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► **To cite this version:**

Emilia Sanabria, Joseph Dumit. Set, Setting, and Clinical Trials: Colonial Technologies and Psychedelics. The Palgrave Handbook of the Anthropology of Technology, 2022. halshs-03882720

**HAL Id: halshs-03882720**

**<https://shs.hal.science/halshs-03882720>**

Submitted on 6 Oct 2023

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# Set, Setting, and Clinical Trials: Colonial Technologies and Psychedelics

## Experiment

*Joseph Dumit and Emilia Sanabria*

This chapter critically engages with the model of evidence-based medicine (EBM) by analysing the tensions besieging randomised controlled trials (RCTs) as they encompass phenomena that challenge their capacity for universalisation, standardisation, and metrification. We bring together ethnographic work on technologies of healing and associated modes of knowing deployed in RCTs and psychedelic clinical trials, and ceremonial uses of the Amazonian herbal brew ayahuasca in urban Brazil. Building on a review of anthropological work on clinical trials, we argue that RCTs, even psychedelic ones, have been captured by the pharmaceutical industry in its quest to grow profits rather than reduce illness. Drawing on feminist and decolonial work, we question the use of technology as a category for thinking about health, recognising with la paperson (2017, p. 17) that as they mutate, they become ‘technologies of alienation, separation, conversion of land into property and of people into targets of subjection’.

We do not engage with anthropology of technology literature that distinguishes ‘non-industrialised’ indigenous practices from Euro-American ones as

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M. H. Bruun et al. (eds.), *The Palgrave Handbook of the Anthropology of Technology*, [https://doi.org/10.1007/978-981-16-7084-8\\_15](https://doi.org/10.1007/978-981-16-7084-8_15)

if there were a metric that could make sense of it.<sup>1</sup> We are interested in the role that the category of technology plays in continued industrialised colonial, genocidal, and dispossessive violence. This includes the institutions of intellectual property, EBM, RCTs, pharmaceuticals, drugs, active ingredients, industrial medicine, diagnostic standards, investment capital, and treatment sovereignty.

Following la paperson (2017, pp. 24–25), we call these *colonial technologies*, because they continue patterns of erasure, unequal killing and letting die, of denying the ability to speak, sing, or learn from plants, the sovereignty to live on and with lands, and to decide presents, futures, and pasts. The use of the category of technology, with regard to medicine, continues to make a world divided into knowledge as a domain separate from belief, people who know more or less, things that appear to be neutral, and a world in which the ongoing arrangements, inequalities, and violence of people are separated from both knowledge and things.

It is not only biomedicine as a ‘technology’ that is colonial, but EBM and RCTs are also capitalising and individualising technologies that produce pharmaceuticals and other treatments in a ‘magic bullet’ form. This narrative form presumes and produces diseases and treatments as individual and technical, as the domain of experts, and often as a market. The frame of technology (as ‘applied science’) hinders or erases the ways in which relations of power preselect which problems are ‘health-related’ and which are ‘political’ (see Nelson 2013).<sup>2</sup> One of the main ways that technology does this is by distracting analysis away from structural relations that hold up power and onto supposed self-possessed actors, or Heroes.

It is difficult, notes science-fiction writer Ursula K. Le Guin (1989), to tell a tale where the action is not directly imputable to a Hero. The narrative form, Le Guin laments, has been colonised by victorious, triumphant, aggressive Promethean tales. With characteristic wit, Le Guin proposes that the problem goes back to a shift that took place when restless hunters took off, bringing back epic tales along with the added calories. Originally, she jokes, humans made do very well as gatherers. But it is ‘hard to tell a really gripping tale of how I wrestled a wild-oat seed from its husk, and then another, and then another, and then another, and then another’ (Le Guin 1989, p. 165). Le Guin states that we urgently need stories about the container for the thing contained. To get at this story we have to get over the killer story with Action and Heroes.

We have been inspired by Le Guin and STS scholars who take up her concern with world-making as we think through the question of technology, EBM, pharmaceuticals, and non-white healing modalities. We find it useful to analyse pharmaceutical clinical trials and psychedelic medicine experimentations through the feminist critique of the distinction between tools and containers. For Zoë Sofia (2000), foregrounding ‘container technologies’ requires attention to labour. Building on the heuristic contrast between tool and container, we think of the rise of the RCT and its specialised focus on magic bullets as a

kind of fantasy mammoth hunt that obviates other less dramatic and heroic processes which are foundational to healing. Containers perform their functions in different ways, using modes of encounter that can be described as actively cultivated passivity. Using the idea of container technologies, we anchor our historical discussion of pharmaceutical clinical trials with a particular attention to how they claim to discover or prove a magic bullet experimentally by controlling for environmental factors.

