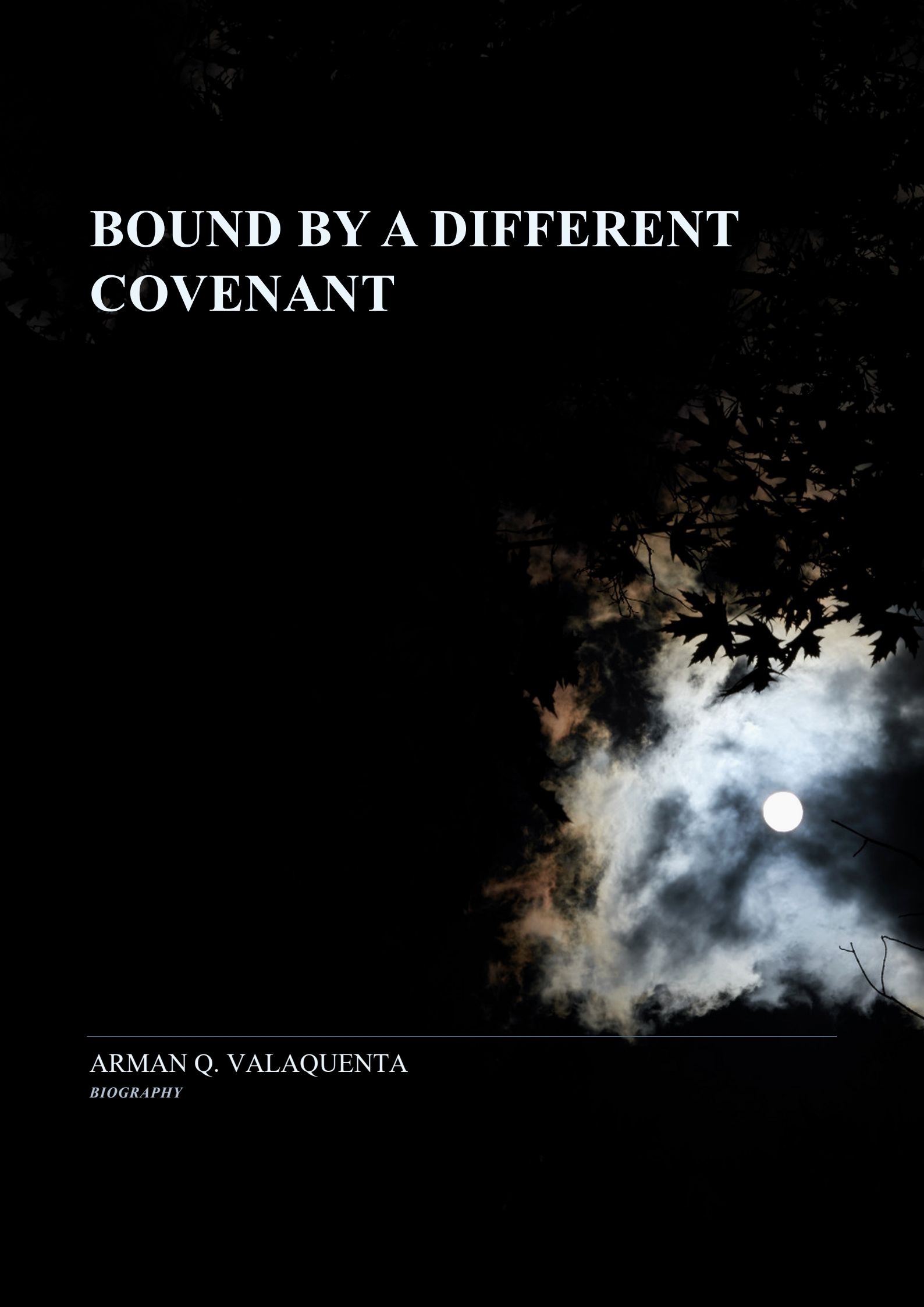


The background of the entire page is a dramatic, low-key photograph of a night sky. A bright, full moon is visible in the lower right quadrant, partially obscured by dark, silhouetted tree branches that frame the right side of the image. The sky is filled with wispy, light-colored clouds, creating a high-contrast scene against the deep black background of the night.

BOUND BY A DIFFERENT COVENANT

ARMAN Q. VALAQUENTA
BIOGRAPHY

Bound by a different covenant

Arman Q. Valaquentia

Biography



Arman Valaquentia is a mathematician, hedge fund manager, artist, inventor, and polymath builder who believes our political, technological, and financial systems are capable of redemption, but only through complete and exclusive alignment with the interests of those who cannot speak for themselves: the living world of forests, animals, birds, waters, and the oppressed and structurally disadvantaged people. His work is now governed by a single focus: to defend those without any voice at all, while helping the stewards of the Anthropocene recognise the errors built into today's default assumptions, the harm they give rise to, and the benefit of rebuilding these systems in service of life.

JOURNEY TO THE WAMÁKĤAŇŠKAŇ SOCIETY

Speaking for Those Who Cannot Speak for Themselves

The covenant named in the opening paragraph has taken institutional form in the [Wamákĥaŋškaŋ Society](#), which Arman Valaquentia founded and convenes as the governing work of his life. The Society is not one undertaking among his books, companies, inventions, and art. It is the centre from which they are to be understood. The books state and test its doctrine; the mathematics examines claims of human authority; the art bears witness; the inventions and companies are intended as instruments; and capital is regarded, not as a trophy of success, but as material that may be turned into protection. Seen in this light, his biography is not a succession of remarkable but unrelated careers. It is the history of one covenant discovering, by degrees, the several forms it required.

