The Consciousness Foundation

Consciousness

An Emerging Frontier

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For millennia, the subject of consciousness has been predominantly the domain of philosophers, contemplatives, mystics, and theologians. Their inquiries — into the nature of the self, the cultivation of wisdom and the reduction of suffering — were seen as fundamental for understanding, and improving, the human condition. Science, on the other hand, with its emphasis on third person observation, has historically treated the inner dimensions of existence as methodologically elusive or as secondary concerns.

Yet over the last few decades this separation has been dissolving. From Francis Crick and Christoph Koch's seminal paper on the neural correlates of consciousness in 1990, to the birth of the field of contemplative neuroscience in the early 2000s, the idea that consciousness could be approached through rigorous scientific investigation has gained increasing legitimacy. In the years since, several scientific foundations have been laid. For example, advances in neuroscience now allow for high-fidelity measurements of brain signatures during meditative and psychedelic states, while improvements in first-person phenomenological methods allow for greater insights into subtle changes in reported experience. These foundations have, for many, shifted the perception of consciousness as an impossible line of empirical inquiry to one that is tractable within the confines of Western science.

But it is still early. Technologies such as artificial intelligence, neurotechnology, and synthetic biology are reshaping what we can measure and modulate, and are only now beginning to be deployed towards consciousness science. This is happening just as cultural waves of interest in subjects like psychedelics and meditation are swelling. This convergence – of scientific foundations, technological breakthroughs, and cultural readiness – points to an opportune moment for positioning consciousness as a central field in academia, industry and society at large.

Although we do not believe that science alone will solve the mystery of consciousness or its cultivation, we posit that scientific investigation has the potential to significantly support the skillful means by which healing, insight, and inner flourishing can occur. In this paper, we outline some of the issues that have delayed progress in consciousness science to date, and show how many of these constraints are beginning to shift. We propose a unifying frame – ConSci – to categorize and cohere different components of the field, and illustrate examples of emerging innovation.

Framework

The conceptual structure of this paper is guided by the following definitions, questions and guiding principles:

Definitions

We use “consciousness” as an umbrella term encompassing:

Ontology

The nature or fundamental basis of subjective experience.

Phenomenal Experience

The contents and structure of inner experience.
We use “consciousness development” to refer to the ways in which our inner experience can mature, transform and be cultivated.

Questions

Our work is guided by three types of questions:

Flourishing

What are the most beneficial states and traits for humans to embody, such as equanimity, joy, compassion, or wisdom?

Signatures

What are the measurable physiological, phenomenological or behavioral signatures of these states and traits?

Cultivators

What tools, practices or interventions can reliably support individuals in accessing them?

Guiding Principles

We build on three guiding principles:

Consciousness is empirically approachable

While consciousness itself may not be directly measurable, its physiological correlates and reported features can be systematically studied through science.

Consciousness can be cultivated

Human consciousness can be intentionally and progressively changed in both temporary and lasting ways.

Consciousness matters

Consciousness, when cultivated wisely, is a key driver of societal flourishing and planetary stewardship.

Challenges

Over the last several decades, there has been significant ground-work laid in both academia and industry that integrate science with consciousness-related explorations. Theories of consciousness have been proposed and tested, contemplative neuroscience has emerged as a recognized field, and psychedelic research, despite legal setbacks, continues to advance. Meanwhile meditation apps and digital therapeutics have brought inner practices to the mainstream. Yet despite this momentum, the field of consciousness remains underdeveloped relative to its potential. We outline some of the reasons below. These challenges are not merely technical, but epistemic, cultural, and structural. We view understanding them as essential to building a coherent and credible field.

Epistemic

Disciplinary Silos

The study of consciousness is fragmented across several disciplines, including neuroscience, philosophy, medicine, technology, and contemplative traditions. Each domain has its own set of methods, assumptions, language and limitations. Unlike fields such as genomics or AI, which progressed through shared goals and integrative frameworks, consciousness lacks a coherent identity, and stakeholders working on the same problem from different angles rarely interact.

The Challenge of Subjectivity

Scientific inquiry is constrained by what it can measure, relying on objective and replicable data, whereas consciousness comprises interior states that are not directly observable to a third person. This tension has led many, on both the scientific and contemplative side, to assume the scientific method is an unsuitable approach for consciousness research writ large.

