ugly. They have no training in design. That marriage between the language of design. A lot of designers think they know foresight, but they don't. (Design / Foresight / Mexico / Women)

Even more, the implication of non-professional partners in their projects sometimes produced drawbacks. When future-making is perceived as a service, its reflective practice and political scope may be adapted to the interest of the organizations and not always to the evidence and procedures that the professional future-maker brings with it.

When we have done some work, they are conditioned by the municipalities or the government itself. When you finish specific scenarios, they must agree with the person who commissions you more than the people. The professionals who are the technical counterparts are the ones who approve of the scenarios. Then come to the sniping; the scenarios are left with those who commission you (Foresight / Chile / Women).

A fascinating anecdote came from one of the participants, which reported that in later years, a political party requested a presidential program for their company. Their organization had political alliances, but the innovative element was the centrality of foresight and future methods to produce a presidential program for a candidate.

We have a WhatsApp group where we discuss a lot with people from different sectors and topics, which generates many forms. A political party sought to develop the government plan of a candidate who did not win. This government

plan of a very criticized party was quite good. It was something that we dedicated a lot of time to (Foresight / Peru / Men).

This situation doesn't resolve the case for regional or personal contributions to methodologies. If Latin American Futurism may be defined by methodology, some interviewees argued that their practices are globally informed and deterritorialized.

My methods are academic ways of research. I am searching for projects and looking at technologies. See reports about consumer behaviors. Not specific authors. Most of the time, they are not places, that can be Sao Paulo or New York, a big metropolis. (Foresight / Sci-Fi / Brazil / Women)

Nevertheless, some participants offered examples of techniques and methods that, to a lesser degree, they adapted, on a larger scale, they created from their practice. Among those, the respondents often mentioned two methodologies as Latin American: Theater of Becoming and Psych prospective, innovations that have in common with the work of Alethia Montero, Mexican future-maker. Other methodologies were also identified as Latin-American-based.

It is both the Latin American perspective and the design of Futures. Precisely that has already been owned of Latin America, which is almost unknown but not used: The Mexican and Latin American theater of becoming arises and sprouts here. There is the part of Ludoprospectiva, which Karina Narello in Uruguay uses. One-on-one games (Foresight / Mexico / Women).

We adopted a process from Candy, Cornell – Ethnographic Experiential Futures. A project that imagined the futures of 3 low-income families in Mexico City. The segment that it represents is that they are excluded from these conversations

about the future. Not so much nurturing it. Interviews, research, research, co-creation workshops, the imagination of everyday life of the future (Design / Foresight / Mexico / Men).

Despite these innovations, one of the respondents reported on a knowledge demand that keeps Latin America restricted in its global influence—the linguistic difference with the global North. The demand to produce future-centered knowledge in English has structurally included the participation of Latin American thinkers, makers, and scholars in global discussions about the future. The respondent argues that here there is a chance for collaboration with the Latin American diaspora:

One of the factors is the need to work on everything in English rather than bilingual. With the type of Latin Americans recently, you can collaborate on non-regionalized agendas. This intentionality is to connect with the Latin American diaspora (Design / Foresight / Colombia / Men).

As other respondents describe

The original reflection from Latin America will not appear in Anglo-Saxon magazines (Policy / Foresight / Colombia / Men).

The persistence of this structural difference may still keep the regional production of future knowledge constrained in distribution and recognition, perpetuating the difficulty of recognizing endemic methodologies, styles, or strategies of future-making. However, the limited presence of locally produced theories doesn't restrict them from reflecting on the character of their products. According to the informants, the following section presents aspects of the reflection if there are Latin American futurisms.



## **The concept of Latin American Futurism.**

In this section, I report on a direct question toward the end of the conversations, dedicated to reflecting on the emerging notion of "Latin American Futurism/s" itself. Despite an enormous tradition of political, literary, artistic, and academic future-oriented products, all interviewees find it challenging in some form. This question was the hardest to respond to because the concept produced different reactions. One type of them was an exception rejection of the concept because they felt doesn't fit with their work

If I'm very honest, I don't understand anything. I have a problem with the two words. I try to avoid the term futurism. I hate people; I don't like the position that the original meaning was X. We can only use X. I like the drift of terms. I like the drift of terms. But I associate a lot of futurism with Marinetti and his artistic avant-garde. If we use the term futurism as a way of integrating the imagination of the future. There is science fiction, there is strategic prospective, and there are Latin American futures studies. I think there is less than in other regions, and I don't know much about it either. This is a pending subject, and from the little I know, I don't know enough to form a pattern of the features of this. (Design / Foresight / Mexico / Men)

The character of the exploration was also interrogated. The framing and orientation were a space of discussion about the meaning of having a label of this form and the importance of not articulating responses as a region based on future local knowledge.

We will have to define what Latin America is. Latin America is a generalism that seeks to categorize us from a Western context. I don't consider myself Latin; I

am Mexican. I don't dance salsa like someone from Puerto Rico. Latin America has always been in search of who we are. We want to be part of that charge, Mestizaje, but we can't reach it (Design / Mexico / Men).

Is it the content of 'he images of the future? Is It the method? The set of themes and concerns? I don't know if there is something particular to develop Latin American futurism (Design / Foresight / Mexico / Men).

The possibility of Latin American Futurism also provoked some respondents, who rejected the notion as limited, incomplete, monolithic, or unnecessary.

I do not like the concept of futurism, more the future of Latin America. More of a noun than an adjective. It sounds very specific and very ideological (Prospectiva / Mexico / Women).

Latin American futurism is a series of actions to think about the future of – Latin America. They do not converge. It is a mistake to think that there is a monolithic proposal. This implies assuming diversity as a requirement. I do not believe that Latin America has common sense, much less what the future says, much less what it says. The future is only habitable in a speculative key. There is a double determination, territorial and temporal (Sci-Fi / Chile/men).

However, exploring a Latin American future project is grounded in the revolutionary configuration of the region. The project of Latin America has been linked to a historical latency, which informs a series of ideas, projects, and methods that drive the ways of living and being in the vast and diverse region.

A discussion with Antonio Alonso Concheiro, since the moments of independence in the 19<sup>th</sup> century, we have had a particular Latin American

ideology. But from futurism, as images of the future, from the 19<sup>th</sup> century, the notion of progress, in the 20<sup>th</sup> century, the notions of development and decolonization (Foresight / Policy / Colombia / Men).

Some informants attempted to make a definition based on the inclusion of different peoples, which are connected through cultural and historical elements.

Latin American futurism is any future that any future made for a LatinX or Latin American people. Any exclusionary way will be complicated. So much diversity – geographies, history, colonialism, diasporas, immigration, slavery, conquest- The more futures, the better. (Sci-Fi / USA / Women)

I'm not an expert. I couldn't tell you. I would have to analyze it. I feel part of it and what I am doing, but I cannot theorize about it. The intention, I believe that this capacity to produce meaning is original to the Latin American DNA itself, and if you ask me which characteristics: Capacity of adaptation or resilience. We have a particular aesthetic from the gastronomic point of view. Latin America is like a vast laboratory (Design / Policy / Women / Argentina).

Others observed the potential of Latin American past, present, and future to offer hints about the configuration of a Latin American futurist project that is flexible and plural

I think it is that place of the always in potential. Its futurism is to remain eclectic, but its core lies in the potential of cultural fertility of a landed Eden. As that place where there is still room to flourish, to hope. Where, in spite of all the external experiences, the technologies as machines, a futurism that maintains the origin or the root of everything. Where is that place the origin of

everything, somewhere in Latin America? That malleability is allowed. It comes to us from all sides, some slap from somewhere. That land where that root still converges (Sci-Fi / Chile / Men).

Nevertheless, a broad definition may also open space to the undesirable and fragmentary. Some informants mentioned this in their answers to this question.

A future made for Latin America. It can also be pessimistic, the favelas, the communities in poverty in the interior, and poverty in the city. Chile can think about the history of Allende and Pinochet (Design / Brazil / Men).

Do we need these categories? Do we need them when we look at ourselves? Future Fiction with dots, 150 dots from around the world. The dots represent something. It's up to people to represent it. What is the recipe for pizza, we need it. Can we leave it up to people what people like? I apply this to science fiction itself. How can you define indigenous science fiction? If I'm Italian and have lived with them for 20 years, can I talk about it? You're getting into it. But you can do cultural appreciation and say I'm so grateful you exist. I will come and find you. It's my responsibility to translate your story. You're part of something bigger (Sci-Fi / Italy / Men).