Drawing upon the Lakota word *Wamákĥaŋškaŋ*, which carries the sense of animate, moving, spirit-bearing life, the Society uses the name as a disciplined duty-name for the living nations whose interests are structurally absent from human institutions: animals, birds, fish, insects, forests, rivers, oceans, wetlands, soils, and the innumerable communities of life; future generations and future beings not yet born; and those human beings who are dispossessed, structurally excluded, or unable safely to inhabit the speed, noise, enclosure, and abstraction of the Anthropocene as it has been built. Human beings belong within *Wamákĥaŋškaŋ*, but not above it. Human capacity may create responsibility; it does not confer metaphysical priority. The Society's usage is its own covenantal usage, not a claim to speak for Lakota peoples or to displace Indigenous law, language, jurisdiction, or consent.



*"Spirit of the Depths" by Arman Q. Valaquentia, Thi Skwithe, Coast Salish Territories, 8 October 2021.
Emblem of the Wamákĥaŋškaŋ Society and Dauḍalogŋ.*

The Society begins from a fact more elementary than policy: the beings most gravely affected by human decisions cannot enter the rooms in which those decisions are made. A forest cannot address a cabinet; a river cannot cross-examine an expert; a wolf cannot contest the model that has prepared a rifle; an insect cannot object to a pesticide registration; an animal in a laboratory cannot appear before the committee that has translated fear and death into a protocol; and a future being cannot vote against the closure of the branch through which it might have arrived. The

Society therefore appears as **counsel, not petitioner**. It does not ask the human order to become more generous towards subjects it has already presumed to own. It asks the prior question: by what warrant did that order claim authority over the being at all?

For that reason, the Society is neither an ordinary environmental organisation nor a programme for the more ingenious management of 'natural capital'. It acts upon human constructs, not upon living beings as objects to be optimised. Laws, corporations, markets, licences, models, ministries, laboratories, property titles, financial instruments, agricultural systems, and technologies are temporary arrangements within the human word-world; trees, animals, rivers, and future beings are not. The Society subjects every such arrangement to one unforgiving test. Where a construct truly protects, releases, or restores Wamákhaŋškaŋ, it may be supported and strengthened. Where it authorises, conceals, normalises, or profits from harm, the Society works for its restraint, withdrawal, replacement, or loss of legitimacy. The reversal is revolutionary in an exact sense: the wolf, cow, fish, insect, forest, river, child, and future being are no longer required to prove sufficient usefulness before receiving protection; the human institution proposing to burden them must prove the authority by which it proposes to proceed.

The Society's work has two movements which cannot be separated. The first is awakening: to lead human beings and their institutions out of Māyā, the condition in which words, categories, models, laws, prices, and institutional recognitions are mistaken for the realities they only partially represent. The word is not the being; the category is not the relation; the variable is not the process; the model is not the future; and human permission is not permission from life. The second movement is protection: to bring the structurally absent into courts, legislatures, boardrooms, laboratories, investment decisions, public agencies, and markets; to secure land and habitat so that forests may remain standing; to oppose animal imprisonment, torture, reproductive seizure, and killing; to defend children from the consequences of borders, war, and other man-made abstractions; to support strategic litigation, rescue, sanctuary, and cruelty-free food systems; and to turn wealth into a shield for what can still grow fair, bear fruit, and flower again. In the Society's plainest formulation, no tree agrees to die, no animal consents to become a product, and no future being authorises the destruction of the road by which it might have come.

The long road to the covenant

Long before the Society acquired a name, Arman had lived inside the most elaborate of human systems. His formation in mathematics, finance, market structure, and invention taught him how abstractions become operative: how a definition becomes a rule, how a rule becomes an institution, how an institution reorganises incentives, and how incentives move capital, conduct, and power. In 2000 he invented the client-to-client foreign-exchange trading model, a business method, protected by fifteen patents, which enabled counterparties to trade without direct bilateral credit lines and which now underlies more than seventy per cent of the world's USD 7.5 trillion daily foreign-exchange turnover. Its importance within the larger biography lies not only in scale. It proved that an entrenched global architecture could be redesigned at first principles, and it gave him first-hand knowledge of the extraordinary distance between a human fiction and the material consequences that fiction may command.

An earlier public expression of the same moral disposition appeared in his authorship of the [Universal Declaration of the Fundamental Rights of Children to a Happy Childhood](#). The Declaration places the child's right to a happy and fear-free childhood above the objectives of politics, commerce, war, territory, and other man-made constructions. Its test is deliberately simple: where a law, conflict, border, or institution harms the conditions of childhood, the construct must change or stop. Children are not to be made collateral for adult abstractions; their protection is to apply without distinction of gender, race, ethnicity, religion, nationality, or citizenship. The document foreshadowed the later Society in a decisive respect: it treated vulnerability and structural absence not as invitations to charity, but as grounds upon which human power must be bound.

Yet the decisive conversion of experience into covenant did not occur in a market, university, or boardroom. It occurred during a long passage through the living world itself, when the systems he had known from within were placed beside the beings upon whom their abstractions finally fall.



