

## Ecuador: Thirdspaces Amidst Social Conflict

MICHAEL M. J. FISCHER  
MASSACHUSETTS INSTITUTE OF TECHNOLOGY  
UNITED STATES

### Abstract

Four STS (science, technology and society) collectives (from Kenya, Turkey, Japan, and Ecuador) presented their archives and accounts of their collective work at two meetings of the Society for the Social Study of Science (4S) in Sydney 2018, and New Orleans 2019. These presentations are not only very interesting in themselves, but are housed on a digital platform (Platform for Experimental Collaborative Ethnography or PECE) that poses the question—and attempts to build a solution—of how ethnographic materials can be digitalized and made available for productive further activity. As one possible response, four *engagements* texts are published on STS-Infrastructures: “KENYA: Techpreneur, Transnational Node, Kibera” (2023a), “TURKEY: Inside and Outside the University” (2023b), “Japan’/Japan On Line: NatureCulture” (2023c), and “ECUADOR: Thirdspaces amidst Social Conflict” (2023d), along with a consolidated list of references entitled: “Bibliography for Varieties of STS” (2023e). All of these are extensions of the overarching text published in the *Engagements* genre of the *ESTS* journal entitled: “Varieties of STS: Luminosities, Creative Commons, and Open Curation” (2023f). This *engagement* focuses on Ecuador.

### Keywords

bibliography; creative commons; open curation; PECE platform; STS across borders; space; place; thirdspace

### Introduction

We are called upon to regain our own words, to decolonize them, to work together in order to communicate from our own diversity, from our own cosmovision. We have to create a media capable to express who we really are. ([Puno Declaration May 2009](#), IV Continental Summit of Indigenous Peoples of Abya Yala, Puno, Peru)

One might say that *thirdspaces* or *thirdplaces* (based in FLACSO<sup>1</sup>) as developed by María Belén Albornoz and Gaudys Sanclemente (2019) and Maka Suarez and Jorge Nuñez (2019a, 2019b, 2019c), are the inverse or

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<sup>1</sup> Facultad Latinoamericana de Ciencias Sociales (FLACSO).

negative space of *NatureCulture*. The first is politically and ethnographically located; the latter is largely located in the cloud. *Thirdspaces* also contrasts with informal networks of the kinds described in Turkey and Kenya. *Thirdspaces* build incrementally with political-institutional purpose (“to change the social system”); the others work as discussion spaces or networked NGOs. The place of online work is an important tool, but not always a primary one in *thirdspaces*. Other digital tools such digital data sets will become more and more important as state statistics become more available and debatable.

Three readings are possible of the current Ecuador STS situation: FLACSO as a creation of *thirdspaces* (multiple campuses across Latin American countries); state capture of the political mobilizing slogans of pluri-nation and *sumak kawsay*, the fate of Yachay Technical University and Knowledge City; and indigenous media and investigative journalism.

The model of *thirdspaces* is one of creating learning communities at the local level (which the Kibera example might also be); then evolving epistemic-moral communities that can be stabilized through academic programs, centers, and summer schools; and then insert themselves in government policy making and Ministry deliberations (both as a form of recognized expertise, and through networks of former STS students in government). The Ecuadorian *thirdspaces* model also draws upon regional Latin American research traditions (including collective rather than individual research and journalism), as well as enrolling scholars from Europe and the United States. For an important overview of Latin American STS programs in the first issue of the new Latin American journal, *Tapuya* (see [Kreimer and Vessuri 2018](#)).

Albornoz and Sanclemente add the tag to Ecuador as “the middle of the world” and indeed north of Quito or *Kitu* in Kechua (from *qui* or *quitso*, “middle” or “center” + *tu*, “earth”) is a tourist site called “Ciudad Mitad del Mundo,” where you can observe the Coriolis effect (water turning anti-clockwise in the northern hemisphere, and clockwise in the southern hemisphere) and try to walk the line between the two hemispheres with your eyes closed balancing the opposed haptic pulls of each hemisphere. This line is equidistant from the poles, but it is also where the equatorial bulge is strongest (rotational effect of the earth making the earth’s diameter wider by approximately 42 kilometers than the distance between the poles) and so also a weaker gravitational pull (it is closer to the center of the earth, making you weigh less). It is also said that due to the bulge the nearby Chimborazo volcano is the closest place on earth to the sun (further from the center of the earth than Mt. Everest and so reaching higher). Although it is said that the actual line of the equator is 240 meters away at Cayambe, I can testify that the Coriolis effect does obtain here.