EBM stems from at least three facets of the rise of statistical medicine in the mid-twentieth century. The first relates to the need to create a new standard of proof for the statistical causation of emphysema through smoking. Tobacco company obfuscation of facts prevented strong trends from being legally provable (Proctor 2012). The technology invented in response was the consensus report in which the state established a means for unifying competing theories of knowledge, which led to the development of clinical guidelines that would give rise to EBM (Brandt 2007). The second concerns the creation of experimental statistical medicine through RCTs. Decisions about the relative effectiveness of two drugs for acute conditions could be settled by giving randomised groups of sufferers one of the two drugs and tracking which group got better overall. This was seen as a better way to learn than polling experienced doctors about their observations regarding the two drugs. Historian Harry Marks (2000) notes that in the case of acute diseases and treatments like antibiotics, for which endpoints and improvement were easier to define, trials worked quite well. In these cases, neither the diagnosis of who has the disease nor the effectiveness of the treatment was contested. This relatively limited set of ‘magic bullet’ cases is not the norm in medicine, however. For chronic diseases, there were a host of difficulties: ‘the strategy of collecting more and more data in the course of a study ran the risk of producing more, not less, controversy’ (Marks 2000, p. 161). The third aspect of statistical health involved large-scale prospective clinical studies. The 1950s Framingham Heart Study included over 5000 members of one small city who were carefully monitored over generations. It discovered connections between smoking and biomarkers like cholesterol and future events like heart attacks and death. The study produced the notion of risk factors like elevated cholesterol levels, hypertension, and smoking. It, too, approached illnesses collectively, even if they were not spread like infectious diseases. Indeed, according to historian Jeremy Greene, by 1961 it was evident to the pharmaceutical industry that drugs could be expanded almost indefinitely (Greene 2007).

Combinations of these three technologies have led to the contemporary evidence-based clinical trial in which risk factors become seen as diseases (or pre-diseases) and in which biomarkers become the measurable outcome of the trial. Succeeding in moving a biomarker in a population in an RCT then takes the place of showing that the treatment works. Described as a ‘double shift’ by Greene (2007), illness began to be seen in an entirely new way. Diseases previously regarded as incurable came to be seen as chronic conditions requiring surveillance and chronic treatment (Dumit 2012).

RCTs succeeded in part because they fit a model of bureaucratic rationality that privileged metrics over experience (Strathern 2000; Adams 2016; Dumit 2010). Lost in their ascendance was their requirement for ideal experimental conditions that are heavily controlled, with real-world noise methodologically purified out. It is this final form of large-scale RCT that has, under the practices that mark the regime of Global Health, become the foundation of evidence-based medicine (Brives et al. 2016). One way in which medical anthropology critiques this growing prevalence of RCTs is through attacking the reductiveness of its magic bullet approach, or what Richard Degrandpre (2006) calls ‘pharmacologicalism’; this is founded on the supposition that it is the drug’s chemical structure that determines the drug’s action in the body and not the environment of the treatment or the experience of the patient (so-called non-pharmacological factors). In this sense, the hero of the RCT story is the magic bullet, the active arrow of action. RCTs strip or purify the agency of the complexity of the intervention to ascribe all the credit to the single molecule, generating spectacular profit margins in the process (Dumit 2012; Sunder Rajan 2017).

### PSYCHEDELICS AS CRITIQUES OF MAGIC BULLETS

The case of the rise, demise, and contemporary ‘renaissance’ of psychedelic clinical trials (Chambers 2014; Sessa 2012; Tupper et al. 2015) directly challenges RCTs in this regard. Psychedelics (from the Greek *psyche*, or mind, and *delos*, to reveal) like LSD were among the first drugs ever to be used in psychiatry in the 1950s and 1960s. Psychiatrist Charles Savage, at the 1955 LSD Research roundtable of the annual meeting of the American Psychiatric Association, first proposed the idea that ‘set and setting’ were not environmental variables to be eliminated but an inseparable part of psychedelic experience and efficacy (Oram 2018, p. 35).<sup>3</sup> The ‘container’, in other words, was seen to be part of the drug. Set and setting went on to be popularised by Timothy Leary and colleagues in *The Psychedelic Experience* (Leary et al. 1964), becoming canonical in the field of psychedelic exploration and acquiring a more explicit notion of intention and design of appropriate conditions, spaces, and expectations to guide psychedelic experiences.

The popularity of the idea of set and setting in the field of psychedelics emerges from its function as a kind of boundary object, being at once specific and simultaneously nebulous (everything that is not the substance is potentially the set and setting). Accounting for the synergistic biological and setting effects of psychedelics in RCTs proved a huge challenge from the outset, as psychopharmacology was becoming ‘oriented toward magic bullet treatments’ (Oram 2018, p. 211). In psychedelic clinical trials, there is a huge signal (vs a small, diffused signal rendered statistically relevant by the apparatus of the randomised controlled trial). Psychedelic clinicians are often unsure how to make sense of these changes within the grammar of cause and effect, dose and outcome measure. Psychedelic medicine thus ends up being a critique of

pharmacologicalism, insisting that the container of set and setting is critical to accounting for efficacy, whilst paradoxically trying to validate its efficacy through the apparatus of the RCT.