Subject/Object Split

The Cartesian divide between subject and object has become structurally embedded in how knowledge is pursued. The hard sciences treat consciousness as epiphenomenal or emergent; contemplative traditions, in turn, reject the suitability of the scientific method for interior inquiries. There is no agreed-upon framework that integrates or harmonizes these distinct ways of knowing, and paradigm shifts at this level of the cultural operating system take time to manifest.

Cultural

Shallow Versus Deep

Although there has been widespread cultural adoption in the West of mindfulness and yoga practices, these methods have undergone significant dilution to appeal to modern sensibilities. While accessible introductions can certainly be beneficial, the "McMindfulness" trend has obscured deeper, transformative teachings. Profound principles originally designed to catalyze deep psychological and spiritual growth have often been sanitized, simplified, marketed as quick fixes, or viewed as tools for adjacent goals such as performance or productivity enhancement.

Cultural Biases

Western culture traditionally privileges outer over inner, object over subject, and speed over depth. In contrast with cultures from which contemplative traditions have emerged, inner development is culturally underemphasized relative to external achievements. In addition, many consciousness related concepts carry religious or mystical connotations that are reflexively dismissed in secular, rationalist contexts, while modern culture prioritizes instant gratification over the long-term cultivation emphasized in contemplative practice.

Credibility Concerns

Despite the presence of rigorous scholars and practitioners, the field's cultural container is saturated with speculative claims. Altered states of consciousness, whether accessed through meditation, psychedelics, or breathwork, often provoke powerful shifts in consciousness. However, individuals frequently collapse these subjective experiences into sweeping metaphysical statements, treating personal insight as ontological fact. As a result, assertions about the nature of reality, the structure of the self, or the mechanisms behind healing are often presented in popular culture without empirical grounding, replicability, or critical scrutiny.

Structural

Underfunding

Consciousness research receives a fraction of the funding allocated to fields like AI, space exploration, or longevity. This underinvestment constrains the capacity for meaningful research and development, limits talent acquisition, and significantly slows scientific progress and practical application. Moreover, public and private funding models are not designed for such an opportunity space: NIH grants are less likely to go to high risk research, while venture capital seeks opportunities that are more immediately scalable than (current) consciousness modalities.

Institutional Gaps

Until now, there has been no centralized institutional infrastructure for consciousness research, no coordinated funding body, and (until recently) few major university departments. The centers that do exist tend to operate outside of the main academic establishment, making it hard to establish broader legitimacy. Further, standard grant mechanisms are often ill-fit for paradigm-shifting work, while peer review and academic hierarchical structures penalize novelty. As a result, early-career researchers are incentivized to play it safe, conducting research that has a higher probability of funding.

Lack of Translational Infrastructure

Insights from consciousness research fields such as contemplative science, trauma healing, and altered states remain siloed from the institutions that could benefit from their findings the most, such as education and healthcare. Without robust translational pathways, knowledge fails to become policy, protocol, or public benefit.

Why Now

But change is happening. Rigorous scientific foundations, new technological breakthroughs, cultural readiness, and societal urgency are converging to create a rare window of opportunity for consciousness science. This is happening across several dimensions:

Science

Measurement Capacities

Neuroimaging technologies like fMRI and EEG are growing in fidelity and are being applied to the observation of contemplative practitioners, psychedelic experiences, and other methods that induce altered states of consciousness. Meanwhile, advances in first-person methodologies, such as microphenomenology, now allow for the generation of fine-grained, reproducible accounts of subjective experience.

Scientific Foundations

More recent fields like contemplative neuroscience have demonstrated structural and functional changes in the brain among long-term spiritual practitioners, while the neurobiological mechanisms of psychedelics are becoming better understood. Further, theoretical models like Integrated Information Theory and predictive processing are generating testable predictions about the architecture of consciousness itself.

Emerging Domains

AI, synthetic biology and neurotechnology are progressing not only as their own respective fields, but are also in the process of *converging*. These innovations hold promise for supporting both the measurement of interior states *and* modulating them towards desired goals in ways that were not possible only a few years ago.

Cultural

Cultural Openness

Consciousness has moved from the periphery of culture in recent years. Subjects once viewed as fringe, such as psychedelics and the nature of consciousness itself, have entered public discussion. With artificial intelligence now entering everyday life, questions that once lived in the domain of philosophy – "What is consciousness?", "Can machines be sentient?", "Is there a self?" – are rapidly entering daily discourse.

