



Journey Inside the Mind

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In his illuminating book Scale, Geoffrey West writes: (Education, research et al.) fail to come to term with an essential feature of the long-term sustainability, challenge embodied in the paradigm of complex adaptive systems namely, the pervasive interconnectedness and interdependency of energy, resources, and environmental, ecological, economic, social, and political systems... While focused studies are of obvious importance and where most of our research efforts should be directed, they are not sufficient. The focus primarily on the trees and risk missing the forest.

It's time to recognize that a broad, multidisciplinary, multi-institutional, multinational initiative, guided by a broader, more integrated and unified perspective, should be playing a central role in guiding our (educational), scientific agenda addressing this issue and informing policy. We need a broad and much more integrated scientific framework...

We do own this framework, each one of us. Its name is the **Mind**. Although, these days, one could cast doubt on some world leaders' ownership...

Our mind is a mystery in its mechanisms of functioning, and –despite modern tools of exploration of functioning *brains*- it will remain a “black box” for long. We can explore it using a different approach, well known and practiced for eons by hundreds of different ethnic groups: using **psychedelics**.

On my website www.drgeorges.net, in the *Lectures* section, you will find a 5-part series on *Psychoactive Substances* that summarizes what we actually know on these mind-altering substances; humans –as I point out- have, as long as we can know, **always** used one or (many) more of these, and there is no end in sight.



The Commercial Exploitation of Psychedelics

On August 3, 2017, Barbara Fraser published in *Sapiens*, a most interesting magazine, an article titled *The Perils and Privileges of an Amazonian Hallucinogen, Ayahuasca* (I mentioned it in Part 3 of my lecture on Psychoactive Substances - <http://drgeorges.net/psychoactive-substances-part-3/> - slides 21 to 24.)

The following text is an edited excerpt of Barbara Fraser's long article.

Today there are thousands of people who travel to the Amazon each year to sample ayahuasca, a hallucinogenic brew made from Amazonian plants. Some seek physical or psychological healing, and others wish for a spiritual awakening. Some say the experience gives them personal insight, helps to heal past traumas, or provides a way to deal with addiction. Others are driven by curiosity and a thirst for adventure.

Once a pastime for young backpackers trekking around the region on the cheap, ayahuasca tourism has recently become popular with upscale travelers. Most of them pay more than US\$100 a day for regimes advertised as traditional healing methods through plant-based diets, tobacco purges, and, of course, ayahuasca ceremonies.

The boom has not only met the demands of tourists seeking alternative therapies; it has also reawakened interest in traditional plant-based medicine among Indigenous peoples and created jobs in a semirural Amazonian region where employment is scarce. But critics decry the for-profit use of traditional medicine and practices, the tailoring of what they see as an ancient Amazonian ritual to accommodate modern tourists' expectations, the preponderance of lodges in the hands of foreign-born owners, and the lax regulations surrounding ayahuasca's potentially dangerous use.

The potion commonly known as ayahuasca is made from two plants. The hallucinogen in the brew— N,N-dimethyltryptamine, or DMT—comes from a bush, *Psychotria viridis*, known as chacruna. DMT occurs naturally in the human body, and some researchers wonder if it could play a role in dreaming. When ingested, however, DMT is typically inactivated by an enzyme in the human gut.

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The *Banisteriopsis caapi* vine—the plant generally known as ayahuasca—contains an alkaloid that suppresses that enzyme. So, when the ayahuasca vine and the chacruna leaf are brewed together and consumed as a tea, the DMT hits the brain and the drinker may see visions: vivid, multicolor, dream-like scenes.

DMT is treated as a controlled substance in many countries, including Germany, Australia, Brazil, and the United States. In Brazil, several organizations claim ayahuasca use as a religious sacrament and have received designation as churches, which allows them to use it legally. In Peru, the government does not regulate ayahuasca because of its traditional use.

When anthropologist Evgenia Fotiou of Kent State University in Kent, Ohio, began her research into ayahuasca tourism around the Amazonian port city of Iquitos, Peru, 15 years ago, she could count on her fingers the number of lodges catering to tourists. *“It was hard to find people to interview,”* she says. *“Interest was just starting. People were still trying things out.”*

Today, ayahuasca retreats are offered in Peru and Brazil, as well as in Ecuador, Colombia, and Bolivia, with the trend’s epicenter in Iquitos, a city of more than half a

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million people in the Amazonian lowlands. The city, a vibrant mix of modern commerce, tourism, and the ragged remnants of rubber boom glory, is surrounded by the country's largest expanse of tropical forest, accessible only by air or river. Local tourism operators estimate that between 50 and 100 lodges in the area cater to tourists seeking ayahuasca. Restaurants in Iquitos' tourist zone even offer special menus for people who are avoiding certain foods—such as cured meats, spicy fare, fermented foods, and dairy products—in preparation for an ayahuasca ritual.