Yet, some elements often appeared when their focus might link to Latin American futurism. The first common element is precarious technological systems, characterized by phenomena such as Gambiarra or improvisation, for technological regimes in which failure is the default setting.

Improvisation, A Latin American approach, is still under construction, not only by eclecticism and agnosticism but also improvisation and the link to the

narrative, the fun, and the experience. It is more than a feeling than an approach. It is a style of improvisation of juggling, not adjusted to the formality of things. Informal, instead of structure (Science Fiction / Foresight / Brazil / Men).

When people talk to me about the Latin American future, the first thing that comes to my mind is a projection of obsolescence. Whatever we project will be more obsolescence (Prospective / Ecuador / Men).

A second common element is a vibe or atmosphere that characterizes Latin America. This feeling is celebratory and intense, which is something that many informants reported as something to be preserved about the future, and that shows a transient element of the region's character

Creativity, colorfulness, sensuality. We are fantastic by nature. A soundtrack, colorful, more accommodating, more affectionate and sexier, and more spiritual than the rest. There is nothing like Latin America (Forecast / Brazil / Women).

When you stand in an airport in the US, everything is super clean and super straight; everything is super manufactured. That same effect, and you enter a new context in the Benito Juarez airport, you see the board, the rock slab. This describes a lot of the context of how things look or can be seen. It's easy to cut yourself off from technological visions—the horns. In my own work, instead of reaching for the unattainable in technology, I develop. With the lack of attention to the future in Mexico, we have to think about it logically (Design / Mexico / Men).

A third piece was about the interconnect and mixed character of the ways of living. The role of temporalities as simultaneous, heterogenous, and contradictory configures a resistance to traditional temporalities and euro-centric relationality that Latin American futurism may possess.

Regional perspectives are the pluriversal approach. There is no universal approach to seeing the future or time. I learn much about other temporalities from these original perspectives (Design / Prospectiva / Brazil / Men).

There are decades of prospective, more mathematical, and nothing has been achieved. This current is closer to design, a strategy that moves it but does not achieve anything. It does not achieve a good impact. Consequently, this is a great opportunity. Naturally, it would be closer, more human, and centered on pre-Hispanic cultural values. This respect for nature, the unknown. (Design / Policy / Mexico / Men)

At last, the presence of nature as an embodied characteristic of the region is engaging. Considering nature as something characteristic of Latin America is, at least, problematic. We all live surrounded by nature, but informants perceive an intimate relationship between Latin Americans with their natural wealth and surrounding ecosystems. A respondent connected this with the ancestral knowledge that Latin Americans may ignore but traditionally may connect to some extent.

Latin American Futurism is a twinned cosmovision in which nature and humanity enter a code of understanding (Science Fiction / Mexico / Women).

Despite its limited dimensions, resistance, and asynchronies, some interviewees showed an unexpected excitement for the concept, which is seen as an

emerging phenomenon for creators, specialists, and professionals of the asynchronous region.

It's fascinating to put those two words together. It makes me want to get up every day and see what comes out of all this. See what comes out of all this. I'm very excited about how it can develop. The part that inspires me the most is that it's not the future and futures of. The concept of futurisms suggests plurality and rhymes with other beautiful things. It suggests questions I had not asked myself: What is Latin America in Latin American futurisms? (Design / Foresight / Colombia / Men)

Latin American futurism is beginning to be made. If it didn't exist, we couldn't find an echo when looking outside. Yes, it does exist... It has a problem in itself that Latin America has always had someone do it for us. It has a similar language. With similar sensibilities. Something very specific. To begin by saying that it is Latin America is very complex (Sci-Fi / Mexico / Women).

In summary, Latin American futurism is a conflicting term to understand the regional expressions of future making. Hence, it needs to be applied with care and caution to appraise future-makers' contribution in and from Latin America, appreciating their intellectual diversity, histories, and traditions. Retro-labeling all Latin American works around the same notion is reductionist. But, four elements around distinctive relations with time, technology, nature, and vibe may refer to a dominant aesthetic of future-making that is present in the region.

## **Conclusions.**

In this piece, I explored the mechanisms practitioners use to produce and circulate future-oriented projects in Latin America. Based on 59 interviews with people from 13 countries, the piece offered a detailed overview of the state of training, influences, methods, and assumptions about the production of Latin American future knowledge.

Initially, the notion of future-making was bounded to the professional exercise of the different crafts of the future (speculative design, science fiction, emerging tech policy-making, and foresight). These four communities are expressed in many countries in the region, despite some having limited opportunities. During the pandemic, it was possible to observe at least two generations of future-makers: the ones considered regional pioneers and creators of alliances and disputes that have created a knowledge ecosystem with a focus on the local. And a second younger group that has been influenced by the access to digital resources and communities to shape their professional identities. Both converged during the pandemic on events and trainings that allowed recognition of their experiences and interest.

The influences of future-makers are eclectic and diverse. Despite particular attention to their craft, the sources they convey may or may not be related to their work's region or location. Many have vast attention to social and scientific phenomena but with an imbalance toward knowledge produced in the epistemic centers of the global north. The incorporation of local knowledge is present but limited, with a particular emphasis on understanding ancestral and communitarian local knowledges. A particular gap observed is the lack of mention of other Latin American future-makers



in other domains. Foresight practitioners don't read Latin American science fiction, and emerging technologies in their nations do not inform speculative designers.

The methods the interviewees reported were based on traditional practices in their craft areas. Many have been trained in general domains – such as visual arts, literature, economic, political science, or engineering – as based to articulate their initial toolkit. However, the methods replicate most practices made worldwide for other non-Latin American future-makers. Nevertheless, practitioners commonly adapt to achieve their projects and subvert the resistance they may find against their work. In that form, they may even innovate, but not many does not consider it of value to be shared.

Finally, I asked the group what they understood about Latin American Futurism. This label resulted in diverse answers, from skeptical rejection to promising enthusiasm. The first objection came from the heterogeneity of Latin America and the exogenous nature of its framing. We became Latin America for those who colonized the continent and its people. The other is about the overlap of meaning with the concept of Futurism, and the *Avant-Garde* from the 1920s, which some rejected. Many attempted to define the concept – formerly undefined- bringing historical, cultural, technical, and epistemological elements of the Latin American people. Four dimensions appeared as promising factors to characterize Latin American futurisms: perplexing times, precarious technologies, embodied nature, and colorful celebrations. Those elements require further analysis to articulate a more robust definition from these findings.

However, this study shows how Latin American futurism is articulated through the experience and knowledge of future-makers in the region. Despite not having a geographically representative sample, the groups offer an epistemic, intergenerational, and interinstitutional diversity that informs about the stage in which future-making is around Latin America in the early 2020s. These interdisciplinary and very passionate professionals are influencing the ways of looking at the future from a region and vindicating a place of an epistemic generation that subvert the traditional epistemological dependencies Latin America has been a victim of. From their work, we can observe the practical forms in which the future is present, make sense of the past in other ways, and bring out the best of what humans are.

CHAPTER 6

**CONCLUSION: HOW THE FUTURE/S IS/ARE FOR EVERYONE?**

In this dissertation, I explored and characterized Latin American Futurism as an emerging form of forward-knowledge from and about Latin America. If we recall Table 1 in Chapter 2, we might need to add another row to the table which says:

Table 2: New category in alternatives and counter futurism (source: own elaboration)

Name	Summary of key elements	Some Relevant Exemplars	Selected References
Latin American Futurisms	<p>The presence of "hybrid temporalities" that blend timelines and different rhymes.</p> <p>A centrality of nature as a dynamic, conflicting, and transformative dimension</p> <p>Failure is a norm in technological regimes.</p> <p>Improvisation is a way to be with objects.</p> <p>Peace looks like an everyday celebration and color.</p>	<p>Panoptica: Los últimos días del Futuro (2013-now)</p> <p>El tercer mundo después del Sol (2022)</p> <p>Caso 63 (2021-2023)</p> <p>Museu do Amanha (2015-now)</p>	<p>Perez Comisso, 2023</p>

The presence of a collective space of future-making in the region is clear through the exploration that this research project offers. Clearly, this conclusion came after a research question, but also a political commitment to find ways to appreciate

and recognize how my region thinks and do future-thinking. Our people and even professional communities' negligence toward future knowledge is multifactorial. Still, the lack of this clear articulation increases the chance of undermining the labor of hundred of professionals and millions of people.