Societal Urgency

The global mental health crisis demands innovative approaches to wellbeing. Traditional modalities like SSRIs and therapy are increasingly acknowledged as insufficient, introducing an imperative to explore and validate deeper interventions. Yet mental health is just one subset of larger societal problems which could benefit from inner solutions as well as outer. Personal and civilizational issues have made the societal need to cultivate and deepen consciousness more important than ever.

Structural

Institutional Adoption

Credible academic institutions are beginning to study meditation, psychedelics and computational approaches to consciousness. This is helping to provide legitimacy for the field more broadly and will likely incentivize junior researchers to engage in the space when previously this would have been too much of a career risk. The participation of credible universities also sends a legitimacy signal to broader culture.

New Tools of Coordination

Scientific research communities now have infrastructure for rapid iteration and global coordination: open science platforms, metascience-informed grant mechanisms, and different organizational structures like Focused Research Organizations (FROs). This allows for high-risk, high-reward research to be carried out through different types of structures and funding options that previously struggled to find an organizational fit.

ConSci: A Unifying Frame

For the field to thrive, it needs to know it is one.

Although progress is steadily happening, consciousness has not yet coalesced into a unified field like artificial intelligence or climate science. It lacks a shared language, guiding framework, or institutional infrastructure. As a result, even its most developed frontiers, such as contemplative neuroscience and psychedelic science, remain nascent relative to the massive potential they hold for human flourishing.

Different groups of researchers explore related questions but frequently do so using divergent methods and vocabularies. People claim to work on consciousness, but it's not clear whether that equates to fundamental consciousness research or the cultivation of different states and traits, and there is no central forum or shared identity to bring this work into alignment. The result is a landscape rich in insight, but lacking in integration.

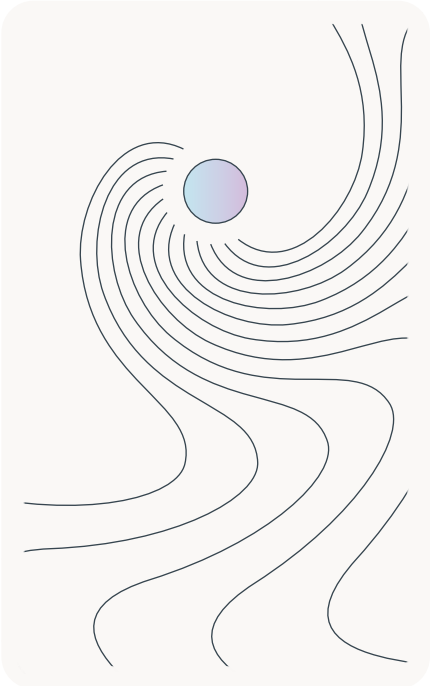
We do not believe this fragmentation reflects a fundamental intractability. Rather, it may reflect the absence of a shared conceptual and institutional home. Other scientific fields, such as longevity science, and movements, such as Effective Altruism, have shown that coherence tends to follow structure. When researchers have a common language, a sense of collective purpose, and spaces for meaningful exchange, progress becomes more likely.

In that spirit, we propose the introduction of a unifying frame we call **ConSci**.

ConSci is not a new discipline, but a proposed organizing term to cohere work and actors that already exist. ConSci represents a space where interdisciplinary research into consciousness and its development can find collaboration and cross-pollination. Our hope is that a unifying frame can offer clarity, language, and shared orientation to support stronger collaboration, clearer goals, and common standards across the field.

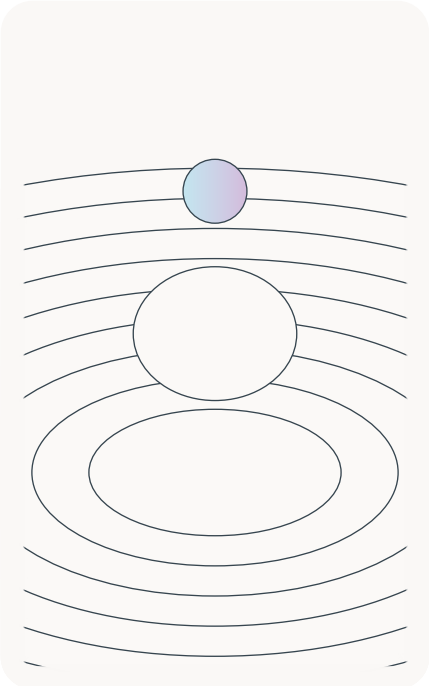
We suggest there already exists three focal categories of ConSci:

The Nature of Consciousness



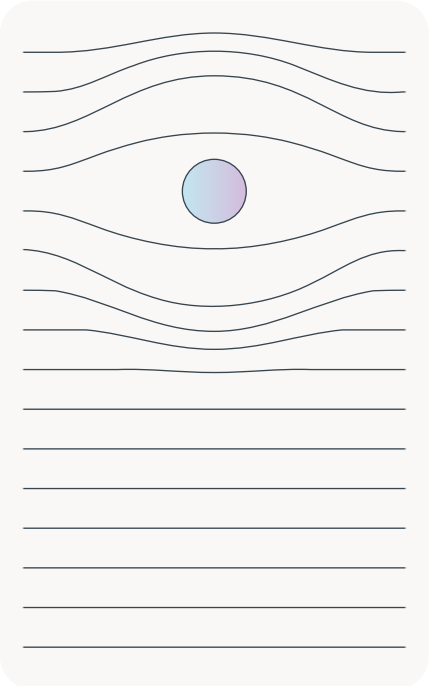
This pillar includes empirical and theoretical efforts to understand what consciousness *is*, how it arises, and how it can be measured. Topics include the neural correlates of consciousness, competing and testable theories of consciousness (e.g. Integrated Information Theory, Global Workspace Theory, predictive processing, quantum theories, field theories) and the minimal conditions for conscious experience in humans, animals and machines.

The Development of Consciousness



This strand, which we also refer to as inner development, focuses on how conscious processes evolve and can be cultivated over time – individually, relationally, and collectively. It includes: attaining deeper, more profound states and traits of awareness and insight; increasing levels of psychological and developmental complexity; resolving trauma, emotional blockages, and shadow work; and engaging ethically, compassionately and wisely in the world.

Consciousness and Anomalous Data



There exists a body of phenomena that remain poorly explained within current models of cognition, philosophy, physics, and neurobiology, such as certain altered states or near death experiences. Unexplained data – if observed with scientific integrity – can be epistemically valuable. The ConSci domain includes these explorations, subject to standard methodological rigor that has historically been lacking in these inquiries.

Currently, these domains operate in isolation: trauma specialists are seldom present at fundamental consciousness conferences, and contemplative neuroscientists are rarely part of artificial sentience debates. We believe this fragmentation is a missed opportunity. Each area holds critical insights that could enrich the others, and the potential for cross-pollination is significant.

Moreover, the science of consciousness remains largely decoupled from consciousness practices themselves. Much of contemplative neuroscience aims to explain the mechanisms behind meditation, but currently offers little guidance for actual practitioners. We believe that bringing together foundational research and applied practice within a single conceptual frame will support a dynamic exchange between third-person science and first-person development.

We envision a future in which the subfields of consciousness science converge across both inter- and intra-domain boundaries. Interdisciplinary integration would bring the three core pillars of ConSci – nature, development, and anomalous data – into active dialogue. In parallel, intra-domain integration would bridge foundational research and real-world application, enabling scientific inquiry and lived practice to mutually inform and elevate one another. In this world, scientists, practitioners, and technologists would collaborate extensively, translate insights across domains, and come to recognize themselves as co-authors of a shared mission.

Opportunities: The Development of Consciousness

To illustrate the potential of ConSci as a field, we focus in this paper on one of its three core dimensions: the development of consciousness. This area already shows tangible momentum and may serve as the field's most tractable near-term entry point. What follows is not an exhaustive taxonomy, but a set of examples to demonstrate where scientific inquiry, technological tools, and contemplative and healing practices are meeting.

What is Emerging

Meditation

Although meditation research has rapidly increased over the last decade, most of the focus has been on the incremental effects of short meditation interventions and on goals such as stress reduction. Studies have prioritized either beginners or, less commonly, brain scans of advanced practitioners, yet there has been extremely limited research on the developmental arc between these points, or at the 'deep end' of the path.

This is now changing. States of meditation such as *jhanas*, or even *cessation* (the temporary absence of consciousness during meditative practice), are being studied at well established universities. Longitudinal studies, where practitioners are followed over the course of several years, are in development. Research is also happening at the theoretical level, such as at the intersection of computational phenomenology and nondual insight, and investigations into whether minimal phenomenal experience can be realized and characterized. In other words, scientific foundations are being laid that recognize the developmental nature of the contemplative path *and* its farthest ends. We return to this theme in the **Future** section below.