There are at least two important STS histories to this spot. The monument at the site commemorates the first Geodetic Mission of the French Academy of Sciences (with some Spanish officers since Spain claimed the land as its colonial territory), sent to determine the equatorial line in 1736, one of several such expeditions. Two centuries later, this latitude could be incorporated into the first comprehensive South American Datum (with its center however in Brazil), and then the World Geodetic Datum. STS’ers looking for role models of women scientists who created obligatory passage points, enrolled allies, and worked networks across transnational rivalries, might turn to the scientific autobiography (more detailed and fun

than Bruno Latour's book, "Aramis," 1996) of the lead scientist, including the section on how this was accomplished for South America (Fischer 2005). These geodetic measurements and constructions provide empirical examples over time of how models get constructed, implemented (space flights, GPS), and refined. Many more STS stories might be found in the surroundings. Back in Quito on a mountain ridge overlooking the valleys of Cumbaya and Tumbaco, is the spot from where Francisco de Orellana went down the length of the Amazon to the Atlantic, losing 4,000 Indian porters along the way (as in Werner Herzog's film *Aguirre: The Wrath of God*, 1972). The trail down on both sides of the Andes went through the territory of the Yumbo traders, left largely untouched by the Incas who depended on their trade ("networks" in STS lingo perhaps). The Rio Napo further north runs amidst both the oil industry and efforts to protect the rainforest ("boundary work" in STS lingo perhaps). The area was occupied by the Omagua (a branch of the Tupi-Guarani) who migrated from Brazil to Ecuador, Columbia, and Peru, and settled also around Coco before the Spanish arrived, and then were moved back down into the rainforest by the Spanish. In the process they became Kichwa (Quechua) speakers ("reframing" in STS lingo perhaps, or intercultural and pluriverse mobilities). The multispecies interactions and knowledges both in the rainforest and the coastal islands (such as the Galapagos) are available in rich profusion. Ecotourism in a number of places is an experimental industry for learning to balance multiple interests. La Selva, one of the earliest ecolodges on the Rio Napo (founded in the 1980s and renovated in 2012) is on land that belongs to the local Kichwa (formerly Omagua) community, to whom the lodge pays rent to help with education and medical care. A cadre of young naturalists, including indigenous youth who live in the villages, are being trained, and can be para-STSerS.

Insofar as STS scholars have become interested in indigenous knowledge, near the monument at the "Middle of the World," there is a Huaorani *choza* (house), a "site-specific installation," in artist or museum terms, built by a Huaorani family to showcase indigenous housing. It is said to be on the site of an actual residence here in 1875. It has become a museum space for various material tools, crafts, and displays about life before the oil industry. These include some taxidermically preserved anaconda as well as *tsantas* (shrunken heads) of Ecuador's Jivaro/Shuar tribes, and a display on the technology of how the shrinking was done. The Shuar/Jivaro were lionized as national heroes in the 1995 war with Peru, not just for aiding the Ecuadorian forces (transporting food and munitions, and doing reconnaissance), but they also formed an elite Special Forces unit (the Arutam Brigade). Living along the Peruvian border, in a reversal of roles from 1995, they resisted President Correa's auctioning of three million hectares of Amazonian rainforest in the Yasuni Reserve to Chinese oil companies (after his failed attempt to get the international community to pay Ecuador to not drill for oil, if they wanted to protect the rainforest). 8,000 military personnel were sent in with tanks, drones, helicopter gunships. They razed the Shuar Federation offices and carted away the computers.<sup>2</sup>

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<sup>2</sup>If not the earliest, one of the earliest documentary films in this territory is about a 1936 expedition by Henry Nielson down the Rio Pazdaza, filmed by Rolf Blumberg, *In the Land of the Huvudiagarnas* or *Headhunters*, on display at the Quito Cultural Center Museum.

A Kichwa (or Quechua) neologism *sumak kawsay* (or *buen vivir* in Spanish) was formulated by Ecuadorian indigenous social movements in the 1990s and was incorporated into the 2008 Ecuadorian constitution with rights of nature as a moral-social aspiration, building upon widespread indigenous *practices* of communitarian and ecological well-being. Similar formulations exist along the Andes from the Mapuche in Chile and Guaraní in Paraguay, and north into the Guna in Panama and Mayan Tsotsil and Tseltal speakers in Mexico. In Ecuador, Bolivia, and Colombia, the political project under these terms involves struggles over extractive mining, with repeated strikes and demonstrations, as well as political party electoral politics. The term *sumak kawsay*, or its variants, has been incorporated into the constitutions of Ecuador, Bolivia, and Colombia, which has partially obscured the underlying struggle to reconstruct the social contract, class relations, the political economy, and the important frictions between communal rights (cultural self-defense) and human (individual) rights.<sup>3</sup>

### Thirdspaces and the FLACSO Initiative

Emergence from a learning community . . . implies debating about space and its representations ([Albornoz 2023](#)).