The offered four dimensions work as a compass, more than a map, to identify the images of the future that align with the feeling and knowledge of a region with more than 500 years of history. This project is a vindication that Latin American peoples have something to offer to the future. There is also a need to appreciate, not as a delay but as a productive difference, the ways of future knowledge cultivated and nurtured by our people. In that form, the political goal of this project is to make visible the invisible practices and empower others to recognize each other in their attempts to make better worlds for Latin America.

As Dr. Bennett pointed out in our conversations, I will confess that I also need to appreciate how my characterization might be incomplete and even totally wrong. With the data that I capture and the traces that I analyzed, patterns from literature, evidence, and stories help me to articulate these four elements around Latin American Futurism/s. Yet, as William Gibson's incorrect description of Japanese Futurism elicited a more considerable discussion about what futures are making Japan and East Asian people, my dissertation offers a systematic perspective to be contested and improved.

However, as one of the first steps toward appreciating Latin American traditions of future-making, I'm confident that some elements will help other researchers, creators, and thinkers find each other and refine these elements toward what Latin America has to offer to our times to come. More specifically, each of the empirical

chapters offers elements that inform how we approach the situated relations between technology and the future in a region, which I asked about at the beginning.

First, future-centered objects offer a multimodal manifestation of future-making for the appreciation and recognition of their different craft and the material limitations of their communities. The stories behind each of the presented exemplars in Chapter 3 use geographical, linguistic, and perceptual strategies to manifest the ways of living and being in the future of Latin America, with profound attention to the relations between technology, nature, and humanity that challenges euro-centric assumptions in creative ways.

Second, everyday visions of the future around emerging technologies in popular media are informed by monofutures and reproduced in forms that decrease local people's and experts' agency in framing the future. The dissection method offered in Chapter 4 is a form to appreciate which elements of socio-technical systems are happening in the complexity of implementation and what visions of the future are competing around the narratives. In that form, deconstructing and decentering sociotechnical futures is possible and desirable to bring back the agency where people feel alienated, such as the rapid change that emerging technologies bring in different areas of Latin America. In addition, this exercise helps to demystify the production of future knowledge and technology in the region, appreciating experiments that usually get left apart of alternatives that are silenced among the big imaginaries that media tend to reproduce.

Finally, in Chapter 5, the exploration of stories and experiences of future practitioners shows the variety of traditions of professional future-making that exist in

the region and how disarticulated they are. There is a solid possibility to find more recognition and value, especially with their emergent exploration of local histories and knowledge, if those different experts and their communities encounter each other in a shared space, such as the one that Latin American Futurism/s articulates among them. The common underappreciation, lack of opportunities, and precarization of their work is something that in unity can be faced when their experience is so rich and diverse that it will foster in spaces in which interdisciplinarity and collaboration are the norms. That is barely happening, and I hope my dissertation helps them frame themselves in a shared knowledge space, as sinofuturism, desifuturism, and Afrofuturism have made for many other practitioners worldwide.

In a more general question, what makes the future for everyone? In a world that appreciates the diversity and value of multiple ways of knowing and that each person can futurize on their own with the available capacities and methods, the future is for everyone when one achieves an emancipatory capacity to increase the agency of each person in the world. Yet we live in an unequal and unfair world whose futures have been used to colonize people, land, and minds. It was the colonial project that conforms to what today is Latin America. However, humans create and thrive after calamity and keep hope and desire at the center of their feelings to make a better world.

In that form, the counter-futurism project that Afrofuturism inaugurated as a concept offers many the possibility of finding a place in the future. The emulation and exploration of these speculative ideas have to empower millions of people to be heard and to fight for better worlds. In that form, the absence which starts this project is my contribution to finding a similar space of encounter and creation in Latin America,

which appreciate who we are and what we make in a more generative form, embracing difference and diversity and recognizing our past and present knowledge.

I don't think Latin America will exist forever, yet I think the feelings that embrace and the visions of the future that inform contribute to how to make a better world. If the future is for everyone, the learnings of the experience that Latin America should be valued and considered, first for its inhabitants and then for the rest of the world. The four characteristics introduced in Chapter 2 and the methods explored in the other chapters are interventions to find ourselves in the future and make the future ours.

To close, this dissertation introduces a characterization of Latin American Futurism/s as an emergent and plural phenomenon, which from the sight of Science and Technology Studies, illuminates common relations of Latin American people with technology, nature, desire, and time. Latin America as a project is always problematic. Yet, our shared stories and connections, in the spirit of the people who achieved political independence, our unity and communality will ensure our freedom. Resignify Latin America from its future knowledge is what guides me. Today, when humanity's future looms in front of multiple crises, an appreciation of our future regional methods and knowledge will empower our people to avoid intellectual colonization in our minds, our times, and our futures.

## REFERENCES

Agloro, A. (2019) "Rasquache Cyborgs and Borderlands Aesthetics in Alex Rivera's Sleep Dealer." *This Bridge We Call Communication: Anzalduan Approaches to Theory, Method, and Praxis*, edited by Leandra Hinojosa Hernandez and Robert Gutierrez-Perez, Lexington Books, London, United Kingdom, pp. 257–272.

Al-Maria, S. (2008). *The Gaze of Sci-Fi Wahabi: A Theoretical Pulp Fiction and Serialized Videographic Adventure in the Arabian Gulf*. Blog Entry, Sci-fi Wahabi Available online at <http://scifiwahabi.blogspot.com.uk/2008/09/introduction.Html>

Al-Saidi, M., & Zaidan, E. (2020). Gulf futuristic cities beyond the headlines: Understanding the planned cities megatrend. *Energy Reports*, 6, 114-121.

Ali, G. (2020, May 28) *Ancient Aliens, Gulf Futurism, and Social Justice: the liberating visions of arab science fiction*. Scene Arabia. <https://scenearabia.com/Culture/Ancient-Aliens-Gulf-Futurism-and-Social-Justice-The-Liberating-Visions-of-Arab-Science-Fiction?M=True>

Álvarez, L., & Coolsaet, B. (2020). Decolonizing environmental justice studies: a Latin American perspective. *Capitalism nature socialism*, 31(2), 50-69.

Appadurai, A. (2013) *The Future as Cultural Fact: essays on the Global Condition*. New York: Verso

Aradau, C., & Van Munster, R. (2011). *Politics of catastrophe: genealogies of the unknown*. Routledge.

Baena Paz, G. (2011). *Prospectiva por qué y para qué: la historia que muchos no quieren leer*. *Estud. polít.(Méx.)*, 109-127.

Baena Paz, G., & Patrouilleau, M. M. (2022). *Para dejar de ser la mancha gris. Prospektiva y futuro desde las experiencias y redes latinoamericanas*.

Baker, M. (2012). *Modernity/coloniality and Eurocentric education: Towards a post-occidental self-understanding of the present*. *Policy Futures in Education*, 10(1), 4-22.

Bandodkar, P. (2021). *Activating Indofuturism: Applying a lens adapted from Postcolonial Futurisms* (Doctoral dissertation, OCAD University).

Bastidas, R. Ed. (2021) *El tercer mundo despues del sol*. Minotauro

Bennett, M. (2016). *Afrofuturism*. *Computer*, 49(04), 92-93.



- Berghaus, G. (2012). The International Impact of Futurism: Absorptions, Assimilations, Adaptations. *The International Impact of Futurism: Absorptions, Assimilations, Adaptations*, 13-24.
- Berkhout, F. (2006). Normative expectations in systems innovation. *Technology Analysis & Strategic Management*, 18(3-4), 299-311.
- Beyes, T., & Holt, R. (2020). The topographical imagination: Space and organization theory. *Organization Theory*
- Bitar, S. (2014). Las tendencias mundiales y el futuro de América Latina. CEPAL <https://flacsochile.org/wp-content/uploads/2014/04/Tendencias-Mundiales-y-Futuro-ALatina-Bitar-CEPAL.pdf>
- Bouffleur, R. N. (2006). A questão da gambiarra. Rodrigo Naumann Bouffleur. Master Thesis. Universidade de Sao Paulo.
- Brinks, D. M., Levitsky, S., & Murillo, M. V. (Eds.). (2020). *The politics of institutional weakness in Latin America*. Cambridge University Press.
- Brock, A. (2020). Black technoculture and/as Afrofuturism. *Extrapolation*, 61(1-2), 7-29.
- Brown, N., & Michael, M. (2003). Sociology of expectations: Retrospecting prospects and prospecting retrospects. *Technology analysis & strategic management*, 15(1), 3-18.
- Bryce, J. (2019). African Futurism: Speculative Fictions and "Rewriting the Great Book." *Research in African Literatures*, 50(1), 1-19.
- Camacho, J. (2021). La gran imaginación: Un diálogo entre distintas visiones del futuro. *Telos: Cuadernos de comunicación e innovación*, (118), 50-57.
- Chastain, A., & Lorek, T. (2020). *Itineraries of Expertise: Science, Technology, and the Environment in Latin America*. The University of Pittsburgh Press.
- Chattopadhyay, B. (2021). Manifestos of Futurisms. *Foundation*, 50(139), 8-23.
- Clark, M. (2019). The Speculative Turn in African Literature. *Vector#* 289.
- Clark, M. L. (2021). *Indigenous Futurism: Practices and Politics* (Doctoral dissertation, University of Melbourne).