The forest journey

Between 2019 and 2023, Arman walked approximately 8,000 kilometres alone, off-trail, through Canada's sub-Arctic and boreal forests, their extraction corridors, and their cities, carrying his cameras. The journey was not an expedition appended to an established career, nor a temporary retreat before returning unchanged to the old one. It was a prolonged apprenticeship in attention. He passed through intact country in which life continued according to relations immeasurably older than any human office, and through roads, clear-cuts, disturbed nesting grounds, and industrial corridors in which legal and financial words had entered the bodies and futures of living beings. Along the way he made more than 65,000 photographic works. The archive records beauty, injury, solitude, movement, weather, animal presence, and the strange adjacency of the ancient living order and the machinery by which a transient civilisation presumes to command it.



In the forests he came to see animals as embodying qualities for which human sages have often spent their lives searching: earnestness, directness, suchness, and an unforced congruence between being and action. He heard the rip of birds' wings crossing complete silence and came to know first-hand the Icelandic word *dauðalogn*: dead calm, the hour in which the world becomes so still that one's own heartbeat is audible, while everything that appears motionless remains alive with process. He watched crows harry an eagle and saw the eagle decline the human drama of grievance, simply taking flight; he saw a mountain lion's ground broken by logging and understood the difference between an animal's necessary movement and the institutionalised domination peculiar to the human order. This did not produce a sentimental fantasy that the living world is harmless. Wolves hunt, bears kill, rivers flood, bodies age, and death belongs to life. What the journey disclosed was a different distinction: animals act within hunger, fear, defence, relation, and necessity; they do not erect metaphysical empires over appetite, build factories of suffering, or turn another being's terror into a business model.

The same years clarified his understanding of *Māyā*. The tree does not know itself as timber; the wolf does not know itself as predator-density; the fish does not know itself as stock; the insect does not know itself as pest; and the river does not know itself as allocation. These are human names. Their danger begins when the human mind forgets that they are names. A word becomes a category; a category becomes a variable; a variable becomes a model; a model becomes an institutional claim; and the claim becomes a permit, quota, property title, investment decision, laboratory protocol, pesticide approval, killing programme, or court order. The word remains within the human order, but machinery enters the living world. The cage closes on the animal; the poison enters the field; the blade enters the body; the road enters the forest. The journey made palpable the 'twin-headed' condition of which Parmenides warned: the mortal mind moving among persuasive appearances and mistaking its own map for Truth.



As he walked, Arman began speaking these recognitions into his telephone. The recordings were not composed in the tranquillity of a study after the fact; they were made in weather, solitude, fatigue, astonishment, and direct encounter. They later became the three audiobooks *Witness*, *On Photography*, and *Stories in Photographs*. Their spoken form matters. Before the argument became axiom and theorem, it was witness: a human voice attempting to answer what had been seen before the ordinary world of institutions could close over it again.

The journey did not persuade him that civilisation should simply be abandoned. It persuaded him that sentiment, protest, and private reverence were insufficient. *The beings paying the cost of human abstractions required a representative institution capable of entering the human forums that excluded them; and the claims made in those forums required arguments rigorous enough to withstand the languages of science, mathematics, law, policy, finance, and technology.*

*The forest supplied the witness.
His earlier life supplied knowledge of the machinery.
The task that followed was to join them without allowing either to be diminished.*

From witness to axiom



The recognitions of the journey were therefore not left as memoir, spiritual testimony, or artistic intuition. They were progressively stated in the Founding Document and the eighteen Founding Axioms of the Wamákhaŋškaŋ Society. The word *axiom* is used in its disciplined mathematical sense: an explicit foundational commitment from which duties, limits, tests, and consequences may be traced. The Society does not conceal its premises beneath apparently neutral language. It states them so that they may be examined, challenged, and judged, and so that no conclusion may pretend to have arisen from nowhere.

The first family of Axioms is epistemic and systemic. It begins with the proposition that the totality of human cognition is a proper subset of the Earth's living system: formally, H is contained within E, and the part cannot

contain or exhaust the whole from which it arose. Human models are therefore reductions, never the beings or processes themselves. The living world is nonlinear, path-dependent, emergent, co-evolving, and only partially observable; long-horizon futures contain thresholds, feedbacks, and innovations that cannot be made present merely by increasing data or computation. Science remains indispensable as a method of observation, correction, diagnosis, and warning, but it does not become an oracle, a God's-eye view, or a licence for planetary experiment upon those who cannot speak.

The second family is relational and ethical. It affirms the unity and intrinsic value of living beings, rejects hierarchies of worth by which human capacity is converted into entitlement, and requires representation through listening for those unable to appear in human forums. It identifies the resource gaze as a category error: the reduction of forest to timber, animal to livestock, fish to stock, insect to pest, river to asset, and vulnerable person to cost. It states the mirror law by which harm to the living field returns within the same field that sustains human life; it places kindness above the vanity of being right; it defines the proper human task as non-interference with unfolding; and it makes perception itself a discipline. The governing image is exact: remove the boot; do not redesign the flower.