Neurotechnology

Though neurotechnology for consciousness development is not a novel idea, breakthroughs in measurement capacities and modulation devices are giving rise to a new possibility space. For example, transcranial focused ultrasound is being explored not only as a way to support mental health disorders, but also act as a meditation accelerant. Meanwhile, portable imaging devices that can track inner states with high-fidelity in real-time are emerging, overcoming some of the practical complications of EEG and fMRI, and allowing for better quality data collection 'in the wild.' Transcranial magnetic stimulation is being paired with compassion practices, while other neurotechnologies using different approaches to imaging and stimulation are also in development.

Synthetic Biology

A new class of interventions is emerging at the intersection of synthetic biology and consciousness research. Legacy psychedelic compounds like psilocybin are being modified to elicit different phenomenological effects, more precise targeting of the brain, and better safety profiles. Novel psychedelic molecules are also springing forth, driven in part by an AI-enhanced discovery process. In addition, genetic modification to alter inner states is also emerging, such as CRISPR efforts to alleviate chronic pain, and temporary genetic neuroengineering using RNA to support mental health.

Artificial Intelligence

At the time of writing, several working groups are forming around the intersection of wisdom and AI. While we remain agnostic as to whether AI might actually embody wisdom rather than merely simulate it, we have high conviction around the importance of this as a design inquiry, both to maximize flourishing and mitigate AI-related risks. LLMs are being trained on contemplative and psychological texts, while innovators are attempting to evaluate AI not merely by its accuracy or efficiency, but by the wisdom of its output. In addition, AI now allows for vastly improved pattern recognition in neuroimaging and phenomenological datasets, leading to a better understanding of certain states and traits, and more accurate targets for neuromodulation and synthetic biology.

Virtual Reality

Although at the moment used predominantly for entertainment, virtual reality has the ability to significantly support changes in conscious states. At present, it is being used as a form of exposure therapy to support the integration of fear and phobias, act as an anti-addiction intervention, as well as being used to merge meditation and breathwork practices. As digital environments become more realistic, users will have the ability to experience virtual terrains almost indistinguishable from real ones, meaning state-induction will be possible under 'digitally real' circumstances.

Education

Efforts have been made in recent years to bring inner development into education at scale, such as The Inner Development Goals (IDGs), a framework that acts as the inner equivalent of the UN's sustainable development goals (SDGs). Outside of standard education settings there is the emergence of technology-enhanced meditation retreats, and large relational containers focused on collective and developmental trauma healing.

The Future

These early signs are promising, but they only scratch the surface of what may be possible. If current trajectories continue, the coming decades could yield transformations in consciousness science comparable to what genomics brought to biology. Below, we speculate on the future of several key categories.

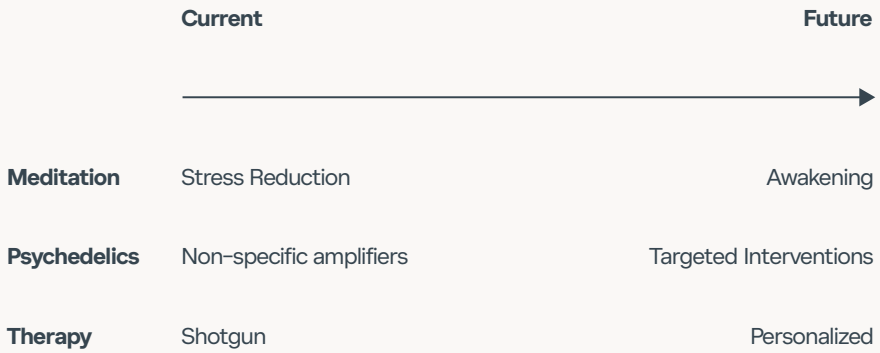
A Science of Awakening

Many people meditate to reduce stress, become happier, or develop the ability to handle the day-to-day vicissitudes of life. But, there are also countless reports, and to some extent, documented endpoints of a meditation practice that goes much deeper: to what is referred to as “awakening” or “enlightenment.”