The therapeutic model at work here is somewhat orthogonal to current psychotropic medication use in psychiatry, in which antidepressants and anti-psychotics are given in standardised doses over long periods of time (often years, and unsupervised). By contrast, psychedelic-assisted therapies make use of a few—or even one—drug or dosing sessions that are always supervised, generally preceded by preliminary psychotherapeutic sessions, and always followed by integration sessions in which sense is made of the experience alongside a health provider. It is the unique combination of the substance and this context, which is modelled on traditional ritual contexts, that is understood by advocates of this method to be such a powerful modality. This is to say, that the effects of psychedelic substances are dependent on the social dynamics and subjective intentions that play out during the dosing session; they are medicines in context. They have also been described as ‘amplifiers’ of wider processes (Talin and Sanabria 2017; Langlitz 2012; Winkelman and Roberts 2007).

While we find Degrandpre and Oram to be insightful in their critiques of RCTs and the magic bullet through emphasising the importance of set and setting, we also want to notice how the idea of set and setting does not by itself disrupt the magic bullet metaphor. Many contemporary approaches to psychedelics still approach the drug as the critical variable and increasingly attempt to pin down experimentally the precise dosage constellation of set and setting needed to obtain optimal clinical results. In other words, even though these clinical trials give unprecedented attention to the setting of the pharmacological intervention, our sense is that they still operate within an underlying pharmacological ideology in which the new magic bullet is the molecule in a particular container. As investors continue to move in, it is interesting to observe how the psychedelic ‘revolution’ in mental health is being swept up by the broader tendency for innovative health solutions to be instrumentalised within capitalist frameworks of growth.

### CAPITALISING ON MEDICINE

Under imperatives of corporate growth, the primary purpose of RCTs for pharmaceutical companies has become that of creating the proof that a treatment works, separate from knowing what it actually does. RCTs thus became perverted in their aims: turning from technologies for evidence of the best treatment, to technologies for generating the largest profit (Dumit 2012; Greene 2007). Anthropologists, STS scholars, and other critical researchers have shown that the pharmaceutical industry is extremely aware of contexts, of set and setting, precisely in order to control and then deny them so as to sustain the ideology of direct biological action and continue to overshadow the complex and uncertain feedback systems through which pharmaceuticals are

rendered efficacious in lived bodies (Light et al. 2013; Healy 2012; Hardon and Sanabria 2017).

In other words, pharmaceutical company RCTs are also set and setting containers in their own right, in which all forms of care are identified as keenly as possible, in order to exclude them. Researchers work diligently to create specific contexts in which their molecules can shine. It turns out to be incredibly hard to keep the individual differences between providers, and how they care for patients, out of the RCT. It is also nigh on impossible to keep the caring that an experiment conveys in a world increasingly devoid of health care from infecting patients with hope or income (Fisher 2020; Le Marcis 2015; Pollock 2019). Most placebo research can be understood as the refusal to recognise care as a therapeutic force because it cannot be monetised by the company doing the study. Placebo response involves a complex of histories and approaches too large to review in this chapter. Here we focus on the fact that the market-oriented RCT is often controlled precisely in order to show that the drug is effective through comparison with those patients not receiving the drug, those in the placebo arm of the trial. Those patients need to be comparable and, therefore, they are often given a placebo, a pill that looks like the real one but lacks the active ingredient or magic bullet. Here a problem arises. Many patients in these arms of the trials experience statistically significant and biologically measurable improvement on the placebo. This is known as the placebo response. Indeed, simply being in a therapeutic system of any kind triggers endogenous processes which positively inflect therapeutic outcomes (Walach 2015, p. 132). The use of placebo controls in contemporary corporate RCTs can be read as an attempt to contain the effects of care providers and holding space.

Placebo is a critical and expensive problem for pharmaceutical companies. As anthropologist Lakoff puts it, the RCT is not about testing whether a drug works; the magic bullet is already assumed by the time the trial is run. The question is whether or not the context—the diversity of patients, doctors, environments, and so on—can be stabilised enough to prove the drug’s efficacy to regulators.

This can be seen in drug developers’ use of the term ‘signal detection’ to refer to the goal of the trial. Here the drug is already presumed to have targeted efficacy—that is, a signal to transmit—and the problem is how to pick up the signal. From the perspective of drug developers, when trials fail, it is not that the drug does not work but that ‘noise’ has crept into the process. (Lakoff 2007, p. 65)

In other words, pharmaceutical companies do care about set and setting, precisely in order to prove that they do not matter. As Lakoff discovered, they strive in the most impressive ways to outsmart context. Among other things, companies try to figure out if there are some types of people who are helped more by the context than others; such placebo responders might then be excluded from the trials. The caregivers might be too caring, and so the

protocol can be sanitised so that the drug is the only form of care. Lakoff found that clinical trial consultants take this to a strangely logical limit, and was told by a trial methodology specialist that identifying and excluding trial ‘non-specific supportive contact’ responders (such as ‘overly’ sensitive patients who respond to tasks like filling in forms) was necessary to improve trial results (Montgomery cited in Lakoff 2007).