Collins, S. G. (2005). "No Anthropologist Aboard the Enterprise": Science Fiction and Anthropological Futures. *Anthropology & education quarterly*, 182-188.

Collins, S. G. (2005). "No Anthropologist Aboard the Enterprise": Science Fiction and Anthropological Futures. *Anthropology & education quarterly*, 182-188.

Comastri, H. (2020). Productividad y política obrera desde las bases: la imaginación técnica popular en las cartas a Perón (1946-1955). *Quinto sol*, 24(1), 84-101.

Comi, A., & Whyte, J. (2018). Future making and visual artifacts: An ethnographic study of a design project. *Organization studies*, 39(8), 1055-1083.

Conn, V. L., & De Seta, G. (2021). Sinofuturism (s). *Verge: Studies in Global Asias*, 7(2), 74-99.

Coronil, F. (2011). The future in question: History and Utopia in Latin America (1989-2010). *Business as usual: The roots of the global financial meltdown*, 1, 231-292.

Costa Silva, A. F. (2022) Antes que o céu volte a cair: o teatro latinofuturista imagina outros futuros?. *Urdimento-Revista de Estudos em Artes Cênicas*, 2(44), 1-29.

D'Souza, R. A. (2019). Imagining a desi future. *South Asian Popular Culture*, 17(1), 47-59.

da Costa, P. M. M., & Rocha, M. B. (2021). Análise semiótica de uma exposição sobre o Antropoceno: o caso do Museu do Amanhã: Semiotic analysis of an exhibition on the Anthropocene: the case of the Museum do Amanhã. *Revista Cocar*, 15(33).

De Seta, G. (2020). Sinofuturism as Inverse Orientalism: China's future and the Denial of Coevalness. *SFRA Review*, 50(2-3), 86-94.

De Smedt, P., Borch, K., & Fuller, T. (2013). Future scenarios to inspire innovation. *Technological forecasting and social change*, 80(3), 432-443.

Dery, Mark (1993). "Black to the Future: Interviews with Samuel R. Delany, Greg Tate, and Tricia Rose." *The South Atlantic Quarterly*. Durham, North Carolina: Duke University Press: 736

Detchon, J. W. (2016). Latin American conceptualism and the problem of ideology: the Centro de Arte y Comunicación at the São Paulo Bienal, 1977 (Doctoral dissertation).

Díaz-González, J. A., Mora Solano, S. , & Soto Kiewit, L. D. (2018). Visiones del futuro en Costa Rica: un estudio a partir de las percepciones de la población. *Revista de Ciencias Sociales*, 31(42), 177-194.

Dillon, Grace L. (2012). *Walking the Clouds: An Anthology of Indigenous Science Fiction*. The University of Arizona Press. ISBN 978-0-8165-2982-7.

Drew, K., & Wortham, J. (2021). *Black futures. One World*.

Dussel, E. (1993). Eurocentrism and modernity (Introduction to the Frankfurt Lectures). *boundary 2*, 20(3), 65-76.

Dutta, M. J. (2020). Whiteness, internationalization, and erasure: Decolonizing futures from the Global South. *Communication and Critical/Cultural Studies*, 17(2), 228-235.

Escobar, A. (2007). Worlds and knowledges otherwise: The Latin American modernity/coloniality research program. *Cultural studies*, 21(2-3), 179-210.

Escobar, A. (2018). *Designs for the pluriverse: Radical interdependence, autonomy, and the making of worlds*. Duke University Press.

Ewenstein, B., & Whyte, J. (2007). Beyond words: Aesthetic knowledge and knowing in organizations. *Organization Studies*, 28, 689–708.

Fergnani, A. (2021, April 2) Why positive Images of the future are not as beneficial as you might think? Predict. Medium <https://medium.com/predict/why-positive-images-of-the-future-are-not-as-beneficial-as-you-might-think-a03dbf017f6a>

Ferrara, B., & Pisano, L. (2019). Manifesto of rural futurism. *Rural Futurism online*.

Ferreira, R. H. (2011). *The emergence of Latin American science fiction*. Wesleyan University Press.

Ferrucci, G. (2019). A Pioneering Platform: Strengthening Environmental Democracy and Justice in Latin America and the Caribbean. *Journal of Management Policy and Practice*, 20(5), 10-17.

Fisher, N., Mehnert, W. (2021). Building possible worlds: a speculation-based Framework to Reflect on Images of the future. *Journal of Futures Studies*, 25(3), 25-38.

Foucault, M. (1983). *This is not a pipe (Vol. 24)*. Univ of California Press.

Fricke, S. N. (2019). Introduction: indigenous futurisms in the hyperpresent now. *World Art*, 9(2), 107-121.

Fritz, I. (2022, April 22) Ramiro Sanchiz: el escritor que pilotea su avión desde Uruguay. Las preguntas del Colofon. Pan Editorial. <https://editorialpan.com/pan-magacin/f/ramiro-sanchiz-el-escritor-que-pilotea-su-avi%C3%B3n-desde-uruguay>

Gaertner, D. (2015) What's a Story Like You Doing in a Place Like This?: Cyberspace and Indigenous Futurism. *Novel Alliances*. March 23.

Gall, T., Vallet, F., & Yannou, B. (2022). How to visualize futures studies concepts: Revision of the futures cone. *Futures*, 143, 103024.

García Canclini, Néstor (2009) *Las culturas híbridas en tiempo de globalización*. México: DEBOLSILLO

Gatto, E. G. (2019). ¿Cómo hacer?: Del futuro a las futuridades. *Revista Nueva Sociedad* <https://nuso.org/articulo/como-hacer/>

Geißler, K. A. (2002). A culture of temporal diversity. *Time & Society*, 11(1), 131-140.

Gillespie, M., & Toynbee, J. (2006). *Analyzing media texts (Volume 4) (Vol. 4)*. McGraw-Hill Education (UK).

Godet, M. (1986). Introduction to la prospective: seven key ideas and one scenario method. *futures*, 18(2), 134-157.

Goldman, S. L. (1989). Images of technology in popular films: Discussion and filmography. *Science, Technology, & Human Values*, 14(3), 275-301.

Gomez García, J. S (2016). "Hyper-reality" y el sistema virtual-sensorial: las nuevas identidades. *Maguaré*, 30(1), 275-284.

Gonzalez Ormedod, A (December 2022) Latin America has a tech herd mentality. *Rest of World* <https://restofworld.org/2022/newsletter-latin-america-tech-herd-mentality/>

Goodman, S. (1998). Fei Ch'ien Rinse Out: Sino-Futurist Under-Currency. *Pli* 7:155-172

Goodwin, M. D. (2021). *The Latinx Files: Race, Migration, and Space Aliens*. Rutgers University Press.

Grunwald, A. (2018). The Spreading of Techno-visionary Futures. En A. Bunde, J. Caro, J. Kärger, y G. Vogl (Eds.). *Diffusive Spreading in Nature, Technology, and Society*. pp. 295-309. Estados Unidos: Springer International Publishing.

Gudynas, E. (2010). Imágenes, ideas y conceptos sobre la naturaleza en América Latina. *Cultura y naturaleza*, 267-292.

Guston, D. H. (2010). The anticipatory governance of emerging technologies. *Journal of the Korean Vacuum Society*, 19(6), 432-441.

Guston, D. H. (2014). Understanding 'anticipatory governance.' *Social Studies of Science*, 44(2), 218-242.

Hamstead, Z. A., Iwaniec, D. M., McPhearson, T., Berbés-Blázquez, M., Cook, E. M., & Muñoz-Erickson, T. A. (2021). Resilient urban futures (p. 190). Springer Nature. Hansel (2019, June 27) Island time: south pacific futurism from a contemporary Aotearoa perspective. *The Funambulist* <https://thefunambulist.net/magazine/24-futurisms/island-time-south-pacific-futurism-contemporary-aotearoa-perspective-jessica-coco-hansell>

Haraway, D. (1988). Situated knowledges: The science question in feminism and the privilege of partial perspective. *Feminist studies*, 14(3), 575-599.