The industry's boom has come with a dark side. Some women have reported that they were sexually assaulted by shamans, which has led more lodges to offer ceremonies with female healers. There have been at least nine deaths at ayahuasca lodges in the past few years, according to news reports and a staffer in the Ministry of Culture office in Iquitos, although it is not clear whether any were directly linked to ingesting ayahuasca. Some were related to other plant-based brews. Two travelers died at lodges near Iquitos and Puerto Maldonado, Peru, in recent years, reportedly from drinking a purgative tea made of native tobacco, for example. And a Canadian man stabbed a British man under confusing circumstances at an ayahuasca lodge near Iquitos in December 2015.



One positive outcome of the ayahuasca tourism boom is that the industry is spurring

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renewed interest in traditional plant medicine among Indigenous young people. Until two or three decades ago shamanism was dying, because it is a hard path. It takes a lot of sacrifice to become a shaman. Now, however, the possibility of employment in the tourism industry makes that sacrifice more attractive.

The boom might also be responsible for an increased exchange between Indigenous knowledge and Western science and medicine, as researchers investigate possible uses of ayahuasca for treating problems such as addiction and depression. Similar studies are being done with other psychedelic substances, such as psilocybin, the active compound in magic mushrooms. *“Psychedelics allow us to look at the human mind in a way that we’ve never had the chance to look at it,”* says Draulio de Araujo, a professor of brain imaging at Brazil’s Federal University of Rio Grande do Norte. His research indicates that ayahuasca may ease depression and that the effects can be similar to those of mindfulness meditation.

In the end, foreigners who venture into the world where tourism and cultural traditions mix can come away with a deeper understanding of themselves and of other people. But that is only part of a very challenging issue.



An Update on Psychedelics

Is it a coincidence? Three days after the article in *Sapiens*, a 3100 words article on the same subject –but much more comprehensive- was published in *Aeon*, authored by Philip Gerrans and Chris Letheby, both from the Department of Philosophy at the University of Adelaide, in Australia. Hereunder an edited version of this fascinating essay.

It turns out that the hippies were on to something. There's mounting evidence that psychedelic experiences can be genuinely transformative, especially for people suffering from intractable anxiety, depression and addiction. *'It is simply unprecedented in psychiatry that a single dose of a medicine produces these kinds of dramatic and enduring results,'* Stephen Ross, the clinical director of the NYU Langone Center of Excellence on Addiction, told *Scientific American* in 2016.

Psychedelics reliably induce an altered state of consciousness known as 'ego dissolution'. The term was invented, well before the tools of contemporary neuroscience became available, to describe sensations of self-transcendence (a feeling in which the mind is put in touch more directly and intensely with the world, producing a profound sense of connection and boundlessness).

But can, and then how does this help patients with long-term psychiatric disorders? We know quite a lot about the neurochemistry of psychedelics. These drugs bind to a specific type of serotonin receptor in the brain (the 5-HT_{2A} receptor), which precipitates a complex cascade of electrochemical signaling. What we don't understand, though, is the more complex relationship between the brain, the self and its world. Where does the subjective experience of being a person come from, and how is it related to the brute matter that we're made of?

Here we encounter a last frontier, metaphysically and medically. Some think the self is a real entity or phenomenon, implemented in neural processes, whose nature is gradually being revealed to us. Others say that cognitive science confirms the arguments of philosophers East and West that the self does not exist. The good news is that the mysteries of psychedelic therapy might be a hidden opportunity to finally start unravelling the controversy.

The nature of the self has been disputed for as long as people have reflected on their

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existence. Recent neuroscientific theories of selfhood are recognizably descended from venerable philosophical positions. For example, René Descartes argued that the self was an *immaterial* soul whose diversity we encounter as thoughts and sensations. He thought the existence of this enduring self was the only certainty delivered by our (otherwise untrustworthy) experience.

Few neuroscientists still believe in an immaterial soul. Yet many follow Descartes in claiming that conscious experience involves awareness of a ‘thinking thing’: the self. There is an emerging consensus that such self-awareness is a form of *bodily* awareness, produced (at least in part) by *interoception*, our ability to monitor and detect autonomic and visceral processes.



David Hume disagreed with Descartes. When he attended closely to his own subjectivity, he claimed to find not a self, but a mere stream of experiences. We incorrectly infer the existence of an underlying entity from this flow of experiential moments, Hume said. The modern version of this view is that we have perceptual, cognitive, sensory and, yes, bodily experiences – *but that is all*. There’s an almost irresistible temptation to attribute all this to an underlying self. But this substantialist interpretation is a Cartesian mistake, according to Hume.