Facultad Latinoamericana de Ciencias Sociales ([FLACSO](#)) is the Quito campus of the twelve-university postgraduate network launched by UNESCO in 1957. María Belén Albornoz provides an insider's account of how she and colleagues (initially six students and three professors) managed to insert STS into the Ecuador curriculum (first under the Media Studies Department, and then the Public Affairs Department), and then develop its socializing function in the public and private governance structures of Ecuador (rather than developing STS in a disciplinary fashion as "heroic achievements at the frontiers of knowledge"). The advocacy of such a position had to negotiate barriers and controversies between old disciplinary paradigms of research and new research practices, in each case used to legitimize political interests. It had to create a "lived counterspace" and try to institutionalize paths to community building in the thirdspaces between government planning, private sector initiative, and indigenous demands for a new social contract. The charge is devising institutional assemblages with leverage to do policy-relevant research and experimental implementation, utilizing stabilized but flexible and still ever-learning STS platforms with double or triple attachments to comparative international models (rather than traveling packaged standardized models), regional solutions, and sustainable development.

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<sup>3</sup>In October 2022, Mapuche activists and supporters managed to have a national referendum on a new Constitution. It was defeated, but the struggle continues. The *New York Times* carried a brief profile of a celebrity young woman activist rap singer, Millaray Jara Collio (MC Millaray) who with her father, also a rapper, continues the struggle ([Bartlett and Munita 2023](#)). The full page profile with pictures was carried the same day as the three quarter page report on blockades in Peru, noted above ([Taj and Garro 2023](#)).

I re-narrate Albornoz's account as a reading, foregrounding the social change aspect (from learning community to national planning) rather than inscribing it within older discipline-creating STS vocabulary. I follow this up in the next two sections, also following Albornoz's accounts along with others, by embedding the STS/FLACSO story in a broader framework of competing planning models for innovation, with a special focus on the stalling Yachay Technical University and Knowledge City; and finally embedding it within the larger political struggles over the Ecuadorian social contract thrown into sharp relief through the lens of indigenous journalism. The set of Albornoz's nested papers ([Albornoz 2019](#); [Albornoz and Sanclemente 2019](#); [Albornoz and Tabares Merino 2020](#); [Albornoz 2023](#)) together make a case for the utility of STS framings beyond the STS field itself, better positioned than the usual management consulting tools which are focused on advancing the goals of the organization that hires them rather than on changing the social contract or updating the evolving alliances and ecosystems of knowledge-production and governance (public and private).

Albornoz and colleagues began their longitudinal campaign to institutionalize STS by exploring in seminars, classes and research projects a mix of STS genealogies. They invited international STS scholars to lead discussions on (a) action-research around issues of technology and poverty, structural inequalities, and management models for sustainable development (with Hernan Thomas from Argentina); (b) learning communities in the traditions of Orlando Fals Borda and Paulo Freire, and how to address crises of representation in the double sense of defining the nature of problems and of making political claims (with Ernesto Laeras from Colombia); (c) political artifacts or the notion that all major artifacts have political effects (with Langdon Winner from RPI in the United States); (d) network mobilization, design of networks, continued networking for modifying research proposals, redrafting articles, continuing or abandoning inquiries in reaction to industry responses (with Dominique Vinck from Grenoble); (e) and techno-economic networks (with Juan Manuel Gonzalez from Columbia).

Institutionalization then began with an online program teaching 50 students across the country, and participating in an advisory group in preparation for the 2013–17 five-year National Plan of Science, Technology and Innovation. With this policy assessment became research and training objects of the FLACSO group. They established a Lab that could host foreign students, host summer schools, and do online training with students across the Spanish speaking world (Spain and Latin America). Consolidating steps included joining international STS societies ([ESOCITE](#), [AS](#)); making Memoranda of Understanding (MoUs) with other universities (in Peru, Colombia, Argentina) and with international organizations (the Canadian [IDRC](#), [Fulbright](#), [UNESCO](#) and [UNDP](#)); publishing in journals and whole books on computers and on broadband e-inclusion; and hosting biannual summer schools, on a model long established by ESOCITE, and with ESOCITE hosting doctoral summer schools.