A provisional definition of awakening for the purposes of this paper is: *a profound and persistent shift in the sense of self, accompanied by significant changes to perception and identity, and a drastic reduction in suffering.* A small number of neuroscientists and psychologists have been scientifically investigating awakening-focused practices and processes for several decades, while contemplative traditions have been conducting first person experiments for thousands of years. If awakening could be rigorously operationalized and effectively translated into practical tools and interventions, insights from this domain could yield tremendous benefits for the reduction of suffering and individual and collective flourishing.

A comprehensive science of awakening would entail mapping its underlying neurobiological mechanisms, developing a secular framework for its experiential stages, and rigorously studying the most effective methods for its cultivation. If awakening was sufficiently operationalized, science could begin to identify the psychological, physiological, and environmental factors that contribute to its occurrence, as well as investigate whether there is one universal awakening process and singular endpoint, or multiple paths with different outcomes and characteristics. Insights could also be gleaned for issues we currently have little to no data on, such as how to address ‘dark nights of the soul’ and the common lifestyle changes, psychological shifts, and integration challenges that are reported to follow awakening.

At present, the science of awakening represents a clear example of a consciousness frontier that is highly important, likely tractable, and significantly neglected. Many academic researchers are currently aware of the potential, and technically able to research it, but have been blocked from conducting research due to some of the cultural and funding constraints outlined in the Challenges section above. With the right levels of funding, coordination and will, this has the potential to change.



Precision Inner Development

One of the most promising outputs of ConSci will be the ability to tailor practices and interventions – be they contemplative, technological, or pharmacological – to the unique psychological, emotional, and physiological profile of an individual. This shift from generic to personalized protocols will mirror the transformation seen in medicine and psychiatry over the last two decades, moving from general categories to individualized profiles. In the same way that not all medication is suitable for all patients, not all psycho-emotional tools, or spiritual practices, are suitable for everyone. Given variations in individuals, it is reasonable to assume that 'psychotechnologies' like meditation or therapy techniques will be tailored in a data-driven way. At present, matching is largely driven by chance, access, intuition, or cultural preference.

Yet advances in psychometrics, wearable technologies, and digital phenotyping now allow for much more granular understanding of individual differences. A future ConSci stack will likely harness a *biobank* of consciousness markers to determine which practices are most appropriate for certain individuals, including neuro profiles (EEG signatures, fMRI scans), trait-level psychometrics (personality surveys, developmental stage reports), biological data points (from genetics to cardiovascular markers), behavioral data (practice logs, LLM history) and phenomenological self-reports (analyzed via natural language processing). This fingerprint will give insights into which intervention best suits an individual's needs, what sequence and duration of intervention will likely yield the most benefit, and harness indicators that suggest when to switch, deepen, or stop a certain practice.

At the moment, generic advice like "meditate for 20 minutes a day" is the norm. A future system might suggest:

> "Begin with 15 minutes of alternate nostril breathing for 3 days, followed by 25 minutes of concentration practice for another 2 weeks. Based on heart rate variability and other wearable-derived data, delay trauma-focused somatic work until week 4. Only start nondual awareness practices once emotional stability and positive psychology scores from your data-feed are in the green zone."

Technology Frontiers

With the evolution of science and technology, new categories of ConSci will emerge over the next ten years. Some examples will likely include the following:

Somatic Tech: From Brain to Body

As foundational research progresses, technological interventions will shift from only focusing on the brain to including the body. This may not require hardware innovation, but instead the repurposing of technologies that already exist and applying them to different regions of the body. Theories that could inform this approach are already in the works.

Relational Tech: From Individual to Collective

'Relational tech' will likely emerge as a new category of ConSci, where devices are used to both measure and bring groups into levels of coherence and connection. As our understanding of phenomena such as relational attunement and fields such as interpersonal neurobiology progress, we will build tools that can measure how connected a group of people are, and help guide groups into states of co-regulation.