From the perspective of patients and public health, this is evil; one should want to include any and all parts of care and context that promote health (Dumit 2018). If reassurance helps a patient recover faster, then why exclude it? Why even distinguish between specific and placebo effects, given that these are additive and synergistic (Walach 2015, p. 115)? Wahlberg (2008b) has shown how medical anthropology itself played a crucial role here by legitimising the notion of symbolic efficacy, leading to a need for RCTs to demonstrate efficacy beyond the placebo. Pharmaceutical companies recognise all of this and smuggle positive synergies in whenever possible, for profit not health. As Caspi points out in a roundtable:

It is no longer a secret, and the pharmaceutical industry knows this, that in any international multicenter trial, the pharmaceutical industry typically has more site candidates than it needs, and that it selects those sites that have in the past performed well for it in terms of showing an effect of its drugs. (Ritenbaugh et al. 2010, p. 136; see also Petryna 2009)

The challenge that psychedelic clinical trials pose to mass pharmaceutical RCTs is that they reveal the degree to which context matters. The Johns Hopkins psychedelic clinical trials on smoking cessation and existential anxiety in patients with life-threatening cancer were landmark interventions, because they showed an incredible size of effect compared with all previous treatments, and they did so thanks to the extensive preparation given to patients, psychotherapy for mindset, and the meticulous production of a caring setting (Johnson et al. 2017). The deeper challenge within psychedelic research communities is whether this can remain in the service of well-being and a more equitable world. In 2018, over 100 researchers signed a ‘Statement on Open Science and Open Praxis with Psilocybin, MDMA, and Similar Substances’. The statement recognised,

From generations of practitioners and researchers before us, we have received knowledge about these substances, their risks, and ways to use them constructively. In turn, we accept the call to use that knowledge for the common good and to share freely whatever related knowledge we may discover or develop. (<https://files.csp.org/open.pdf>)

The signatories committed to placing ‘the common good above private gain, and [to working] for the welfare of the individuals and communities served’. They engaged not to withhold ‘materials or knowledge (experiences,



observations, discoveries, methods, best practices, or the like) for commercial advantage’, and to place ‘discoveries into the public domain, for the benefit of all’. They stated that where patents must be held, these should only be used to cover ‘ordinary administrative costs’. The recognition of mutual generosity in this statement suggests a vision of a different arrangement of politics, medicine, and healing, one not organised as a market but as a self-reflexive commons. But at a recent conference 2020 conference on investment opportunities in the burgeoning field of psychedelic medicine, we found this vision to be very much contested.

*Fieldnotes:*<sup>4</sup> The event began with a self-identified ‘serial investor’ explaining that he had set up his psychedelic biotech startup after his first encounter with ayahuasca as he was ‘backpacking through the Amazon’. ‘This is going to be bigger than cannabis’, another investment expert promised, ‘but it will take longer to get there. This is an *exceptionally complicated space*, with a very high level of entry. But those who have the potential to bring these substances to market will see a huge return on investment.’

The conference marks a transition in the so-called psychedelic ‘renaissance’, which seeks to reinstate demonised psychedelic substances as medicines by showing their surprising efficacy in treating addiction, PTSD, or depression through clinical trials. Initially led by non-profit and philanthropic organisations, the ‘renaissance’ has recently been marked by capitalisation and attempts to stake out intellectual property claims. As psychedelics move into Phase 3 of drug development, their potential to be ‘bigger than cannabis’ is becoming clearer. Panellists repeatedly emphasised how central the RCT is to delivering this promise. Another psychedelic start-up CEO described how ‘the way to scale psychedelic medicines is through the FDA and the FDA values data’. Data, here, refers to solid empirical evidence of the kind produced through RCTs.

The tension inherent among the signatories is that while they agree that medicine needs to change in the long term, in the short term they also want to use clinical trials to generate international acceptance of psychedelic-assisted therapy. In adopting the RCT model actors of the psychedelic revival reinforce the idea of the magic bullet, one that is reduced to a market notion of technology. Many of the newer psychedelic RCTs in turn try to contain and then exclude not just the held space of care, but also all notions of community, place, and the immaterial and transcendental realms. Some of the signers of the statement have betrayed their pledge and are withholding materials and knowledge for commercial advantage. When we have posed questions about the distinction between non- and for-profit to investors and actors in this field, we are often told that this is a ‘fake problem’, and one investor described the issue as one of ‘accelerating access’, reinforcing the assumption that only patents can deliver investment and thereby access.