The establishment of [Kaleidos](#) in 2018, a collaboration between the University of Cuenca and FLACSO was a high point of creating a center of action-research, led by Maka Suarez, Jorge Nuñez, and Israel Idrovo. Despite two successful years, with the devastating Covid-19 pandemic that swept across Ecuador in 2020, Kaleidos was not continued in Cuenca by its two sponsors. But in its two years of vitality, it pursued projects on green energy, private prisons, pedestrian mobility in public spaces, witch-hunting, violent deaths and

missing persons (with an Ethnodata multimedia/multimodal platform). It set up a digital radio for podcasts. It held an international seminar on ethnographic methods in STS, led by the then president of 4S (Kim Fortun), along with Joseph Dumit and Elizabeth Roberts.

Meanwhile a support network was established among STS/FLACSO, Kaleidos, and Kuna (a community of engaging science and indigenous ancestral knowledge) called the [CTS Lab](#). Two new graduate STS programs were established at the National Polytechnic School (a masters in STS, and a PhD in Technology Management), both with STS Scholars Pablo Kreimer and Fernando Herrera as advisors. Post-Covid-19 is a new terrain for continued consolidation and institutionalization of what Albornoz calls the STS *epistemic community*, but that is also a *social contract* and *moral community* as the next two sections should illustrate.

### State Capture of Sumak Kawsay and the Fate of Yachay Knowledge City

*Anthropolog[ical STS]* operates in set of third spaces where new multicultural ethics are evolving out of demands that cultures attend to one another and within technoscientific networks where the demands of the face of the other, history and autobiographical figurations counter the reduction of all to the same. ([Fischer 2003](#))

The case of Yachay Tech University and Yachay Knowledge City as a centerpiece for creating a new knowledge society, and freeing Ecuador from its oil and IMF dependencies, would seem to be ready made for STS analysis. It is one of many such initiatives globally, some of which have thrived (Singapore's Biopolis and One North, South Korea's Songdo) and some of which have had less success (Abu Dhabi's Mazdar Institute and Mazdar City ([Günel 2019](#)); Russia's Skolkovo and Skolkovo Institute of Science and Technology ([Simonova 2019](#))).

There are at least three STS accounts of Yachay, plus a number of brief updates in *Science* ([Castillo-Chavez et al. 2017](#)), *GEM* ([Global Entrepreneurship Monitor 2017–2018](#), [2019–2020](#)), *Nature Index 2019*, and elsewhere. Henry Chavez and Jacqueline Gaybor ([2018](#)) suggest the South Korean model and consultancy were determinative. José David Gómez-Urrego ([2019](#)) interviews planners, including former President Rafael Correa, and suggests a series of advisors from Cal Tech, the Research Triangle in North Carolina, and elsewhere, contributed to early shifting plans, under two temporalities in tension: a sense of both opportunity for longer term planning, and a limited window of time in which to gamble the political capital gained in three national elections along with a positive economic environment. Albornoz ([2019](#)) partly follows Chavez and Gaybor's recognition of the South Korean influence as a packaged export, but then goes on to develop a criticism of a self-defeating sidelining of parallel developments and international alliance building in the private sector, which would be needed for success. In STS speak, she says the government failed to nurture the industry strand of "the triple helix" (government, academia, industry). Gómez-Urrego suggests the triple helix should really be a pentagonal helix (adding on community and environment), something that will be institutionalized by the new 2008 Constitution's five-branches rather than three branches of government. Albornoz uses the Yachay case to further develop her account of the institutionalization of STS in Ecuador (and its ups and downs such as the closure of Kaleidos, but the opening

of graduate programs at the National Polytechnic, and the continued pursuit of regional summer schools to create a new generation of STS-informed planners, entrepreneurs, and officials operating in government and the public sphere.

To understand this as an STS case, one needs to work out not only the planning and implementation of a new technical university (focused on science), an adjacent technology park, and a city for the growing knowledge economy community; but one also needs to work out the national level politics and governmental reorganization to support the creation of a Knowledge City initiative, let alone, of four new universities.