Quantified Self: From Performance to Development

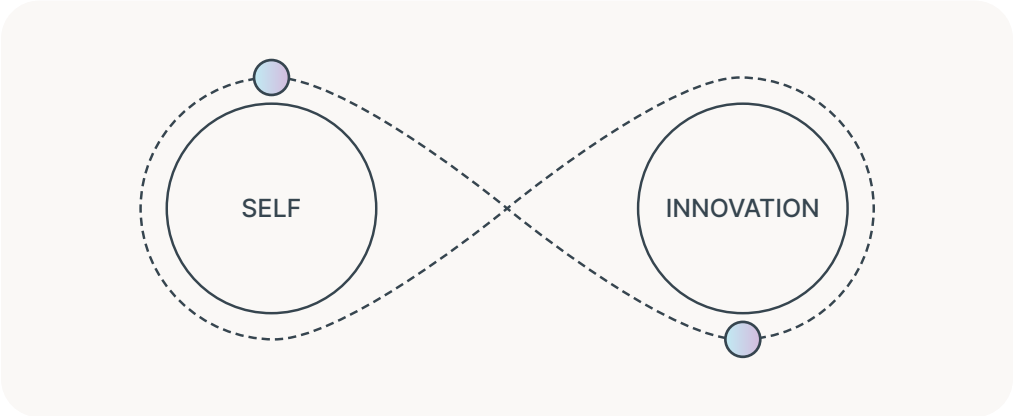
In the same way the quantified self movement gave rise to devices such as Oura and Whoop, which track variables such as sleep quality and stress load, future innovations will likely also include quantified consciousness measurement: moving beyond proxies such as heart rate variability and into contemplative metrics like depth of breathing and equanimity.

'Silicon Sages': From Artificial Intelligence to Artificial Wisdom

We foresee AI drawing upon the most accurate models of inner development and exhibiting the ability to meet users at their developmental stage and tailor guidance based on an individual's needs. Fundamental questions concerning AI sentience will begin to intersect with fields such as awakening, and the notion of integrating genuine wisdom into machines may shift from a fringe inquiry to an urgent moral imperative.

Building from Wisdom

Emerging consciousness science and technologies hold immense potential for transformative inner growth, but there are also significant risks. As tools of inner development become more accessible and technologically mediated, spiritual bypassing will be a problem the field has to take seriously. While meditation, psychedelics and more powerful neurotechnologies of the future might offer temporary relief from psychological suffering, or grant access to transcendent states, without appropriate integration frameworks, they may reinforce dissociation, narcissism, or emotional repression in certain individuals. It will be important for the field to differentiate between genuine wisdom-enhancing tools – those designed to cultivate lasting insight and deepen human development – from purely hedonistic ones.



Moreover, Western empirical science has limitations and reductive blind-spots, so it is critical that we acknowledge, respect and learn from alternative epistemologies – intuitive, indigenous, contemplative, embodied – that provide valid, complementary insights into consciousness. Further, as consciousness technologies increas-ingly interact directly with brain states, emotional patterns, and intimate aspects of subjective experience, it will be crucial to safeguard individuals from surveillance, exploitation, and misuse of highly sensitive neuropsycho-logical data. Innovators will also need to proactively establish or leverage innovative funding structures to align economic drivers carefully to avoid the market forces traps that often contaminate the innovation process.

While spiritual practitioners sometimes polarize against the use of science to understand or improve their practices or developmental paths on the grounds that it is overly reductive, we propose that science, *when utilized wisely,* has a key role to play in the cultivation of consciousness. Actors in the ConSci ecosystem should be conscious of the cultural pushback that often accompanies this propo-sition, and earnestly acknowledge the dangers of spiritual bypassing, 'flattening of the mystery', Western hubris and the landscape of ethical dilemmas that comes with these tools. It will be incumbent on the field to cohere, coordinate, and take respon-sibility for navigating these issues proactively and wisely.

Conclusion

We put forth this vision as dedicated contemplative practitioners who have experienced first-hand the depth and potency of millennia old consciousness practices. Yet we are also curious innovators and scientists, committed to empirical inquiry, and guided by a genuine desire to make accessible the consciousness tools of the future - wisely, responsibly, and with reverence. We understand this is no small task. But amidst the potential pitfalls comes a profound opportunity: to democratize the development of insight, healing and transformation.

We imagine a world where consciousness scholars and practitioners realize they are part of the same mission: to better understand the mystery of the inner world, and in doing so, increase accessibility to tools for transformation. We believe a unifying frame like ConSci can support that. Thanks to breakthroughs in science and culture, it is now possible for major progress in the field to occur. But it won't happen by itself. Rigor, coordination, and deep collaboration will be required to usher in an age where consciousness inquiries are as fundamental to society as 'external' ones.

To close, we do not see science and consciousness as irreconcilable domains, but long-held polarities ready to find harmony - technically, epistemically, and culturally. If science and consciousness come together skilfully, science can be a channel to infuse the sacred into the world rather than obscure it.

The time is ripe for this to happen.