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Certain modern philosophers, such as Thomas Metzinger, have endorsed versions of this ‘no-self’ view. They point to connections with non-Western traditions, such as the concept of *anatta* or no-self in Theravada Buddhism. While others argue that the mistake is to think that because we use ‘I’ to tell a story about experience, there must be a *real* ‘I’, distinct from and underlying the narrative we use to interpret and communicate the stream of experience.

Today there are neuro-Buddhists, neuro-Cartesians and neuro-Humeans all over the world, filling PowerPoint screens with images of fMRI scans supposedly congenial to their theory. Abnormal cognitive conditions, pathological or otherwise, serve as a crucial source of evidence in these debates, because they offer the chance to look at the self when it is not working ‘properly’. Data floods in but consensus remains elusive. However, the neuroscience of psychedelics may help resolve this impasse: scientists can now watch the sense of self disintegrate and reintegrate – reliably, repeatedly and safely, in the neuroimaging scanner.

We do not experience the external world directly, but via our mind’s best guess as to what is going on out there. The predictive coding framework rests on the idea that there is world out there that our brains need to find a way to track. It is by approximating the structure of this reality (even if we can’t apprehend its metaphysical truth or nature) that our predictive brains save us from getting run over.

Experience teaches us that certain combinations of features are more likely to co-occur than others – and this predicted coherence is increased by attributing these features to the same persisting object: the reason that we see a bus moving towards us, rather than a mishmash of disjointed shapes and colors, is that the brain uses a model to assign such visual fluctuations to enduring things, and predicts the nature of experience as a result.

The ‘bad’ news is that your sense of self is nothing more than one of these rough-and-ready models. In other words, the self is a sort of meta-filter for the signals you get from the functioning of your whole organism. Our encounters with the world – actual, imagined or recalled – make us feel hot, cold, happy, sad, anxious or calm, and every gradation and combination of experience in between. Any time that the mind encounters such a flow of feelings and perceptions, it irresistibly attributes them to some underlying entity that accounts for what’s going on. Self-modelling is simply an

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optimizing strategy that allows us to bind together certain properties of the world so that they're easier to grasp. By striving to maximize predictive success, the mind irresistibly succumbs to the substantialist temptation.

The self-model is an integrated bundle of predictions – and lots of these predictions, built up over a lifetime of experience, can make us deeply stressed and unhappy. A person with social anxiety expects and experiences the world to be hostile and uncontrollable because she feels vulnerable and unable to cope. The self-model that produces these feelings magnifies the adversity of her social world. Similarly, people with depression anticipate and recollect failure and unhappiness, and attribute it to their own inadequacy. Their self-model makes it hard to access positive experiences, and often feeds on itself in a negative downward spiral.

Because our brains are endlessly trying to predict what's next and reduce the likelihood of error, it's no wonder that our expectations of ourselves tend to be self-fulfilling.

Theoretically we should be able to re-engineer the mechanisms of our self-model and change the way we organize and interpret our experience. The problem is that the self-model functions in a way that's quite like the lenses of our eyes. We see with them and through them, but it's almost impossible to see the lenses themselves, to appreciate how they affect the signals that reach us, let alone take them off if they are unhelpful. In general, the mind presents us with the finished product in the form of images, not the modelling processes themselves. So too with the self: for better or worse, we feel like unified entities, not complicated and precarious happening.

That's a big part of why psychiatric disorders such as depression or anxiety are so hard to shake. It's almost impossible for the person to access an alternative way of being in the world. She might know intellectually that certain experiences are accessible, possible and beneficial, but she can't identify with those alternative selves. Her invisible self-model has been rigidly constructed to parse the world negatively, and to make her feel accordingly. Moreover, people often have a justified suspicion that engaging with different forms of therapy will change who they are in some fundamental way. They defend the familiar self even when it causes them distress.

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The psychedelics put a spanner in the works of maladaptive self-models, because they affect the neural mechanisms that self-awareness springs from. At the point of ego dissolution, two things seem to happen.