The Presidency of Rafael Correa (2007–17) exposed the sharp conflict between on the one hand neoliberalism and the transnational oil and mining economies, and on the other hand efforts at finding other sources of revenue (in a new “innovation” economy), reducing poverty and inequality, stimulating participatory politics, protecting indigenous cultural rights as well as human rights, protecting the environment, and defending *Abya Yala* (a Kuna language term, “land of vital blood,” now used across Latin Americas by indigenous groups, parallel to the use of “Turtle Island” by North American indigenous nations. Correa came to power as leader of the PAIS alliance with the slogans of creating a citizen revolution with a new *pluri-national* Constitution that recognized the majority indigenous and mestizo cultures (approved in 2008), creation of a new knowledge society based on upgrading the education system, and a new social economy of *sumak kawsay*. In the flush of enthusiasm of the time, Correa’s movement was described as inspired by Simon Bolivar (Bolivarism) aligned with similar populist movements in Bolivia and Venezuela. Educated as an economist in Belgium and the US (Ph.D. from the University of Illinois), and having been part of a group since 1999 focused on solving the Ecuadorian foreign debt problem, Correa promised to break the hold of neoliberalism that was binding Ecuador in dependency. He had two big ideas: making Ecuador a center of innovation following the models of Korea and the Asian Tigers, and a proposal that the international community should come up with funds (like carbon offsets) to replace the oil and mining revenues that Ecuador would forego if it protected the rainforest and prevented oil drilling (thereby helping the world with climate change mitigation and stabilization). When that did not work, he returned (or felt forced to return) to leasing oil rights, leaving many in his coalition feeling betrayed, and charging him with growing authoritarianism and corruption. In the meantime, he initiated ambitious ideas for science, technology and innovation (STI) as the engine of development, driven by an education agenda. In his three terms as President, the minimum wage was raised, poverty was reduced, and per capita GDP rose. But at the end of his third term, there was a recession, an earthquake that cost an estimated 3% of GDP and forced him to accept an IMF loan and a return to dependence on oil. He was succeeded by his vice-president, who moved to the right, and increasingly lost popular support, leaving office with a 9% approval.

Albornoz analyzes Ecuadorian STI (science, technology and innovation) programs (both public and private sector) as of three types: top-down linear models of development (basic research, applied research, development plans, dissemination; “traveling models” of international best practices); and bottom-up private sector alliance building. Network analyses of these requires production of evidence in the shape of quantifiable indicators, aided by Gephi graph analysis and visualization software. The higher education

system for Correa and other actors became a key center of public policy, as did designing instruments to improve the indicators.

### State Design

Between 2009–14 spending on science, technology, and innovation grew by 122%, raising the number of researchers to 1.59 per thousand people in the economically active population (exceeding the Latin American average of 1.30), with the government responsible for 63% of the spending. Scholarship programs were expanded, international “wise men” enrolled, and the Yachay City of Knowledge designed, Albornoz agrees with Chavez and Gaybor, on the model of Korea’s Songdo (and with Korean consultants). But with such massive spending (a billion U.S. dollars on Yachay alone), planning shifted back to the government sector. Six Innovation and Technology Transfer Hubs were set up to work with universities to promote entrepreneurship based on international best-practices; but these had no private sector partnerships, even though they were meant to train managers for private sector entrepreneurs.

### Private Sector Initiative

The private sector, in the meantime, Albornoz says, developed its own associations, corporations, and think tanks, with important links to the Inter-American Bank, Development Bank of Latin America, and other international organizations. These helped create a more structured financing ecosystem, convened symposia to introduce the language of entrepreneurial and innovation ecosystems (with help from Babson College), and System B (a framework in concert with UN Sustainable Development Goals, with help from the American nonprofit consultancy, B Lab, founded by Jay Coen, Bart Houlahan, and Andrew Kassov). *Systema B* involved a certification system and innovations in the legal system to recognize “benefit corporations” (producing social benefits along with profits). There are now 26 such benefit corporations in Ecuador. In 2017, Albornoz reports, Ecuador was judged by GEM (the Global Entrepreneurship Monitor) to be among the most entrepreneurial countries in the region, and a Strategy EE12020 was planned to make Ecuador among the three most attractive countries to start a business in Latin America. But job creation was low (72% of enterprises were a one-person business, 92% of entrepreneurs had no international clients). (In the 2019 GEM report, Ecuador does not even register. This set the grounds for new laws that would facilitate creation of simplified stock companies using digital platforms to minimize bureaucracy; crowdfunding platforms, venture funds, and other financing models, plus a special labor regime. Despite the private sector’s key role in formulating this new ecosystem, its further development was put under government agencies without private sector participation, except a few advisory positions. The law’s provisions became opaque and the few academics invited for consultation tended to support a linear model of support for universities, rather than building on the dynamics of learning platforms that the private sector had forged.