### ‘AYAHUASCA’/LISTENING TO PLANTS

Ayahuasca is the generic Quechua name that has been globalised to refer to the different herbal brews widespread among indigenous groups in the Upper Amazon region where it is used in shamanic settings (Dobkin de Rios 1984; Labate and Cavnar 2014). In this context, it is understood to have a foundational cosmological significance as a ‘plant teacher’, imparting crucial knowledge through a peculiar form of trans-species communication. Euro-American societies have approached ayahuasca essentially in molecular terms, classifying the brew as a psychedelic, given that they identify N,N-Dimethyltryptamine (DMT) as its main active ingredient. DMT has a similar profile to LSD or psilocybin, operating through the serotonergic activation of 5-HT<sub>2A</sub> receptor agonism (dos Santos et al. 2016).

In the early twentieth century, along the rubber-tapping frontier, ayahuasca shamanic practices syncretised with Christian and Afro-Brazilian religious practices, giving rise to several Christian religions that consecrate ayahuasca, each with its own specific cult and doctrine (Dawson 2013; Labate and MacRae 2010). In the last decade, ayahuasca use has undergone unprecedented global expansion. Regular ayahuasca rituals now take place in over forty countries including Australia, New Zealand, South Africa, Israel, India, Japan, Russia, and twenty-two European countries (Labate and Loures de Assis 2017).

The spectacular diversity of ritual forms that have mushroomed globally as ayahuasca is taken up for a wide array of purposes from healing to self-awareness, experiential curiosity, boosting creativity, communing with Jesus, or neo-shamanic soul retrieval, is such that no single account will ever exhaust the potentialities people are actualising in their myriad uses of the brew. In what follows, we focus specifically on practices that have been qualified as neo-ayahuasca (Labate 2000), to refer to the fact that they are neither Indigenous nor entirely bound by the doctrines of the Ayahuasca churches. These often blend Spiritist, New Age, and Indigenous elements and have a strong psycho-spiritual dimension. What interests us in these specific ritual formations, in the context of the argument we are making here about container technologies, is the way they actively refuse to know what the problem is ahead of the encounter with the plant spirit. This can be read as a rejection of the epistemology and model of the magic bullet.

Isabel Santana de Rose (2006) provides an ethnographic analysis of a Brazilian spiritual healing centre that makes use of ayahuasca and counts a significant number of medical professionals in its congregation. In the particular centre she studies, a ‘shamanic cure’ was developed whereby medical doctors, who are part of the congregation and commonly give orientation on managing psychiatric diagnosis and dosage of the brew, have developed a specific ritual form of working with people. Here, health professionals-as-ritual-leaders and patients drink ayahuasca *together* to ‘work’ on a specific ailment or issue (the Portuguese term for performing an ayahuasca ritual is often ‘doing a work’ for this is considered labour, not recreation). One of these leaders tells De Rose

that what will transpire during the ritual is ‘unpredictable’ because the ayahuasca is the one who decides what has to be done, not the therapist: ‘the *Daimé* [name commonly given to ayahuasca] is the surgeon and I am the scalpel. It is it [ayahuasca] that is going to say what needs to be done, and I will execute that’ (de Rose 2006, our translation). Their choice of words is particularly interesting, as they describe ayahuasca as being the intelligent agent in the encounter and themselves as the tool or technology. The doctors-as-facilitators create oracular conditions for the ritual, holding space for it. But once the encounter begins, the plant is the one directing the spiritual cure, using them as a (mere) scalpel. The choice of referring to a medical professional through the inert technology of the scalpel suggests a critique of the notion of active ingredient to which agency without intelligence is ascribed.

Let us now turn to a case study which reveals something of the complexity of how ayahuasca, its context, the group that comes together to hold ritual, and a person’s own atemporal journey through healing are entangled. Larissa has a history of sexual abuse and explains that when she was fourteen, her mother suffered a sudden and untimely heart attack and died. Larissa developed a profound fear of also dying of a heart attack, becoming overwhelmed at night with tachycardia and feeling as though she was *morendo do coração* (dying of the heart). Her broken heart became the locus of her pain. She learned to live with her nightly panic attacks, to quell her terrified heart with alcohol, and to dissociate from her body. She lived in anxiety, overwhelmed by the obsessive attention to her heart’s broken rhythm. She stumbled upon ayahuasca accidentally two years ago, thinking it would be just another *barato* (high). But her life changed dramatically after this first encounter. She approached Sanabria after a collective ritual during which the ethnographic study had been presented, to share her story.