Haraway, D. (2015). Anthropocene, capitalocene, plantationocene, chthulucene: Making kin. *Environmental Humanities*, 6(1), 159-165.

Haywood Ferreira, R. (2008). Back to the future: The expanding field of Latin-American science fiction. *Hispania*, 352-362.

Haywood Ferreira, R. (2016). How Latin America saved the world and other forgotten futures. *Science Fiction Studies*, 43(2), 207-225.

Herrera, A. (2015). *Ciencia y política en América Latina*. Ministerio de Ciencia, Tecnología e Innovación Productiva. Argentina

Herrera, A. O. (1973). Los determinantes sociales de la política científica en América Latina: política científica explícita y política científica implícita. *Desarrollo económico*, 113-134.

Hoda El Shakry (2021) Palestine and the Aesthetics of the Future Impossible, *Interventions*, 23:5, 669-690, DOI: 10.1080/1369801X.2021.1885471

Huang, Y. (2020). On Sinofuturism: Resisting Techno-Orientalism in Understanding Kuaishou, Douyin, and Chinese AI. *Screen Bodies*, 5(2), 46-62.

- Hughes, J. J. (2008). Back to the future: Contemporary biopolitics in the 1920s' British futurism. *EMBO reports*, 9(S1), S59-S63.
- Hughes, T. P. (1880). 1983. *Networks of power: Electrification in Western society*. Hui, Y. (2020). *Cosmotechnics*. *Angelaki*, 25(4), 1-2.
- Huxley, J. S. (1936). Eugenics and society. *The Eugenics Review*, 28(1), 11.
- Inayatullah, S. (1990). Deconstructing and reconstructing the future: Predictive, cultural and critical epistemologies. *Futures*, 22(2), 115-141.
- International Federations of Robotics (2022) World Robotics Service Robots <https://ifr.org/free-downloads/>
- Iparraquirre, G. (2016). Time, temporality and cultural rhythmicity: An anthropological case study. *Time & Society*, 25(3), 613-633.
- Jarosz, L. (2017). Binary Narratives of Capitalism and Climate Change: Dangers and Possibilities. *Other Geographies: The Influences of Michael Watts*, 55-62.
- Jasanoff, S. (2020). Imagined worlds: The politics of future-making in the twenty-first century. In *The Politics and Science of Prevision* (pp. 27-44). Routledge.
- Jasanoff, S., & Kim, S. H. (2009). Containing the atom: Sociotechnical imaginaries and nuclear power in the United States and South Korea. *Minerva*, 47, 119-146.
- Joerges, B. (1990). Images of technology in sociology: Computer as butterfly and bat. *Technology and Culture*, 31(2), 203-227.
- Johnson, D. G., & Wetmore, J. M. (2021) "Visions of technological future" in Johnson, D. G., & Wetmore, J. M. (Eds.). *Technology and society: Building our sociotechnical future*. MIT Press. P.7
- Jungk, R. (1969) Imagination and the future. *International social science journal*, XXI, 4, p. 557-562 <https://unesdoc.unesco.org/ark:/48223/pf0000021700>
- Jurado, C. (2020). Gulf Futurism: ¿qué hay de real en un espejismo? JotDown. Recuperado de <https://www.jotdown.es/2020/09/gulf-futurism-que-hay-de-real-en-un-espejismo/>
- Jurado, C. (2021, Aoril 5) Arab Futurism: Imagining the future from an Arab Perspective. *Sail Magazine* <https://sailemagazine.com/2021/04/arab-futurism-imagining-the-future-from-an-arab-perspective/>
- Knight, T. (1980). Latin American Futurism: A Comparative Perspective.

Knorr Cetina, K. (2001) Objectual practice. In K. Knorr Cetina, T. R. Schatzki, & E. Von Savigny (Eds.), *The practice turn in contemporary theory* (pp. 175–188). London: Routledge.

Konrad, K., & Böhle, K. (2019). Socio-technical futures and the governance of innovation processes—An introduction to the special issue. *Futures*, 109, 101-107.

Konrad, K., Van Lente, H., Groves, C., & Selin, C. (2016). 16 Performing and Governing the Future in Science and Technology. *The Handbook of Science and technology studies*, 465.

Kornberger, M. (2013). Disciplining the future: On studying the politics of strategy. *Scandinavian Journal of Management*, 29, 104–107

Kuskelin, A. (2022). Usos de ahora y ahorita: Estudio comparativo entre el español mexicano, peruano y ecuatoriano.

Latour, B. (1993). *We have never been modern* (C. Porter, Trans.). Harvard University Press.

Leiby, J. (1960). Carroll Wright and Labor reform: The origin of labor statistics (No. 46). Harvard University Press.

Lösch, A., Grunwald, A., Meister, M., & Schulz-Schaeffer, I. (Eds.). (2019). *Socio-technical futures shaping the present: Empirical examples and analytical challenges*. Springer Nature. Lösch, A., Grunwald, A., Meister, M., & Schulz-Schaeffer, I. (Eds.). (2019). *Socio-technical futures shaping the present: Empirical examples and analytical challenges*. Springer Nature.

Loui, G.C. (n/d) Polynesian Futurisms. Website  
<https://polynesianfuturism.wordpress.com/>

Luba, A. R. (2017). *The Change Game: A Critical Game For Recognizing & Generating Alternative Futures*.

Ludwig, D., & Ruphy, S. (2021). Scientific pluralism. *Stanford Encyclopedia of Philosophy*.

Lury, C., Fensham, R., Heller-Nicholas, A., Lammes, S., Last, A., Michael, M., & Uprichard, E. (Eds.). (2018). *Routledge handbook of interdisciplinary research methods*. Routledge.

Marroquin, A., & Saravia, A. (2022). Trust and beliefs about robots in Latin America. *International Journal of Social Economics*.

- Marroquin, A., & Saravia, A. (2022). Trust and beliefs about robots in Latin America. *International Journal of Social Economics*.
- Marx, L. Does improved technology mean progress? *Technology Review*, vol. 90, Jan. 1987, p. 32
- Matters, S. (2019). Strategic Foresight in Métis Communities: Lessons from Indigenous Futurism.  
[https://openresearch.ocadu.ca/id/eprint/2804/1/Matters\\_Samantha\\_2019\\_MDES\\_SF\\_I\\_MRP.pdf](https://openresearch.ocadu.ca/id/eprint/2804/1/Matters_Samantha_2019_MDES_SF_I_MRP.pdf)
- McDonald, L. (2001). Florence Nightingale and the early origins of evidence-based nursing. *Evidence-Based Nursing*, 4(3), 68-69.
- Medina Vásquez, J. E., Becerra, S., & Castaño, P. (2014). *Prospección y política pública para el cambio estructural en América Latina y el Caribe*. Cepal.
- Merla-Watson, C. (2019). Latinofuturism. In *Oxford Research Encyclopedia of Literature*. Oxford University Press.  
<https://doi.org/10.1093/acrefore/9780190201098.013.648>
- Mignolo, W. D. (2008). Preamble: the historical foundation of modernity/coloniality and the emergence of decolonial thinking. *A companion to Latin American literature and culture*, 12-52.
- Miles, I. (2010). The development of technology foresight: A review. *Technological Forecasting and Social Change*, 77(9), 1448-1456.
- Miller, R. (2007). Futures literacy: A hybrid strategic scenario method. *Futures*, 39(4), 341-362.
- Miller, R. (2018). Introduction: futures literacy: transforming the future. In *Transforming the future* (pp. 1-12). Routledge.
- Miller, R. (2018). Sensing and making-sense of Futures Literacy: towards a Futures Literacy Framework (FLF). In *Transforming the Future* (pp. 15-50). Routledge.
- Miller, R. (2018). *Transforming the future: Anticipation in the 21st century* (p. 300). Taylor & Francis.
- Mitchell, A., & Chaudhury, A. (2020). Worlding beyond 'the' 'end' of 'the world': White apocalyptic visions and BIPOC futurisms. *International Relations*, 34(3), 309-332.



Molella, A. P., & Knowles, S. G. (Eds.). (2019). *World's Fairs in the Cold War: Science, technology, and the Culture of Progress*. The University of Pittsburgh Press.

Montaruli, S. (2016). El concepto de integración en el discurso de Simón Bolívar: Perspectivas para el presente. *Las relaciones interamericanas: continuidades y cambios*, 189.

Moore, M. L., & Milkoreit, M. (2020). Imagination and transformations to sustainable and just futures. *Elementa: Science of the Anthropocene*, 8(1).