### Yachay

Two key casualties have been the Yachay Institute of Technology and the Yachay Knowledge City. Yachay was to be one of four new universities to jump start the new knowledge economy and four new poles of growth in different parts of the country: a university for the arts in Guayaquil, a National University for Education in Azogues, and a regional Amazonian University in Tena. These were to be built upon a

reconstruction of the education system, backed by a new Organic Law of Higher Education ([\[2010\] 2018](#)) LOES. Scholarships were to be provided for 11,000 or more Ecuadorians to go to the best universities in the world (not unlike a similar program for Singaporeans, albeit on a broader educational base). All universities were to be recertified, and upgraded so that all faculty would have Ph.D.s. and be on tenure track jobs. Those universities that could not meet the criteria would be closed (there had been a recent growth of unregulated private universities, and many faculty members in all universities had at best master's degrees). Yachay was the lead new university-and-knowledge city built from scratch (not unlike Mazdar City in Dubai, or Songdo near Incheon in South Korea, and Skolkovo in Russia near an older technology park). It was built on the land of a former sugar plantation, relatively close to the northern town of Ibarra (population 300,000) with which eventually it was planned to merge. The technology park and knowledge city, began with ten companies—doing blood and genetic analysis for health care; fertilizers, biotech, and superfood for animal husbandry—and there were said to be agreements for forty more companies. Large multinationals such as IBM, Intel, Microsoft, and China Telcom it was hoped would set up some operations here for big data analysis and internet communications technology. The new city would be 40% green space, a garden city, have a fab lab, botanical garden, and perhaps a seed bank. A community college opened to train technicians. Yachay was projected to have a population of 12 to 15,000 people by 2017, and an eventual size of 200,000.

In the planning phase, visits were made to more than 20 other technology parks, including the North Carolina Research Triangle, Silicon Valley, Urbana-Champaign, and Huntsville, Alabama, as well as Songdo, South Korea. According to Hector Rodriguez, the general manager of Yachay, they particularly learned about models and technical management from the Research Triangle. As the university came together, advisory trustees were brought in from Cal Tech, Penn State, and elsewhere. Faculty were recruited with “competitive” salaries and promises of state-of-the-art labs and facilities. Paola Ayala, Ecuador's first woman Ph.D. in physics came home from Vienna to be dean of physical sciences and nanotechnology; Paul Baker came from Duke to be dean of geology; Vladimiro Mujica came from Arizona State to be dean of chemistry; Catherine Rigsby, a geologist from East Carolina University, came to be Chancellor. The university was provided Ecuador's most powerful supercomputer.

But in 2017, six of the leadership, including all of the above, were fired by a new rector, Carlos Castillo-Chavez, a Mexican born mathematical biologist, who also continued half time as a Regents Professor at Arizona State, and co-director of a center there in computational and modeling sciences. Oil prices had dropped and he claimed a need for austerity. The new Ecuadorian President, Lenin Moreno, seemed not to have the same vision for the university as Correa. Castillo-Chavez planned (or was given a mandate) to raise the student population to 5,000 within four years from just over 1,000. He downplayed the mission of the university to produce competitive world class research in favor of a more traditional goal of teaching undergraduates; and wrote a scathing email on the state of the university justifying the firing of the senior leadership. He wrote that despite the excellent facilities, there was little productivity, no efforts to bring in extramural funding, and most professors would not be hired at US universities ([Castillo-Chavez et al. 2017](#)). To save money, he decided to make junior professors serve as deans.

Troubles continued into 2019. According to a report in *Science*, 44 faculty were fired or left, the budget was cut by 12% (\$1.8 million USD), salaries were cut and a new ninth president of the university was elevated from the faculty, mathematician Hermann Mena, after two previous ones had been ousted by the Secretariat of Higher Education, Science, Technology and Innovation (SENESCYT) ([Wessel and Ortega 2020](#)). In October 2019, the university began giving tenure to 55 professors in order to meet the accreditation criteria of percentage of Ph.D.s and tenured faculty, set by SENESCYT, without which the university would be under threat of closure. But in March, SENESCYT stopped the process and re-evaluated the professors by itself, pressuring those already promised tenure to sign away that right. (One who refused to sign, had his salary taken away.) Partly the firing of 44 faculty was a purge of foreigners (35 or 80%), but only a few Ecuadorians were hired to replace them. The university returned to teaching primarily in Spanish.