One, the integrity of the self-model degrades. And two, we no longer take it for granted that our experience must be interpreted by that model. The first point simply means that the self drops away as the filter on the world. It becomes ‘unbound’ as the unit through which we understand our experience. This explains psychedelics users’ reports of the loss of individuality, and their patterns of intense absorption in the world. In *“The Doors of Perception”* (1954), Aldous Huxley famously described his experience of taking mescaline like this: *‘I was not looking now at an unusual flower arrangement. I was seeing what Adam had seen on the morning of his creation – the miracle, moment by moment, of naked existence.’*

The second effect is subtler. It concerns the way that psychedelics can enlighten us about the processes behind our own subjectivity. When the self falls apart and is subsequently rebuilt, the role of the self-model seems to become visible to its possessor. This offers a psychological reprieve – but more importantly, it draws attention to the difference between a world seen with and without the self. For an anxious or depressed person, psychedelics make it possible to appreciate the intermediate, representational role of the self-model. Ego dissolution offers vivid experiential proof, not only that things can be different, but that the self that conditions experience is just a heuristic, not an unchangeable, persisting thing.

What do psychedelics reveal about the philosophical and neuroscientific controversies about the self? It seems clear to us that the self is not a mere narrative posit, as some theorists have suggested. It plays a crucial role in perceptual and emotional processing. But this does not mean, as others have claimed, that the self-model has the right attributes to qualify as a Cartesian self either. It might perform some of the right sorts of functions, but it is not the right kind of entity. The self-model plays an essential binding function in cognitive processing – but the self itself does not exist, at least not in the form of some persistent, substantial ‘soul’. Better to see it as a fundamental cognitive strategy, one which has developed over evolutionary time. As the science journalist James Kingsland puts it in *Siddhartha’s Brain* (2016): *‘It is difficult to escape the conclusion that we have evolved into an ape that takes things personally.’*



That the self is a model, not a thing, doesn't mean it's completely fluid and arbitrary. Quite the opposite: it is constructed from birth over many decades.

Particularly at lower levels, the cognitive processes that the self-model binds together – perception, interoception, basic regulatory mechanisms – are not especially flexible. That's why chaotic developmental environments are so damaging. Not only are they stressful in obvious ways, but in its formative years the mind has no stable patterns of experience on which to model a self.

Change can still be very hard. Psychedelics allow you briefly to hear your personal language of subjectivity as sound, not meaning.

Psychotropic Drugs 2018



Courtesy Wikimedia

From medication to recreational and spiritual substances, drugs offer us respite from



pain, open opportunities for mental exploration, and escape from –or into– altered psychological states. They are our most widely available formal and informal implements for tweaking our mental condition. Consider the cold beer after a hard day at work, the joint before putting the needle on the record, the midday espresso, the proverbial cigarette break, Adderall® during finals week, or painkillers to alleviate undiagnosed or chronic pain. Not to mention antidepressants to counter a sense of meaninglessness, and benzodiazepines because *everything* causes anxiety. In short, drugs offer our most common path to a sense of psychological health. With a modicum of knowledge, millions of people modify their minds through chemistry every day. Considering the limited resources of time, support networks, money and patience, accepting the positivism of drugs seems more efficient and more feasible than psychodynamic therapy. This shift implies an expectation that there are quick and easy chemical levers into a wide range of mental states.

Drugs are favored tools to foster our values and amplify or attenuate our gregariousness and productivity. They serve as release valves for labor and social relations. Socially acceptable drugs such as nicotine, caffeine and alcohol are thus embedded into common social practices in public spaces; they are aids to efficiency in coffee-shop work culture and sociability in bars. Accordingly, these practices coincide with the modern structure of the working week: in the morning, we become alert, and in the evening, we relax. In effect, some drugs are made highly accessible as a form of self-medication for the common self-diagnosed emotional states of stress, boredom, restlessness, anxiety, discomfort, etc.

Psychological medications such as Xanax®, Ritalin® and aspirin help to modify undesirable behaviors, thought patterns and the perception of pain. They purport to treat the underlying chemical cause rather than the social, interpersonal or psychodynamic causes of pathology. Self-knowledge gained by introspection and dialogue are no longer our primary means for modifying psychological states. By prescribing such medication, physicians are implicitly admitting that cognitive and behavioral training is insufficient and impractical, and that '*the brain*', of which non-specialists have little explicit understanding, is in fact the level where errors occur. Indeed, drugs are reliable and effective because they implement the findings of neuroscience and supplement (or in many cases substitute for) our humanist discourse about self-development and agency. In using such drugs, we become

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transhuman hybrid beings who build tools into the regulatory plant of the body. Recreational drugs, on the other hand, are essentially hedonic tools that allow for stress-release and the diminishment of inhibition and sense of responsibility. Avenues of escape are reached through derangement of thought and perception; many find pleasure in this transcendence of quotidian experience and transgression of social norms. There is also a Dionysian, or spiritual, purpose to recreational inebriation, which can enable revelations that enhance intimacy and the emotional need for existential reflection. Here drugs act as portals into spiritual rituals and otherwise restricted metaphysical spaces. The practice of imbibing a sacred substance is as old as ascetic and mindfulness practices but, in our times, drugs are overwhelmingly the most commonly used tool for tending to this element of the human condition.