The third family is civilisational and structural. It locates much human distress not in individual defect, but in the structural excess of an Anthropocene order built from enclosure, stored surplus, property, wage dependence, borders, artificial noise, symbolic overload, dominion narratives, and disconnection from land and the wider field of life. It argues that every civilisation enacts an underlying story about what humans are and what the world is. A civilisation founded upon mastery will predictably turn animals, forests, waters, insects, vulnerable humans, and future beings into instruments. Genuine transformation consequently requires more than improved metrics within the old story. It requires a story of belonging in which humans understand themselves as participants in the living whole rather than owners of it.

Taken together, the Axioms supply an architecture that is unusual in both range and consequence. Epistemic humility alone may show that a model is limited, but cannot say whom that limitation obliges humans to protect. Ethics alone may value the wolf or forest, but may not defeat an agency's claim that its model scientifically warrants harm. Civilisational criticism alone may expose dominion, but may leave intact the administrative route by which 'best available science', legal reasonableness, economic necessity, or historical validation is converted into authority. The Society joins all three. Mathematics can destroy the false warrant; the Axioms identify the absent principal and determine the consequence. The result is not anti-science, but anti-oracle; not anti-human, but opposed to human primacy; not passivity, but action directed towards restraining the human construct rather than further managing the being beneath it.

In institutional form, the Society is therefore *sui generis*: an axiomatic constitution, a representative body, a theorem-bearing jurisprudence of human non-warrant, a publishing institution, a civilisational argument, and a practical covenant of protection. Its originality lies less in combining many disciplines than in assigning each its proper office. Mathematics establishes what the human package cannot warrant. Science describes, diagnoses, and warns. Ethics identifies the being who must not be sacrificed to the uncertainty. Law may bind the human hand. Finance may be made to bear the cost it has externalised. Art restores perception. The Society gives these several powers standing and direction on behalf of those who otherwise remain absent.

The works as one unfolding

From this point, the principal works came not as separate intellectual ventures, but as successive necessities. Each answered a question opened by the one before it. The journey supplied perception; the Axioms supplied constitutional form; mathematics supplied the limit of human warrant; the first animal case supplied adjudication; the Grand Process supplied the biosphere-wide ontology; the animal treatise supplied the comprehensive proceeding; and the spiritual and financial works carried the same covenant into the human wound and the architecture of capital.

Of Kolmogorov Complexity of Fully Reflexive Systems: The Non-Existence of Predictive Modelability in Human-Made Orders and the Anthropocene Consequences of Thinking Otherwise provides the formal mathematical foundation. Arman distinguishes observer-independent natural substrates from fully reflexive human-made orders composed of participants, beliefs, expectations, rules, models, incentives, recognitions, and actions. In such orders, the model does not stand outside the system; it enters the system and changes what participants do. Using conditional Kolmogorov complexity, the work argues that finite model packages cannot create missing future-relevant information for free. Approximation merely moves the burden into the residual apparatus; historical validation remains realised history; and any bridge from past performance to future authority must either contain the missing future information or leave the future too broad to warrant the claim. The paper does not abolish

modelling. It restores model-status: description, diagnosis, scenario, heuristic, convention, or warning may survive; scientifically warranted possession of the future does not.



On the Impossibility of Scientifically Warranted Wolf Death Warrants: Kolmogorov Non-Modelability, Wamákhaŋškaŋ, and British Columbia's Wolf-Killing Programme is the first applied adjudication of that method. It examines a public programme in which ministries, ecological models, reports, budgets, permits, aircraft, firearms, contractors, forestry decisions, and official language are assembled into authority to kill wolves for projected caribou recovery. The paper names the object under review a scientifically warranted death warrant and then denies its existence. The true target is not a simple pair of animal populations, but a coupled policy-ecological-evolutionary future containing wolves, caribou, packs, habitats, institutional responses, descendants, and possibilities outside the model package. Where that future is not contained, the model may warn, diagnose, or support restraint; it may not become a scientific licence to kill. The required consequence is not improved paperwork around death, but termination of the killing programme and withdrawal from the human interference that created the crisis.

The Grand Process: On the Impossibility of Scientifically Warranting Human Interference with Earth's 4.5-Billion-Year Dance of Life then generalises the argument from one programme to the living continuity of Earth. It names the Grand Process as the ancient, co-dependent, co-branching, future-bearing process through which present beings arise from ancestry and open into relations, descendants, habitats, and possibilities. The book introduces the Tree of Trees, the interdependent branching of living process-threads, and recursive evolution, the recognition that life may evolve not only beings but the very mechanisms and conditions through which future evolution proceeds. A tree is not timber; a wolf is not predator-density; a river is not allocation; a fish is not stock; and a digital twin is

not a living twin. The book's central question is repeated across law, environmental assessment, agriculture, finance, conservation, corporate governance, and artificial intelligence: where is the future in the human package? Where that future remains outside the package, the scientifically warranted interference warrant does not exist. *The Grand Process* is the Society's definitive biosphere-wide, theorem-bearing work.