In Albornoz's STS analysis, if I read her correctly, two important factors have led to this unraveling: first is the retreat from a knowledge ecosystem or triple (or pentagon) helix approach; and second, interrelated, is the linear model of development still entrenched in the thinking of many in academia and government. Hers is a renewed call for the pragmatics of an STS-informed understanding that economic and social development is not linear in the way product design is taught, but needs opportunistic as well as active networks. Both Constitutional values of *sumak kawsay* and *pluri-nationalism*, for the moment, it seems, have been captured, as just slogans, by the state. But society and social movements do not rest; they continue to contest, and re-inscribe differently their aspirations for *sumak kawsay* and *pluri-nations*. Albornoz provides this third key piece by way of a case study of indigenous journalism, a tool, if not the only one, for watch dog accountability, investigation, and mobilization.

#### **Indigenous Media: from Collective voice (REDCI) to Investigative Journalism (Riklsinakuy).**

The dignity and diversity of their cultures, traditions histories and aspirations should be reflected in public education and the media; the creation of their own means of social communication in their languages without any discrimination ([Art. 57, Constitution of Ecuador 2008](#)).

There is an ever growing literature on inter-culturalism, pluri-nationalism, *sumak kawsay* (*bien vivir*), social movements (blockades, protests, and actions across the Americas) in defense of Abya Yala, protection of the land, cultural rights in tension with universal human rights, revitalization of traditional knowledge, experimentation with shamanic cosmovisions, rituals of inter-linguistic communication and harmonization, and revalidation of figures such as Rumiñahui and Dolores Cacuango<sup>4</sup> ([Fischer 2018, 114–](#)

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<sup>4</sup> Rumiñahui was a general in the service of the only Ecuadorian Inca, Atahualpa, and is remembered for resistance to the Spanish conquerors. Dolores Cacuango (1881–1971) was a founder of the Ecuadorian Indigenous Foundation, an activist for agrarian reform, bilingual education, and access to land. There was a wonderful exhibition on her life at the Cultural Center Museum in Quito in February 2020. Albornoz nicely suggests they represent the male and female parts of Ecuador's pluri-national social movement struggles.

29). And there is a growing literature on the struggles between indigenous organizations and the oil and mining industries supported by the government ([Reeve 2022](#); [Riofrancos 2020](#); [Sawyer 2004](#)).

Tactics such as road blockades are watched borrowed and customized among peoples in different nation-states. As I write in February 2023, the most extensive use is in Peru with blockades effectively bringing the economy to a halt ([Taj and Garro 2023](#)). International organizations provide venues for sharing tactics and strategies, and formulating international norms, such as the 1989 International Labor Organization signing the Indigenous and Tribal Peoples' Convention, No. 169, which was ratified by the Government of Ecuador, and in turn, provided legal precedent for the Constitution of 2008 ([International Labor Organization 1989](#)). UNESCO has likewise tried to become a networking forum for emerging uses by indigenous communities of ICTs ([Borrero 2016](#)). There have been the Continental Summits of Indigenous Peoples of the Abya Yala, beginning in 2000 in Mexico, 2004 in Ecuador, 2007 in Guatemala, 2009 in Peru ([Picq 2013](#)); and Continental Indigenous Women's Summit Meetings of Abya Yala in Puno, Peru, 2009, and in La María Piendamó, Colombia, in 2013 where the "dual struggles" of indigenous women for voice both in hegemonic international feminism, and within traditional cosmovisions of gender divisions and gender violence ([Galeano Sánchez and Werner 2014](#)). Among the more interesting events at such summits, cited by Albornoz and Gema Tabares Merino ([2020](#)), are rituals of communication and harmonization among different language groups, in efforts to create a collective voice.

But on the scale of Ecuador's political stage, and its educational and STS agendas, as sketched in the previous section on Yachay, Albornoz and Tabares Merino ([ibid.](#)) trace the growth of indigenous organizations, newspapers, radio, and digital technologies (websites, social media) as they respond to, and are shaped by, political circumstances. The earliest indigenous newspaper, *Ñucanchic Allpa*, (*Our Land*), was a bilingual Spanish and Kichua one, started in 1935 with communist party support, and widely distributed in the Ecuador highlands, until shut by the government, because, Albornoz and Tabares Merino say, publishing in other languages than Spanish was considered a threat ([ibid.](#)). Another indigenous paper did not happen until 2007 in Imbabura Province in the north, together with a website and Facebook page. Radio in the 1960s was an important medium, supported initially by the Liberation Theology Catholic priests to teach literacy, and which now after 60 years has trained hundreds of indigenous leaders, and multiplied radio stations.