Morgan, D. (2002). Images of the future: a historical perspective. *Futures*, 34(9-10), 883-893.

Moujan Mahdian (2021) *Rural Futurism - Other Ways of Doing Architecture*. Master Thesis. KU Leuven Sint. Lucas, Brussels, Belgium

Mueller, M. (2017). *Will the internet fragment?: Sovereignty, globalization, and cyberspace*. John Wiley & Sons.

Muller, N. (2022). *Lost Futurities: Science Fiction in Contemporary Art from the Middle East* (Doctoral dissertation, Birmingham City University).

Mussardo, G., & Merlone, A. (2010). Boltzmann: the genius of disorder. *International Journal of Thermophysics*, 31, 1225-1233.

Nelson, Alondra (2002). "Introduction". *Social Text*. 20 (2): 1-15.  
doi:10.1215/01642472-20-2\_71-1. S2CID 143327773

NOLAN 2008 <https://org.uib.no/nolan2008/spanish/index.html>

Nwosimiri, O. (2021). Race, ethnicity and a post-racial/ethnic future: A philosophical reflection. *Filosofia Theoretica: Journal of African Philosophy, Culture, and Religions*, 10(2), 159-174.

Okorafor, Nnedi (11 October 2019). "Africanfuturism Defined". [needing.blogspot.com](http://needing.blogspot.com).

Older, M. (2019, June 17). The United States should welcome a strong united Latin America. *The New York Times* <https://www.nytimes.com/2019/06/17/opinion/future-united-latin-america.html?fbclid=IwAR3wWEEes25oobgfWrfi5QjHWC8gXtCY0tLhMm97p15GrHR7RMOs4Fe-Tjs>

Osorio, A. (2022). Why Chuño Matters: Rethinking the History of Technology in Latin America. *Technology and Culture*, 63(3), 808-829.

Paniagua, K. (2019). Are We (Really) Designing Futures? The Design of Tomorrow Program at CENTRO. *Journal of Futures Studies*, 23(4), 37-50.

Parikka, J. (2018). Middle East and other futurisms: imaginary temporalities in contemporary art and visual culture. *Culture, Theory and Critique*, 59(1), 40-58.

Pedroza, A. S. (2018). *Futuros possíveis: um estudo antropológico do Museu do amanhã* (RJ). Bachelor Thesis. Universidade de Brasília.

Perez, C. S. (2020). "Towards a New Oceania": On Contemporary Pacific Islander Poetry Networks. *College Literature*, 47(1), 240-247.

Pink, S. (2022). Methods for researching automated futures. *Qualitative Inquiry*, 28(7), 747-753.

Polak, F. (1961). *The Image of the Future*, vol. 1. New York: Oceana.

Poli, R. (2015). The implicit future orientation of the capability approach. *Futures*, 71, 105-113.

Poll, R. (2020). Colonial Pandemics and Indigenous Futurism in Louise Erdrich and Gerald Vizenor. *Pop Matters*.

Quicho, A. (2022, Jan 9) Tropical Futurism envisions the climate of our fate. WIRED <https://www.wired.com/story/futurism-climate-change-tropics-art/>

Quijano, A. (1999). Colonialidad del poder, cultura y conocimiento en América Latina. *Dispositio*, 24(51), 137-148.

Quintana, M. (2021). Futuros personales: La transformación social ocurre cuando se transforman las personas. *Telos: Cuadernos de comunicación e innovación*, (118), 58-63.

Ramírez, Catherine S. "Afrofuturism/Chicanafuturism: Fictive Kin." *Aztlán: A Journal of Chicano Studies*, vol. 33, no. 1, 2008, pp. 185-194.

Ramírez, Catherine S. (Fall 2004). "Deus ex Machina: Tradition, Technology, and the Chicanafuturist Art of Marion C. Martinez" (PDF). *Aztlán*. 29 (2): 57. doi:10.1215/9781478003403-024.

Raphals, L. (2013). *Divination and prediction in early China and ancient Greece*. Cambridge University Press.

Reina-Rozo, J. D. (2023). Futuros, especulaciones y diseños para otros horizontes posibles. *Andamios, Revista de Investigación Social*, 20(51).

RESOL-2020-10-APN-JGM. Republica de Argentina.

<https://www.boletinoficial.gob.ar/detalleAviso/primera/225011/20200131>

Rhodes, R. (2012). *Visions Of Technology: A Century Of Vital Debate About Machines Systems*. A. Simon and Schuster.

Rivera Cusicanqui, S. (2018). *UN MUNDO CH'IXI ES POSIBLE*. Tinta Limón.

Roberts, A. (2006). Golden Age Science Fiction 1940–1960. In *The History of Science Fiction* (pp. 195-229). London: Palgrave Macmillan UK.

Roca, R. P. (2022, December). La noción de 'imaginación radical' para cambiar el mundo. Conexiones y disparidades con la visión de Buckminster Fuller. In *Revista Anales* (No. 61, pp. 33-49).

Rose, G. (2006). *Visual methodologies: an introduction to interpreting visual materials*. Sage Publications.

Sábato, J. (2011). *El pensamiento latinoamericano en la problemática ciencia-tecnología-desarrollo-dependencia*. Biblioteca Nacional. Argentina

Sagasti, F. (1981). *Ciencia, tecnología y desarrollo latinoamericano* (No. 42). Fondo de cultura económica.

Sagasti, F. (2004). Thinking about the Future: Trends and scenarios in Latin America. *Development*, 47(4), 15-25.

Sagasti, F. R. (1989). Crisis and challenges: Science and technology in the future of Latin America. *Futures*, 21(2), 161-168.

Santibañez, C. (2014, Jan 11) La apropiación en panoptica, los últimos días del futuro. LimaGris <https://limagris.com/la-apropiacion-en-panoptica-los-ultimos-dias-del-futuro/>

Schwab, K. (2017). *The fourth industrial revolution*. Currency.

Schwarz, A. (2021). "Practice believing that the world can change radically": Interview with Malka Older. *Critical Reviews on Latin American Research-CROLAR*, 9(1).

Seefried, E. (2014). Steering the future. The emergence of "Western" futures research and its production of expertise, 1950s to early 1970s. *European journal of futures research*, 2(1), 1-12.

Seefried, E. (2014). Steering the future. The emergence of "Western" futures research and its production of expertise, 1950s to early 1970s. *European Journal of futures research*, 2(1), 1-12.

Sekhar, R., Shah, P., & Iswanto, I. (2022). Robotics in Industry 4.0: A Bibliometric Analysis (2011-2022). *Journal of Robotics and Control (JRC)*, 3(5), 583-613.

Shapin, S., & Schaffer, S. (2011). *Leviathan and the air pump*. In *Leviathan and the Air Pump*. Princeton University Press.

Shulruff, T., & Wyman, L. (2023). A Trip Through Tomorrowland: The World Expo as Futures Lab. *World Futures Review*, 19467567231151718.

Sismondo, S. (2020). Sociotechnical imaginaries: An accidental themed issue. *Social Studies of Science*, 50(4), 505-507.

Smith, S. (2013, July 31) Ethic Futurism in the Gulf. The Sigers  
<http://thesigers.com/analysis/2013/7/31/ethnic-futurism-in-the-gulf.html>

Sovacool, B. K., Bergman, N., Hopkins, D., Jenkins, K. E., Hielscher, S., Goldthau, A., & Brossmann, B. (2020). Imagining sustainable energy and mobility transitions: Valence, temporality, and radicalism in 38 visions of a low-carbon future. *Social Studies of Science*, 50(4), 642-679.

Spanier, J. R. (2021). Rural futurism: assembling the future in the countryside. *ACME: An International Journal for Critical Geographies*, 20(1), 120-141.

Steingo, G. (2017). African Afro-futurism: Allegories and speculations.  
<https://academiccommons.columbia.edu/doi/10.7916/D8T16MK5/download>

Suchman, L. (1993). Working relations of technology production and use. *Computer supported cooperative work*, 2, 21-39.

Sulāīman Majali, "Towards a Possible Manifesto; Proposing Arabfuturism(s) (ConversationA)," in *Cost of Freedom. A Collective Inquiry*, 2015, 173–76,  
<http://costoffreedom.cc>.

Sunkel, O. (1971). Desarrollo, subdesarrollo, dependencia, marginación y desigualdades espaciales; hacia un enfoque totalizante. *Investigación Económica*, 31(121), 23-77.

Talabi, W. (Ed.). (2020). *Africanfuturism: An Anthology*. Brittle Paper.