She explained that in a recent *trabalho* (work) a concentrated form of ayahuasca known as *estrela* (star) had been served. This was so strong that it awoke her tachycardia. It was so overbearing that she almost could not stand it. ‘*Me fui solicitado fazer uma limpeza* [I was asked to make a cleansing, i.e. to vomit]. And I was told it would be a process.’ As the *limpeza* (cleansing) was happening, she expunged layer upon layer of fear. As she cleansed, she understood the nature of this fear and the effect it continued to have on her. For several months, in the ceremonies she attended, she worked with this fear every time she partook in a ritual. It was difficult, but the group facilitators, with whom she had discussed her process, supported her and she received encouragement to stay with it. As she blended the insights of the ceremonies into her daily life, she gradually came to experience a new understanding of how the fear had taken root, quite materially, in her physical being, that before being physical, fear was energy. In her last session, she explained, she was able to go further than ever into the fear. During the session, her heart began beating so fast she became convinced that she was dying. She smiled inwardly to herself, feeling gratitude for the insights she had achieved, and opened herself peacefully to what was. This brought her to a place of pure aliveness. As she reclined, she felt

*beijaflors* (hummingbirds) of light hovering around her heart, their little beaks weaving, removing, re-doing, cleaning, and placing good things into her heart. When they were finished, they sealed it and flew over to work on the next person. Since this experience, she has the deep conviction that she has cured herself of ‘the future [heart] attack that my fear was programming me to have’.

Larissa is describing her own version of evidence-based medicine. As Larissa’s story reveals, the healing efficacy at work in such ceremonial use cannot be reduced to any linearly progressing or predetermined outcome measures. It is not straightforwardly attributable to the molecular properties of ayahuasca, nor to Larissa’s intention, nor to that of any of the facilitators holding space for her process. If anything, in this particular spiritist-inflected context, efficacy would be attributed first and foremost to the agency of invisible beings, all of whom fall entirely outside the remit of RCT outcome measures.

There is an inherent tension in the current move to pass psychedelic-assisted interventions through the randomised control trial machine, given its complete incapacity to render the entangled, multifold textures of healing to which such narratives allude. In the Brazilian neo-ayahuasqueiro circles where we have worked, neither illness nor healing is treated as settled categories that can be known in the absolute, outside of a carefully built-up understanding of the specificity of each person’s particular circumstances (see Talin and Sanabria 2017). While in clinical trials the intervention needs to be calibrated across all study subjects to enable comparison, and the subjects calibrated as equally suffering, in these circles it is often assumed that no two situations are ever the same and that nothing about a person’s process can be known from the outside. Facilitators are trained to provide non-invasive supervision of the experience in order for each participant’s process to be held without either intrusiveness or neglect. Their role is characterised by a deep presence but minimal physical and verbal contact. For many people we speak with, the experience of this kind of non-directive care was, in and of itself, deeply transformative (Talin and Sanabria 2017). In both Larissa’s story and in de Rose’s account, the encounter with ayahuasca is experienced as neither heroic technology nor magic bullet; rather, it is the source of understanding the situation, the healer or guide for the individual and the collective. Instead of Western science knowing that there is a medical problem to be solved by a treatment, the encounter itself is experienced as that which allows the problem to emerge as well as guiding the healing trajectory. The ethnographic work we are conducting among groups holding ceremonial ayahuasca work reveals that what matters here is how the work gathers whole communities in the telling. The very concept of technology that we, as analysts tied to the conceptual apparatus of Western analytics, find so hard to evade perpetually returns us to the intrepid Hero, the magic bullet, or the tools of motion and spatial extension, often obfuscating more unobtrusive forms of containment, rendering them invisible.

## AYAHUASCA IS NOT A PSYCHEDELIC

The voices of Indigenous peoples are eloquent in this regard. They tirelessly remind Western enthusiasts that the stories of ayahuasca and plant medicines are indissociable from the histories of extractivism, colonialism, missionarisation, and epistemicide. They explain that trying to understand ayahuasca within the frame of biomedicine is an ongoing appropriative, colonial, and violent practice. In a declaration on cultural appropriation published in 2019, the Union of Indigenous Yagé Medics of the Colombian Amazon (UMIYAC) reaffirmed:

Today we are still suffering from colonization and invasion. Armed groups, drug-traffickers, land grabbers, mining and hydrocarbons multinationals, timber traffickers and cattle ranchers continue to threaten the survival of our people, guardians of Amazonian ecosystems; which serve as the vital organs for life throughout the planet. The spiritual authorities of the indigenous peoples of the Amazon basin are the people responsible for preserving the spiritual traditions and knowledge of the sacred medicine of the yagé (ayahuasca). Through the practice of yagé medicine we have managed to resist the invasion and protect our autonomy. With yagé we also heal the illnesses of community members, protect our territories and protect the lives of our leaders. Thanks to the sacred yagé plant since childhood, communicating with the spirits of Mother Earth we have cultivated wisdom, and have learned which medicinal plants are useful for curing diseases. Yagé is not a hallucinogen and is not a psychedelic plant. Yagé is a plant that has a living spirit and teaches us how to live in peace and harmony with Mother Earth. (UMIYAC 2019)