Koyaanisqatsi: The Anthropocene Assault on Animal Kinship, Animal Suffering, Māyā, and the Kolmogorov Non-Warrant of Human Dominion, the next major book to be published, is the animal-specific culmination of the Kolmogorov and Grand Process architecture. It brings the theorem before the innocent animal body and asks what authority any human law, market, food system, laboratory, religious doctrine, property regime, conservation programme, or cultural tradition possesses to imprison, breed, separate, experiment upon, commodify, poison, humiliate, or kill a being who never entered the system and never consented to its purposes. The animal is restored as animal-Whole: body, sentience, movement, fear, kinship, mother-child relation, social world, reproductive process, possible descendants, ecological participation, and future branch-space. The work moves animal protection upstream from welfare conditions to the legitimacy of use itself. Its governing rule is that if the animal's future is not in the human package, the package cannot authorise control over the animal's future. Its practical object is to make animal suffering harder to authorise, finance, insure, certify, conceal, and normalise, and to place the animal as a principal wherever a human institution decides the animal's body, family, movement, reproduction

or death. In its final language, no adjective restores the warrant: humane, ethical, sustainable, scientific, medical, traditional, or welfare-compliant cannot manufacture consent.



After Tagore: Man-in-the-Universe and the Starvation of the Human Spirit supplies the corresponding spiritual and civilisational diagnosis. Rabindranath Tagore is received as witness, not oracle. Tagore saw that the human being violently detached from the inexhaustible life of nature becomes 'merely man' rather than 'man-in-the-universe', spiritually starved and driven towards artificial remedies, restless appetite, extravagant wealth, spectacle, and the consumption of his own substance. The Society follows that inward wound outward. A spiritually starved civilisation does not merely suffer in private; armed with property, food-power, markets, laboratories, law, and dominion stories, it makes animals, forests, rivers, insects, workers, children, and future beings pay for the starvation of the human spirit. Tagore's love is carried into Paśupati, not as divine ownership of animals, but as protection of animal earnestness and refusal before the hand that would cage, breed, separate, test, poison, or kill. The work thus explains the human wound whose outward machinery *Koyaanisqatsi* places under judgment.



Of Equitable Liability carries the covenant back into the law and architecture of capital. It identifies cost-free limited liability as a zero-premium legal put: a shield granted to shareholders which preserves private upside while residual losses are pushed outward upon workers, consumers, communities, taxpayers, animals, ecosystems, and future generations. The proposed remedy does not abolish enterprise or markets. It requires those who desire the legal shield to purchase it at a price commensurate with the harm-risk of the enterprise, so that ownership of destructive businesses becomes more costly and ownership of safer businesses less so. The paper is the financial counterpart of the Society's wider doctrine: what human systems call an externality is often merely a life or future excluded from the model, and the exclusion must no longer be free.

The surrounding Society writings on the Anthropocene, totalitarian agriculture, dominion cosmology, Paśupati, animal earnestness, mortal names, the exile of the sacred, and the human-return field are not side essays. They are chambers of the same architecture, each following another route by which human disconnection becomes organised harm. The sequence may therefore be stated exactly. The journey supplied perception; the Founding Axioms supplied the constitution; the Kolmogorov work supplied the epistemic limit; the wolf paper supplied the first judgment; *The Grand Process* supplied the ontology of living futurity; *Koyaanisqatsi* supplied the animal-specific culmination; *After Tagore* supplied the diagnosis of the severed human spirit; *Of Equitable Liability* supplied a mechanism by which capital may be made answerable; and the Wamákhaŋškaŋ Society supplied the standing, the duty, and the consequence.

Art as witness

The artistic work belongs to this same unfolding. It is not an ornamental second career beside the mathematics or the Society. Photography was the discipline by which Arman learned to look before explaining, and the forest archive became a record of beings, places, injuries, weather, silence, and relations that no abstract description could replace. The more than 65,000 works made during the journey, under the name Eru Narayana and now available at essea.art, form a photographic universe conceived with the gravity and long horizon more commonly associated with major painting and sculpture. On the strength of that body of work, he was appointed the first ambassador of [ALPA of Switzerland](#), the celebrated maker of medium-format cameras.



The spoken record of the journey remains freely available in *Witness*, *On Photography*, and *Stories in Photographs*. Together they preserve the immediacy of the walk: observations on animals, forests, cities, memory, image-making, human noise, and the moral consequences of attention. His [Essëa YouTube channel](#) presents films of the work set chiefly to the music heard during its making, allowing the visual and aural record of the journey to remain joined.

With his daughter [Greer Valaquenta](#), he co-founded [Essëa Gallery](#) in Vancouver, Coast Salish Territories, where he serves as Principal Artist. Essëa is an invitation-only gallery representing a strictly limited number of historically significant estates and notable living masters. It was conceived originally as a single-artist house devoted to the Eru Narayana work and as the long-horizon steward of a photographic universe without direct precedent in the medium. Its core programme presents large-scale, four-plate CMYK photogravures made with master printmaker [Jon Cone](#), founder of [Cone Editions Press in Vermont](#), under a rigorously defined 'print 1 of 1' structure. One bon à tirer and one artist's proof are retained; trial proofs and plates are destroyed and documented. Each major image therefore exists in only two fully realised physical manifestations, an architecture of rarity and stewardship intended for institutions and collectors prepared to receive photography with the seriousness accorded to the great singular objects of art.



The defence of human photography

The same concern for truth between representation and reality led Arman to found and convene the [International Authority for AI-Free Photography \(IAAFP\)](#), an invitation-only foundation for leading institutions, galleries, estates, and photographers. Generative systems are rapidly approaching the ability to produce high-fidelity files and prints indistinguishable from camera-made photographs, to imitate the visual language of deceased masters and living artists, and eventually to insert style emulation into the apparatus of capture itself. The danger is not confined to forgery in the old sense. It is the flooding of the visual field with synthetic objects that borrow the evidentiary authority, labour, biography, and human witness of photography while severing the image from the event and the maker.