For Albornoz's institutionalizing vision of STS, the most interesting journalistic innovation perhaps was the *Red de Comunicadores Interculturales Bilingües del Ecuador* (REDCI) founded in 2010 by 14 young journalists trained at the Central University in Quito, in the Communication Program. Operating independently without financial support, they wrote anonymously and collectively, signing everything *Coordinación REDCI*. While partly for self-protection, Albornos and Tabares Merino stress that this mode of communicating was primarily to assert the collective nature of knowledge, derived from traditional communal oral modes of knowledge transmission and collective ownership ([ibid.](#)). Although REDCI largely closed down in 2013 (its Twitter feed closed in 2018), it paved the way for other digital media projects. In a way, the Communication Program at the Central University and REDCI parallel the institutionalizing efforts of Albornoz and colleagues at FLACSO. REDCI's afterlife consisted of members becoming media coordinators in CONAIE

(Confederation of Indigenous Nationalities of Ecuador), and others starting the investigative journalism website, *Riksinakuy*, with a crew of some thirty-seven columnists. The demands for a pluri-national state advocated by REDCI, CONAIE, and other indigenous organizations fed into the political movement that supported Rafael Correa, but as Albornoz and Tabares Merino conclude, the state appropriated the slogans of pluri-nationalism and *sumac kawsay*, while also arresting and incarcerating indigenous leaders (they mention Shuar leader Pepe Luis Achacho arrested in 2011) who protested mining and oil corporations in the Ecuadorian Amazon ([ibid.](#)). More generally they conclude, the indigenous movements succeeded in gaining visibility and voice in the political arena, but did not reduce the inequalities in society, change the economic matrix of production based on extraction, or redo the social contract as Correa had promised. In February 2020, indigenous leaders in protests against cutting of gasoline subsidies forced the government to reverse course.

If Ecuador's *thirdspaces*—STS/FLACSO, Yachay, REDCI, *Riksinakuy*—are the inverse or negative space of *NatureCulture* insofar as they must negotiate among double-bind imperatives such as accommodating more and more indigenous demands while remaining beholden to a neoliberal rapaciously extractive economy, the metaphor of Ecuador as the middle of the earth is not just a historical or geodetic one, but a crucible of no exit conflict until the topologies of the cat's cradle or ethical plateaus shift. Rumiñahui versus Francisco Orellana; Dolores Cacungo versus the feudal system: things are no longer as suppressed as they once were, and tomorrow could be different from today. If the model of *thirdspaces* is one of creating learning communities becoming epistemic-moral ones, stabilizing and disseminating through networks and lineages within academia, government, and worlds of trade, design and diplomacy, including both defensive blockades and realist chess-like strategy (out maneuvering opponents), then there is hope.

## Conclusions

What is PECE that we should be mindful of it? At worst a capacious set of rabbit holes. At best, a platform for conversation, for comparative juxtaposition of complex and differently situated social experiments, and a place for deep ethnography to find a place in a world where publishers and readers want superficial bottom lines: 'what is the take away message?' or 'don't have the time to invest.' Time it seems may be the currency of illumination, but digital means allow time to be used well. The four "instances" of PECE use, or contributions through reflections on Making and Doing exhibits at 4S meetings in Sydney and New Orleans, do provide a series of comparative juxtapositions around digital media, STS institutionalization or positioning, science city style development projects, smaller tech cluster developments, mega development projects, civil society mobilization. Overall these points of luminosity also militate against telling only deficit narratives, and for a slow and uneven shift in modes of thinking from linear project engineering or object-oriented programming to more inclusive biological cultivation and ecological flourishing. Knowledge on the PECE platform can be read in alternative ways; sense-making is situational and opportunistic, and sense making is often most clarified in the uses to which it can contribute. Multiplicities for sure. Wisdom and humility, when all else fails.

Final query. Do long texts such as this one need to be fragmented, tagged, and curated, into perhaps GPT-3 chunks, to be useful on new digital platforms such as PECE? Will this be required for next generation literacy of humans and machines alike, or more-than-human readers, analysts, and synthesizers?

### Acknowledgements

I would thank the authors of each section and the collective endeavor—including Aalok Khandekar and Kim Fortun and Mike Fortun,—and Amanda Windle, the members of the Editorial collective, and Clément Dréano and Federico Vasen who helped on editing.

### Author Biography

Michael Fischer trained in geography and philosophy at Johns Hopkins, social anthropology and philosophy at the London School of Economics, anthropology at the University of Chicago. Before joining the MIT faculty, he served as Director of the Center for Cultural Studies at Rice. He has conducted fieldwork in the Caribbean, Middle East, South and Southeast Asia on the anthropology of biosciences, media circuits, and emergent forms of life.

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