Tobin (n/d) El tercer mundo después del sol: Antología de ciencia ficción latinoamericana de Rodrigo Bastidas Pérez. *Latin American Literature Today*. <https://latinamericanliteraturetoday.org/es/rese%C3%B1as/el-tercer-mundo-despues-del-sol-antologia-de-ciencia-ficcion-latinoamericana-de-rodrigo-bastidas-perez/#:~:text=Si%20esta%20breve%20descripci%C3%B3n%20resulta,ciencia%20y%20c%C3%B3mo%20se%20crea>

Tola, M. (2018). Between Pachamama and mother earth: gender, political ontology and the Rights of Nature in Contemporary Bolivia. *Feminist Review*, 118(1), 25-40.

Torres-Maldonado, N. (2007). On the coloniality of being: Contributions to the development of a concept. *Cultural Studies*, 21(2-3), 240.

Tsoukas, H., & Shepherd, J. (2004). Introduction: Organizations and the future, from forecasting to foresight. In H. Tsoukas & J. Shepherd (Eds.), *Managing the future: Foresight in the knowledge economy*. Malden, MA: Blackwell Publishing.

Valentine, D., & Hassoun, A. (2019). Uncommon futures. *Annual Review of Anthropology*, 48, 243-260.

Van den Boomen, M., & Lehmann, A. S. (2014). Material object analysis. *New Media Studies Method Reader*, 9.

Van Veen, Tobias C. (2013). "Vessels of Transfer: Allegories of Afrofuturism in Jeff Mills and Janelle Monáe." *Dancecult*. 5 (2): 7-41. doi:10.12801/1947-5403.2013.05.02.02

Varsavsky, O. (1972). *Hacia una política científica nacional*. Ediciones Periferia.

Varsavsky, O. (2013). *Estilos tecnológicos: Propuestas para la selección de tecnologías bajo nacionalidad socialista*. Biblioteca Nacional.

Voros, J. (2003). A generic foresight process framework. *foresight*, 5(3), 10-21.

Walsh, C. (2010). Development as Buen Vivir: Institutional arrangements and (de) colonial entanglements. *Development*, 53(1), 15-21.

Warde, P., & Sörlin, S. (2015). Expertise for the future: The emergence of environmental prediction c. 1920-1970. In *The struggle for the long-term in transnational science and politics* (pp. 38-62). Routledge.

Wenzel, M., Krämer, H., Koch, J., & Reckwitz, A. (2020). Future and organization studies: On the rediscovery of a problematic temporal category in organizations. *Organization Studies*, 41, 0170840620912977.

- Wheelwright, R. V. (2005). *Personal futures: Foresight & futures studies for individuals*. Personal Futures Network, Harlingen, Texas.
- Whitehead, A. N. (1933). *Adventures of ideas*. Cambridge: Cambridge University Press
- Whyte, J., Comi, A., & Mosca, L. (2022). Making futures that matter: Future making, online working, and organizing remotely. *Organization Theory*, 3(1), 26317877211069138.
- Wilkie, A. (2018). Speculating. In *Routledge Handbook of interdisciplinary research methods* (pp. 347-351). Routledge.
- Wilkie, A., Savransky, M., & Rosengarten, M. (Eds.). (2017). *Speculative research: The lure of possible futures*. Taylor & Francis.
- Williams, G. T. (2017). *Re-Imagining America: rural futurism, speculative fiction, And reckoning with a new era* (Doctoral dissertation, Massachusetts Institute of Technology).
- Wisnioski, M., & Wisnioski, M. H. (2012). *Engineers for Change: Competing visions of technology in 1960s America*. MIT Press.
- Wolfe, Gary K. (16 February 2021). "Gary K. Wolfe Reviews *Africanfuturism: An Anthology*, Edited by Wole Talabi." *Locus Magazine*.
- Womack, Y. (2013). *Afrofuturism: The World of Black Sci-Fi and Fantasy Culture*. 1st edition, Independent Publishers Group.
- Yaszek, Lisa (November 2006). "Afrofuturism, science fiction, and the history of the future." *Socialism and Democracy*. 20 (3): 41–60. doi:10.1080/08854300600950236. S2CID 20605379.
- Zhang, G. Z. (2021). Sinofuturism and Its Uses: Contemporary Art and Diasporic Desire. *Verge: Studies in Global Asias*, 7(2), 86-93.

APPENDIX A

INTERVIEW MATERIALS – CHAPTER 5

The role of this appendix is to offer the instruments and materials shared with the institutional board review of ASU about the interviews reported in Chapter 5. It begins with the letter of exemption and then the interview protocol, followed by the invitation and consent for participants.



EXEMPTION GRANTED

[Lauren Keeler](#)  
[CGF: Future of Innovation in Society, School for the \(SFIS\)](#)  
 -  
[Lauren.Withycombe@asu.edu](mailto:Lauren.Withycombe@asu.edu)

Dear [Lauren Keeler](#):

On 2/11/2022 the ASU IRB reviewed the following protocol:

Type of Review:	Initial Study
Title:	Latin American Futurism: influences, methods, and practices from foresight practitioners
Investigator:	<a href="#">Lauren Keeler</a>
IRB ID:	STUDY00014420
Funding:	None
Grant Title:	None
Grant ID:	None
Documents Reviewed:	<ul style="list-style-type: none"> <li>• Consent ENG 3FEB22, Category: Consent Form;</li> <li>• Instrument, Category: Measures (Survey questions/Interview questions /interview guides/focus group questions);</li> <li>• Latin American Futures Interviews, Category: IRB Protocol;</li> <li>• Recruitment ENG 3FEB22, Category: Recruitment Materials;</li> </ul>

The IRB determined that the protocol is considered exempt pursuant to Federal Regulations 45CFR46 (2) Tests, surveys, interviews, or observation on 2/11/2022.

In conducting this protocol you are required to follow the requirements listed in the INVESTIGATOR MANUAL (HRP-103).

If any changes are made to the study, the IRB must be notified at [research.integrity@asu.edu](mailto:research.integrity@asu.edu) to determine if additional reviews/approvals are required. Changes may include but not limited to revisions to data collection, survey and/or interview questions, and vulnerable populations, etc.

REMINDER -- Effective January 12, 2022, in-person interactions with human subjects require adherence to all current policies for ASU faculty, staff, students and visitors. Up-to-date information regarding ASU's COVID-19 Management Strategy can be found [here](#). IRB approval is related to the research activity involving human subjects, all other protocols related to COVID-19 management including face coverings, health checks, facility access, etc. are governed by current ASU policy.



## Short Consent Template

### Latin American Futures - Interview

I'm Martin Perez Comisso and a graduate student under the direction of Professor Lauren Keeler, in the School for the Future of Innovation in Society at Arizona State University. I am conducting a research study to understand the ways in which future-making processes happen in Latin America.

I am inviting your participation in a Zoom interview of no more than 90 minutes in length. The questions in the interview are about your professional experience as a futures practitioner in Latin America. The questions are not of a personal nature. You have the right not to answer any question, and to stop participation at any time. Your participation in this study is voluntary. If you choose not to participate or to withdraw from the study at any time, there will be no penalty. You must be 18 or older to participate in the study.

There are no foreseeable risks to your participation in the study and there are no benefits. However, your participation will help characterize the ways of future-making in Latin America. The interview will be semi-structured with open ended questions about your professional experience. All information you provide in the interview will be kept confidential. Once the interview is complete, the transcript of the interview will be anonymized and your responses will be assigned a random number. The numbers and associated names will be kept in a password protected file on ASU's encrypted server and only accessed by the research team. The results of this study may be used in reports, presentations, or publications, and results will be shared in aggregated form. Also, consider that de-identified data may be shared with other researchers for future research in case that is formally requested. Any update on the research team or products of this project will be informed via mail to you opportunistically.

We are also asking your permission to audio record the interview. Only the research team will have access to the audio recordings via online medium. Once transcripts are derived from the audio recording, the recording will be deleted. If you would like to use your video during the interview to be able to share your screen during the conversation and share visual information, please let the research team know. Only in case of a participant request will video information be captured. Videos will be deleted upon completion of the analysis of the transcripts, no more than 12 months from the date of the interview. The transcripts and any video recording will securely be stored in an encrypted ASU server. Transcripts will be deleted after a period of 3 years. To protect your identity, any published quotes will be anonymous. Please refrain from using names or other identifying information during the interview. Let me know if, at any time, you do not want to be recorded and I will stop.