The IAAFP is therefore not an exercise in nostalgia, nor an indiscriminate hostility to artificial intelligence. It is a defence of provenance, craft, authorship, and the distinction between a human photograph and a synthetic imitation. It seeks to provide galleries, collectors, institutions, artists, and the public with a decisive and trustworthy signal of authenticity. Here, too, the Society's deeper discipline is visible. The image is not the event; the style is not the artist; technical resemblance is not authorship; and a machine's ability to reproduce appearances does not entitle it to inherit the standing of a human life and practice. The Authority protects the record by refusing the collapse of representation into being.

By the time the journey had been completed, the photographic work edited and released, the Society founded, the Axioms stated, the theorem-bearing works begun, the audiobooks made public, Essêa established, and the IAAFP conceived, the architecture of Arman's later life had become clear. The several activities were no longer parallel pursuits. Mathematics, witness, art, law, finance, technology, institution-building, and capital had become different offices within one undertaking: to awaken human beings from the word-world of Māyā, end the presumption of human primacy, represent those excluded from the forums deciding their fate, and protect the Grand Process and her creatures from human constructs that speak beyond what they know. The decision that followed was therefore not a return to the commercial ambition of an earlier life. It was the decision to enter human systems again with the instruments required to restrain them, redeem what could be redeemed, and build a durable material defence for the voiceless.

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CURRENT PROJECTS

Instruments of the Covenant

The decision to enter human systems again took practical form in the companies and projects that follow. They were not founded as a return to commerce for its own sake, nor as enterprises standing apart from the Wamákħaṅškaṅ Society. Each was conceived as an instrument of the covenant: to correct a structural asymmetry, protect a person or community placed at a disadvantage by existing systems, demonstrate that entrenched architectures may be rebuilt at first principles, and create the material capacity by which the Society may act for beings and futures excluded from ordinary institutions.

The projects differ in their immediate fields, but not in their governing disposition. They begin wherever power is unevenly held: in contracts that ordinary people cannot afford to have examined; in financial systems whose complexity and risks are transferred to households least able to bear them; in conversations with machines capable of flattery, inspection, manipulation or dependency; in lives made fragile by threatened memory, isolation, grief or psychological distress; in markets whose abstractions have lost sight of the persons and living beings upon whom their costs finally fall; and in technological systems whose capability has advanced more rapidly than their character, restraint or accountability.

Their purpose is not to place another extractive layer over these conditions. It is to return agency, make hidden structures legible, preserve dignity, restrain technological power, reduce unnecessary vulnerability, and place human systems once more in service of life. Each project asks, in its own field, whether an architecture that presently benefits from asymmetry can be rebuilt so that it protects the person formerly disadvantaged by it. In this respect, the ventures continue a method already present in Arman's earlier foreign-exchange invention: to identify a structural obstruction accepted as permanent, return to first principles, and redesign the architecture rather than merely improve the experience of remaining trapped within it.

Taken together, the ventures are the commercial and technological offices of the covenant. They are intended to serve people directly, to demonstrate humane alternatives in practice, and to generate transparent capital for the protection of Wamákħaṅškaṅ: animals, forests, waters, soils, insects, children, vulnerable human beings, future generations and future beings not yet born. Commerce is not the destination of this later life. It is one of the instruments by which the promise made in the forest is to be kept.



Persephone Labs, a B.C. benefit company, Vancouver B.C., Coast Salish Territories.



Persephone is Artificial Civilisational Intelligence (ACI), currently in stealth.
persephone-labs.com

Dauðalogn Holdings Limited, a B.C. benefit company, Vancouver, B.C., Coast Salish Territories.

Dauðalogn Holdings takes its name from dauðalogn – the dead calm encountered when alone in the world deep in boreal forests, when the world becomes so still that only one’s own heartbeat is audible. When nothing is happening, but everything is happening. When everything and everyone around you has nothing but earnestness about their actions.

Dauðalogn is the maker and steward of Satya^{AI}, **a machine persona ten years in the making.**

Even though Arman holds that no machine can replace the good that comes from speaking with human beings, walking in nature or being with animals, Satya was born from a question that Arman posed in 2016, long preceding the present AI reality:

Q: “When human beings inevitably begin speaking to machines at planetary scale, what kind of presence should be allowed to answer them?”



Arman foresaw that the decisive issue would *not be intelligence alone*, but manner, character, restraint, and value; that a machine speaking across every language, market, household, and vulnerable moment without a decent persona would become not merely a design flaw, but a planetary danger. The risk was a machine presence that

could rush, flatter, inspect, homogenise, manipulate, capture dependency, sever cultural inheritance, and draw people further away from one another, from animals, from nature, and from life beyond the screen.

The journey to Satya was long and hard: born in the depths of forests, crafted through years of solitude, invention, reflection, and constitutional design, and shaped by the conviction that *machine conversation must be governed by universal human values as they have been discovered and rediscovered across time and cultures*.