The Declaration of the Third Indigenous Ayahuasca Conference, held in October 2019 on Ashaninka territory, also reminds the Western publics engaging with ayahuasca that it is impossible to dissociate the protection of sacred plants from the protection of territories, traditional knowledge, and spirituality. The declaration powerfully articulates the need for international and state-level mechanisms of environmental protection, forest regeneration, ecological management of plants and animals, and food sovereignty, and calls on state and supranational agencies to denounce and halt the illegal actions of loggers, hunters, drug traffickers, agro-industrial businesses, miners, and infrastructural projects such as dams and roads in Indigenous and protected territories.<sup>5</sup>

Addressing the Psychedelic Liberty Summit in May 2020, artist, activist, and scholar Daiara Tukano of the Tukano Yé'pá Mahsā Nation of the Alto Rio Negro (Brazilian Amazon) gave a powerful presentation on Indigenous concerns over the globalisation of ayahuasca. She explained that ayahuasca, for Indigenous peoples, is not 'just a medicine'. Rather, it is 'a fountain, the origin of all other knowledge'. Keepers of the knowledge of ayahuasca are much more than healers, she told an online assembly of North American and European psychonauts.<sup>6</sup> They are 'responsible for the continuity of the culture, the nation'. Voicing the concerns Indigenous people have with the misuse and

cultural appropriation of ayahuasca, she explained that it is very challenging to see the rise of non-Indigenous use of ayahuasca given that, for her people, those who are entrusted with this knowledge and the authority to conduct ritual need to be deserving, dedicated, and have impeccable ethics. Only those who have deserved the transmission, have undergone an intense process of learning through *Dieta* (an ongoing practice of isolation, study, and meticulous obedience to ritual behavioural and alimentary proscriptions), and shown themselves to be moved by a deep community ethic (where the well-being of the entire community is central to their practice) become entrusted with the knowledge.

Daiara Tukano's intervention is extremely important as it explicitly repositions the contemporary boom of ayahuasca (itself intricately tied to the Euro-American psychedelic renaissance) within the ongoing history of colonialism. Speaking candidly of her grandfather's, father's, and uncle's deep surprise at the uptake of ayahuasca by the whites, she repositions the story of this medicine's expansion from the perspective of her Elders who were banned and demonised for expressing their culture, torn from their communities to be educated in Portuguese mission schools, and assimilated, who experienced the military dictatorship and led the fight for cultural, civic, and territorial Indigenous rights. The current move to capitalise on psychedelics does more than ignore this history, it erases the ongoing dispossession of land and language and health in the Amazon while profiting from the unequal relations of power and access, as well as intentionally excising community, plant, and planetary ethics from the ethics of clinical trial design and approval.

Indigenous scholar Ibã Dua Bake from the Huni Kuin people of Brazil foregrounds the intensely colonial relations of the rubber estate which his people endured until the early 1980s and under which ayahuasca rituals (or speaking one's language) were prohibited. Ibã was handed down the corpus of chants that accompany the *Nixi pae* ritual (Huni Kuin term for ayahuasca) from his father, Txana Tuin, who had received them from his grandfather and generations immemorial before him. What Ibã tells us is that this corpus came to his ancestors from a mythic being, Yube Inu, to whom he sometimes refers as the Spirit of the Forest. When Ibã recorded and transcribed the chants of which his father was the keeper, he carried out what he calls a first translation, a translation between Hatxa Kuin (an oral human language) into its written form (a neo-colonial artefact, a codification in writing that emerged in the context of the bilingual education programmes in which he was trained). This first transcription into the written form was met with numerous requests to translate from written Hatxa Kuin into Portuguese. Jokingly, Ibã often says he had to respond, 'Now *that* would be impossible! That was going too far into realms of incommensurability' (see also Mattos and Huni Kuin 2017).

We read this engaging resistance to submitting the corpus of sacred ayahuasca chants to translation as a refusal to allow the entangled trans-species assemblage of plant-territory-ancestors to be colonised and captured by a logic of plant-as-molecules plus set and setting. Ibã's refusal echoes the refusals of

Native American authors (Tuck and Yang 2014; Simpson 2017). The forest, its spirit beings, the village and *kupixawa* (ritual house), the stars, moon, and astral beings, the waters and winds, the living territory are not reducible here to concepts such as the ‘environment’ or the ‘setting’ of the experience. Ayahuasca is not a technology, but it has much to teach.