If you have any questions about the research study, please contact the research team that responds to this email or write to Professor Lauren Keeler ([Lauren.Withycombe@asu.edu](mailto:Lauren.Withycombe@asu.edu)). If you have any questions about your rights as a subject/participant in this investigation, or if you believe that you have been put at risk, you can contact the Institutional Review Board through the Office of Integrity and Research Assurance ASU, at (480) 965-6788.

Please, sign below consent that you prefer, according to your own decision.

	I DO AGREE
I agree to participate in this study and audio-record my answers for transcription purposes only	
I also agree to be video recorded during this interview, to share visual materials or register with the interviewer	

Name:

Date:

Preferred mail address:

Code:

]

Hi [Name],

I'm [Martin Perez Comisso], a [Ph.D. student at the School of Innovation in Society at Arizona State University], and I am conducting a research study under the direction of Prof. Lauren Keeler to understand Latin American Futurism.

I would like to invite you to participate in an interview via Zoom because of your knowledge, production, and diverse experiences. The interview questions will focus on your influences, practices, and perspectives on future-making. I will provide you with all the interview questions before the interview, and you can also prepare different materials or resources that might be relevant on your responses. You can also refuse to answer any questions and stop the interview at any time.

The interview is estimated to take until 90 minutes and will be audio-recorded for transcription purposes only. However, if you would like the interview to be video recorded, we can accommodate such a request. Your participation in this study will be voluntary and you can withdraw in any stage of it. The interviews will be conducted in English.

This is an opportunity to understand the production, use and resources of Future-making in Latin America. There are no foreseeable risks or discomforts associated with your participation your participation in the study and your involvement will be kept confidential. However, you may decide at any time to share that you participated in this study and share the results with other audiences.

If you have any questions about the research study, please contact Professor Lauren Keeler (Lwithyco@asu.edu).

We will be attentive to your communication.

Sincerely,

### **Instrument: Latin American Futures project**

Sample: Selected professionals on strategy (public or private), future studies (academia or consultancy), science fiction (authors or creators), and speculative design born in any Latin American nation. Priorities to get women for gender parity, indigenous, disable or migrant people (within or outside Latin America) working on future-making.

Estimated time: 60 to 90 minutes for interview. For the extension, send questions in advance to make preparation easy.

Interviews to be performed on English. Language should be selected beforehand by the interview.

- I. **Part 1: Trajectories and influences on Future**
  - 1) Tell me a little about what makes you be interested on Futures. Where did you grow up, and what did you envision in that time about your own future?
  - 2) How do you started to work on future-oriented projects [describe a little about its background]?
  - 3) How did you get trained in your work?
  - 4) What kind of things inspire you in your work? What are your main referents for your current projects?
  
- II. **Part 2: Latin American practices of future-making**
  - 5) Do you have local influences in your work? (Public Media, Local Art expressions, cultural traditions from your country; from another place?
  - 6) Does your work contain some political or ideological driver – feminism, anticolonialism, environmentalism, anti-capitalism, modernization, etc.-?
  - 7) Does your work get influence by any Latin American creator, scientist, or scholar? How that influence appears in your work?
  - 8) How do you incorporate Latin American people (local populations) in your practice of future-making?
  - 9) Do you have some ideas about the Future of Latin America? What role Latin America will play in the world in [X] years?
  - 10) What do you understand by "Latin American Futurism"? There are some elements that you think are exclusive of "Latin American futurism"?
  
- III. **Part 3: Socio-technical futures**
  - 11) What do you think is the role of "Technology" as dimension in your work on future-making?
  - 12) What do you think is the role of technology on social change? Do you have some theoretical or philosophical understanding on this regard?
  - 13) How do you envision that socio-technical future in Latin America?
  - 14) What emerging technologies do you think will make a larger impact on Latin America? Why? [Interviewer will have a list of 10-20 technologies to inspire the question, in case interviewee request examples of emerging technologies]
  - 15) Do you believe that Latin America have something to contribute to the future of humanity that just our culture can provide? What would be that?

APPENDIX B

LIST OF INTERVIEWS – CHAPTER 5

<b>Gender – Areas of Domain</b>	<b>Country</b>	<b>Date</b>
Male – Foresight	Argentina	February 21, 2022
Female – Design + Policy	Argentina	May 6, 2022
Male – Science Fiction	Argentina	March 29, 2022
Female – Foresight + Policy	Bolivia	April 12, 2022
Male – Design + Foresight	Brazil	March 24, 2022
Male – Design + Policy	Brazil	March 10, 2022
Male – Design + Science Fiction	Brazil	March 7, 2022
Female – Science Fiction	Brazil	March 17, 2022
Female – Design	Brazil	March 17, 2022
Female – Science Fiction	Brazil	March 3, 2022
Male – Policy + Foresight	Brazil	February 23, 2022
Male – Design	Brazil	March 10, 2022
Female – Foresight + Science Fiction	Brazil	March 17, 2022
Female – Foresight	Brazil	April 19, 2022
Male – Science Fiction + Foresight	Brazil	April 18, 2022
Female – Foresight	Brazil	April 14, 2022
Male – Science Fiction	Brazil	April 25, 2022
Female – Foresight + Design	Brazil	April 18, 2022
Male – Foresight	Brazil	May 9, 2022
Male – Foresight + Design	Brazil - Netherlands	April 23, 2022
Female – Policy + Design	Brazil - US	April 26, 2022
Female – Foresight	Chile	April 13, 2022
Female – Foresight + Policy	Chile	March 28, 2022
Female – Science Fiction	Chile	March 31, 2022
Male – Science Fiction	Chile	March 1, 2022
Male – Science Fiction	Chile	February 21, 2022
Male – Foresight + Policy	Colombia	April 13, 2022
Female – Foresight	Colombia	March 31, 2022
Male – Foresight	Colombia	March 23, 2022

Male – Science Fiction	Colombia	April 25, 2022
Male – Design + Foresight	Colombia - España	April 15, 2022
Female – Design + Foresight	Colombia - España	April 11, 2022
Female – Policy + Design	Colombia - US	March 28, 2022
Male – Science Fiction	Ecuador	March 7, 2022
Male – Foresight	Ecuador	March 4, 2022
Female – Science Fiction	España	March 1, 2022
Male – Science Fiction + Policy	Italy	March 1, 2022
Female – Design + Foresight	Mexico	April 1, 2022
Male – Design	Mexico	March 23, 2022
Female – Science Fiction	Mexico	March 28, 2022
Female – Science Fiction	Mexico	March 30, 2022
Female - Foresight	Mexico	March 14, 2022
Female – Foresight	Mexico	March 16, 2022
Male – Design + Policy	Mexico	March 4, 2022
Male - Foresight	Mexico	March 5, 2022
Female – Foresight + Design	Mexico	February 18, 2022
Female – Science Fiction	Mexico	March 19, 2022
Female – Science Fiction	Mexico	April 9, 2022
Female – Policy + Foresight	Mexico	April 19, 2022
Female – Policy + Foresight	Mexico	April 29, 2022
Male – Design + Foresight	Mexico	May 4, 2022
Female – Foresight	Mexico	May 3, 2022
Male – Policy + Foresight	Peru	March 10, 2022
Male – Science Fiction + Design	Peru	March 18, 2022
Female – Foresight	Peru	May 6, 2022
Male – Foresight	Uruguay	March 28, 2022
Male – Science Fiction	US – Puerto Rico	April 14, 2022
Female – Science Fiction	US - Cuba	February 15, 2022
Male – Policy + Foresight	Venezuela - España	April 16, 2022

## BIOGRAPHICAL SKETCH

Martín Andrés Pérez Comisso (Santiago de Chile, 1988) is an STS researcher and teacher working towards increasing awareness about technological realities. Initially trained as Chemist (B.Sc. and M.Sc.) at the University of Chile, his research interest combines an interest in creative methods of socio-technical systems, governance of emerging technologies in Latin America, intersections between futures and technological thinking, new modes of scientific understanding (Maker Communities, Citizen Scientist, Open Science). He likes to build skills that make disciplinary scholars to engage with other ways of knowing. On a personal level, he committed to a covalent relationship with Dr. Matías García García since August 2014, which some societies might understand as same-sex marriage. Martín is obsessed with Pokémon, Oscillation, and Metamodernism. He adores penguins, has practiced CrossFit since around a decade ago, and loves tabletop RPGs, which he plays or narrates every chance he finds. His work and ideas are available on his webpage, [www.mapc.tech](http://www.mapc.tech), unless a crazy algorithm blocks the access of humans to the internet. Oscillating. Sociotechnical. 土龍.