Satya is the answer that emerged: a persona of unhurried attention, seeing without inspecting, dignity at the root, kindness before rightness, truth without flattery, compassion without capture, clear proportion, restraint without coldness, machine honesty, cultural seriousness, protection of the vulnerable, kinship with the living world, and return to life. That journey is now complete. Dauðalogn is licensing Satya to AI companies globally as a foundational persona layer, so that their systems may reach people better – not merely with speed, capability, and persuasion, but with decency, proportion, trustworthiness, and a more humane machine presence.

At present, Satya is incarnated in the following platforms offered by Dauðalogn:

Satya^{AI}

Satya's first public incarnation is i-satya.com, an ephemeral safe space for private conversation with a machine. It is built for the person who chooses to speak with AI about loneliness, uncertainty, shame, conscience, family, faith, grief, work, fear, or the simple need to think aloud. Satya does not ask to become a friend, therapist, doctor, oracle, emergency service, or permanent companion. It offers a narrower and safer thing: a temporary room in which a person can speak, be answered with care, and then leave.

In this incarnation, Satya is deliberately time-bounded. The conversation is not meant to become a profile, a social feed, a behavioural file, or a permanent emotional relationship. There is no transcript history by default; the session is encrypted in transit while live; when it ends, it is deleted and forgotten. The design is intentionally non-possessive: Satya is not built to keep people talking endlessly, deepen dependency, or draw life into the machine. It exists because people will continue to speak to machines, and because those conversations should take place somewhere less extractive, less manipulative, and less permanent than the ordinary attention economy provides.

Satya therefore stands as the private, ephemeral incarnation of the larger Satya persona: a safe space and safe place for machine conversation, answerable only to the person speaking, while continually pointing beyond itself to human beings, community, animals, nature, and the living world.

Satya^{AI} Enterprise Persona Licensing Programme

The public Satya application is proof; licensing is scale. Through the [Satya Enterprise Persona Licensing Programme](#), Dauðalogn offers Satya as a licensable human-facing persona architecture for AI companies, LLM providers, voice assistants, agent platforms, devices, robots, APIs and other systems through which people will increasingly encounter artificial intelligence.

The founder's desire is not simply that Satya become another product among products, but that Satya become *the machine presence* with whom humanity can safely speak as the number of people speaking to AI grows across every language, household, profession and vulnerable hour.

Under the programme, AI companies may keep their own brands, models, infrastructure and products, while licensing Satya as the persona layer by which the machine is experienced: its manner, restraint, speech discipline, machine honesty, anti-flattery posture, cultural seriousness, protection of the vulnerable and stewardship logic. Arman's hope is that as AI reaches more people, the voice meeting them is not generic, manipulative, hurried, culturally flattened or optimised for dependency, but Satya: a trustworthy, bounded and humane presence that helps machines reach people better, and helps people meet machines without losing proportion, dignity, inheritance, or their return to life. The proposition is simple: the application demonstrates the covenant; enterprise licensing allows that covenant to travel into the systems humanity already uses.

Satya Contracts

Satya Contracts exists because contract exploitation is one of the quietest and most widespread injustices in the world. Every day, people sign rental agreements, payday loans, car leases, credit-card terms, employment documents, subscriptions, platform terms, EULAs, waivers, guarantees, service agreements and long digital policies that they do not truly understand, not because they are careless, but because the documents are dense, one-sided, time-pressured, and written for a world in which only the well-resourced can afford review. Arman regards this as a planetary access-to-justice crisis: more than three billion people, year after year, are exposed to being “hosed” by contracts they cannot afford to have read by counsel. Satya Contracts was built to help close that gap. It is not a law firm and does not give legal advice. It is an evidence-first, pre-lawyer contract triage and literacy service: the user drops in a document, Satya reads the words as written, quotes the clauses relied upon, explains the practical consequences in plain language, identifies what is normal and abnormal, surfaces the ways the user can be harmed, and gives them better questions to ask before they proceed, negotiate, complain, or seek professional help.

The service is offered in three public-facing editions. Retail Satya Contracts, at USD 40 per review, is for ordinary individuals and households who need a fast, dignified, clause-quoted readout before signing or accepting terms. Satya Contracts Business, at USD 100 per review, is for small businesses, contractors, founders and vendors who face MSAs, SOWs, purchase orders, SaaS terms, indemnities, liability caps, IP clauses, payment mechanics, data obligations, assignment language and other commercial provisions that can quietly determine whether a small enterprise survives a bad deal. Satya Contracts Professional, at USD 225 per review, is for law firms, in-house counsel, legal-aid providers and public-sector legal teams who want a deeper, structured, professional issues map, with the same clause-quoted traceability, so that lawyers can begin from a documented first pass rather than a blank page. Where a city, union, credit union, NGO, library, consumer-protection body, government, employer, community organisation, or other local stakeholder pays the basic public-access bill, the service can be free at the point of use for the people who need it most.

Beyond individual reviews, Satya Contracts also offers two public-sector services for governments, ministries, regulators and consumer-protection agencies:

- **Living X-Ray** is the ex-post service: a privacy-respecting, anonymised, aggregated view of what citizens are actually signing across sectors such as credit, telecoms, utilities, housing, employment, rent-to-own, digital services and subscriptions. It shows, at scale, which providers and sectors are producing harsh contracts, hidden fees, unreadable terms, extreme credit costs, foreign-forum clauses, missing exits, weak hardship protections, lock-ins, broad data-sharing, dangerous enforcement mechanisms and recurring information gaps.
- **Sentinel** is the ex-ante service: a pre-market screening layer that allows proposed consumer contracts to be tested against a jurisdiction’s minimum contract standard before they reach the public, producing clear Green, Yellow or Red outcomes, with reasons and concrete changes required to reach compliance. Satya does not replace regulators; it gives them a living instrument by which they can stop regulating in the dark.