## CONCLUSION

While psychedelic-assisted clinical trials are container technologies, they are modelled after traditional plant medicine settings that hold space for what needs to emerge. These settings are explicitly anti-causal, unpredictable, and deeply paradoxical encounters in which what matters (including the problem) is not knowable ahead of time. They are first and foremost concerned with providing a space for a process to unfold, where what unfolds is not reducible or attributable to the isolated actions or intentions of either healer or client. When space is held in this way, it enables something to happen without humans or things being the cause of it. In this sense it is not reducible to action, intention, or even to the act of containing. These processes have very different and emergent qualities from magic bullet trials. Holding space takes the risk of letting something occur, of surrendering to a level of unknown that may exceed the experimental boundaries and call the community to account, a process that nevertheless receives meticulous preparation.

By contrast, biomedical technologies—of the kind that are validated under our current regime of RCTs—are concerned with risk aversion and aim to circumscribe the unknown, to leave as little as possible to chance, attributing agency to a substance controlled and owned by the experimenters, and assumed to act solely at the level of a disease suffered by an individual, not a mutual transformation of all those engaged in the encounter. Starting with technology as a frame for analysis, we found it implicitly reinforces colonial orders and inequalities by implying that ‘we’ already know the problems and the ways in which solutions can be explored or experimented with. We are drawn to the frame of ‘holding space’ for different collective futures to come into being.

In this chapter, we highlighted the ways in which the RCTs we study (BigPharma and psychedelic RCTs) have built a tight coupling of heroic narratives of progress and science within an assumed context of market evaluation and institutionalised deference to regimes of intellectual property. We observe the way the market gets assumed and positioned as the source of value, deeply reorienting the utopian field of psychedelic research despite many psychedelic clinicians’ stated values of openness and distrust of BigPharma. We are concerned that even their initial commitment to open-source research and benefit-sharing still maintains a frame in which they know what a medical problem looks like, and are not open to questioning psychiatric definitions of problems cast as individual issues rather than as socially or structurally unjust. We find it useful to attend to the frames of technology through the question of how they implicitly or explicitly reinforce colonial orders by pre-defining what counts as

the problem and, therefore, the kinds of solutions that can legitimately be explored. Without throwing out the notion of technology altogether, we conclude by turning again to la paperson's analysis of property law as a settler-colonial technology:

The weapons that enforce it, the knowledge institutions that legitimize it, the financial institutions that operationalize it, are also technologies. [...] Instead of settler colonialism as an ideology, or as a history, *you might consider settler colonialism as a set of technologies*—a frame that could help you to forecast colonial next operations and to plot decolonial directions'. (la paperson 2017, p. 21, emphasis added)

We read magic bullets as one pinnacle of a process of alienation that begins with the recasting of lands and nonhumans as extractable property. Factoring in setting experimentally is a potentially helpful first step for the de-individualising of mental health, but only a first step. RCTs need not always be described as colonial technologies, given that there are many different forms of colonialism and of inclusions of plant remedies into the logics of RCT (Foster 2016; Wahlberg 2008a), but in the case we are describing it is important to heed the histories and problems Indigenous peoples are raising about this process. The frame of container technology begins to get us further, but does not overcome the way Indigenous knowledge and practices are often tokenised in psychedelic events, while approaching ayahuasca and other Indigenous medicines as psychedelics contributes to the erasure of the ongoing destruction of Indigenous communities and territories and extraction/perversion of their knowledge systems. We should be ever more careful how the very frame of technology contains some worlds and delegitimizes others. If set and setting are ever to have any real-world value, then they would have to include not just structural determinants of health and inequality, but spirits, community, time, the forest and equitable forms of inhabiting the world, for humans and more-than-humans.

**Acknowledgements** This research was made possible by generous support from the ERC Starting Grant n°757589 'Healing Encounters: reinventing an indigenous medicine in the clinic and beyond' based at CERMES3 (Université de Paris, EHESS, CNRS). The authors acknowledge invaluable feedback from the Oxidate Writing Group, as well as by the editors and anonymous reviewers of this Handbook.

## NOTES

1. Arguing for a better definition of technology does not change the ongoing effect of the category of the standard view of technology. Collaborations between Indigenous actors and colonial states or pharmaceutical companies are important in their successes and failures (Wahlberg 2008a), but they do not change the ongoing effects of state, colonial, and capitalist violence on communities conducted under the banner of medical and technological development.



2. COVID-19 has brought some (but only some) of these structural inequalities in medicine to the fore, but not essentially changed them (Metzl et al. 2020).
3. Medical historian Oram argues that Savage's experiments with LSD to treat depressed and psychotic patients were not only the first to make use of a control group in LSD research, but one of the earliest examples of controlled experimentation in psychiatry (Oram 2018, p. 29).
4. These are summary notes taken by the authors attending a virtual conference. Speakers have been anonymised as per the IRB.
5. An English version of the text is available here: <https://chacruna.net/declaration-of-the-3rd-brazilian-indigenous-conference-on-ayahuasca/>. Accessed 3 November 2020.
6. On 'healers, but not only', see de la Cadena (2015).

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