In this historical moment, drugs fuel a culture where human nature is increasingly considered to be controllable through technology. But the essential question is this: do drugs enhance or diminish human agency, the ability to modulate one's own thought processes? Whether a drug boosts attention, tamps down inhibitions or deranges the senses in service of euphoria, use can become ingrained and can spiral out of control until one can be said to be addicted to the effects of the drug. The overuse of recreational drugs and socially acceptable stimulants seems to negate, distort or inflate one's sense of agency, at which point an individual becomes dependent on drugs to cope in professional and social situations. In these cases, drugs, in the long term, are indeed counter-productive tools: they both occlude agency and compromise self-development.

Psychopharmacology implies that distinct mental illnesses are somehow natural kinds of personality formations defined by neurochemical profiles. For instance, in claiming that I have attention deficit hyperactivity disorder (ADHD) I am contextualizing all my behaviors within a totalizing abnormality that requires a pharmaceutical cure – a treatment beyond the capacities of my introspection and social support network. Practitioners prescribing such drugs in such a scenario are *de facto* technicians of the mind. They are easing our pain, but they are also dispensing cultural tools that allow us to selectively reduce or augment our sense of personal agency and power to set our own path. One question to ask then is: How many individuals have found, through these tools, a sweet spot that blends

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augmentation of the will and alleviation of pain? If the number is large, then drugs fall into the same category as cars, electric guitars and mobile phones; tools that, if used judiciously, can ameliorate our quality of life. From that perspective, drugs are just one of many tools, including the tool of talk therapy, that serve to secure an appropriate sense of agency. And yet a somewhat worrisome consideration arises – maybe maintaining a sense of agency is not the best indicator of the appropriateness of a given tool. In our transhuman future, we are likely to abandon the psychodynamic tools of self-actualization for cocktails offering the illusion of agency and escape.



The Place and Role of Psychedelics

Traditional shamanic mythology is animist, implying that animal, plant, and ancestral spirits exist in this world alongside the living, not in an idealized dimension beyond our grasp. To a traditional shaman, the psychedelic medicine merely opens the eyes to see what is always present, and through this opening new wisdom is revealed. The modern notion of journeying to a spirit realm to commune with disembodied entities is a mix of aboriginal archetypes of dreaming and spirit walking, Western archetypes of visiting afterlives of heaven and hell, and Tibetan archetypes of traveling through bardos of the afterlife. The ontological split between the land of the living and dead is not always recognized in traditional shamanism, though it has been readily adopted by modern syncretic churches that blend traditional peyote and ayahuasca shamanism with themes and iconography borrowed from Buddhism, Hinduism, Christianity, and Catholicism. The central questions remain: are psychedelic spirits of this world or of an ontologically distinct spirit world; are they from a Christian universe or a Hindu universe or a Pagan universe; are they shared fabrications of human consciousness; are they all of the above -or does it even matter?



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This fluid nature of psychedelic mythology and the conflicting cultural notions of spirit worlds and transcendence indicates that psychedelic spirituality is malleable and can be adapted to meet existing cultural beliefs: there is not one true psychedelic spirituality or spirit world. Animist shamanism is just as valid as entheogenic transcendence; ecstatic celebrations are just as valid as healing rituals and sorcery. At the crux of this debate is the notion of who derives the spiritual benefit from psychedelics and why. Are psychedelics merely for healing the sick, or are they also for black magicians and people with a mild spiritual curiosity? If we use psychedelics for recreational or selfish purposes do we dilute their healing power, and how do the evil deeds of shamanic sorcery mesh with hippie entheogenic ideals of unity, peace, and love? In truth, it is impossible to reconcile all these conflicting notions of psychedelic spirituality, and thus viewing psychedelics solely as sacraments is at best a stretch and at worst an error of Western ethnocentrism. Psychedelics are not sacraments; they are tools for accessing a wide range of human abilities, some of which happen to be overtly spiritual. Psychedelics are not of the spirit world, they are not spiritual in origin, nor are they necessarily spiritual for everyone who takes them. Thus, any religion or mythology that claims to know the true purpose or source of psychedelic spiritual power is obscuring a larger fact; psychedelics do not deliver ultimate spiritual truth, they amplify and reinforce whatever spiritual ontology we already choose to believe. And that can help –and heal– many.



Acknowledgements

I have confessed my plundering –most of it *verbatim*- in the core of the text. Better copy than distort and betray...

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