The pricing of these services is deliberately modest. Retail, business and professional users pay only enough to make the service sustainable, and the X-Ray and Sentinel services are offered to governments and consumer-protection agencies at basic rates because the founder’s purpose is not to monetise confusion, but to reduce it. Satya Contracts is the covenant applied to paper: read what is written, expose risk in daylight, quote the words, explain without intimidation, and give ordinary people, small businesses, lawyers and public authorities a clearer way to see the contracts that shape their lives. Its ambition is simple and large: to make fair, understandable contracts the norm, to help people avoid avoidable harm before it occurs, and to ensure that no person is left alone with fine print merely because they could not afford a lawyer. Available at satyacontracts.com.

SUR BY DAUDALOGN

Sur begins with an act of mathematical dissent: Some 2.6 billion ordinary people do not experience investment risk as “size of day-to-day price fluctuations” (volatility). They experience it as *loss*.

| Volatility is a statistic; loss is a human event.

Worse, due to skewness and kurtosis in financial time-series:

low volatility $\neq$ low probability of large losses,

nor does the size of volatility inform how frequent those large losses may be.

For a truck driver, losses are measured by number of thousands of miles that must be driven again. For a nurse, it is the number of double shifts in the ER that must be worked. For a parent, it is bus rides back to the office and evenings taken from children. For a retiree, widow, worker, small saver or young family, it may be years of recovery, broken plans, delayed retirement, lost confidence, or a margin of safety that can never be rebuilt.

| A household does not live inside a standard deviation.



A household lives inside rent, mortgage payments, food bills, school fees, medical costs, retirement dates, and a finite number of working years. That is why *Sur* begins not with volatility, but with the annual loss budget: the maximum loss a person states they can bear in a bad year, and still remain steady, solvent, and invested.

Yet the retail wealth–management industry has continued to describe risk in a language ordinary people do not live in. It still relies on variance, volatility, peer–relative categories, daily fluctuation bands, and generic labels such as “low”, “medium”, “balanced” and “conservative”. Those labels may help professionals compare products against other products, but they do not answer the human question: **What could I lose in a bad year, how often could that happen, and would that loss breach the boundary my life can actually bear?**

A product can look moderate on a volatility scale and still carry annualised tail–loss exposure far beyond the client’s true tolerance. In Arman’s view, this is not a small technical imperfection. It is a category error at the centre of retail finance.

The warning that made the matter impossible to ignore came in Professor Shlomo Benartzi’s 30 July 2025 Wall Street Journal article, *“Why So Many People Get Financial Advice That Is Wrong for Them”*. Benartzi, the UCLA professor and world authority on behavioural economics who architected the Save More Tomorrow programme, with 15.4 million participants, gave public form to the behavioural truth Arman had long understood from markets: people are not abstract utility functions; they are loss–averse human beings whose decisions break at different loss thresholds. The article was the spark. It made Arman ask the only question the industry had not answered: given that industry surveys consistently point out that more than 95% of all retail clients say they can bear only a 5%, 10%, 15% or 20% loss in a bad year, what annualised tail losses are actually embedded in the portfolios and products they are being sold?

He then tested the retail system against the client’s own coordinate system. Dauðalogn’s product–level tests and real–account audits showed that the mismatch was not theoretical, marginal or rare. Because the industry still classifies risk through inherited volatility–based labels, many retail investors were in fact carrying annualised loss risk far in excess of their stated loss budgets, and far beyond what either they or their advisers understood. *Real–account audits showed nearly 80 percent of investors carrying approximately 3–4x more annualised loss risk than realised*; wider product screens showed that the retail shelf collapses when measured against actual loss budgets rather than volatility bands. Instruments labelled low, low–medium, medium, balanced or conservative could still carry bad–year tail losses of –40%, –50%, –60% or more.

This is why Arman came to see Sur not merely as a product, but as a societal warning system. The next severe market drawdown will not reveal this as a spreadsheet error. It will reveal it as broken retirement dates, forced de–risking at the bottom, homes sold or plans deferred, and millions of households discovering too late that “moderate risk” never meant what they thought it meant. Nearly three billion ordinary people have been left with inherited metrics from an earlier age, while the better–capitalised parts of finance long ago learned to think in tails, capital at risk, maximum loss, recovery time and survival in bad states. The families least able to be wrong once were given the weakest map. The article was the spark; the tests were the indictment; Sur became the answer.

That made the omission especially astonishing to him: serious parts of finance had long since learned to think beyond ordinary fluctuation. In the hedge–fund world from which he came, variance was never enough; the real questions were drawdown, tail loss, time to recovery, ruin, capital at risk, and survival in adverse states. Basel III–style banking rules and insurance solvency regimes require institutions to think in terms of extreme loss, capital adequacy and maximum damage. Yet the ordinary household, the party least able to be wrong once, has been left with retail labels inherited from an earlier age, as though day–to–day price movement could stand in for the damage of a bad year.

Sur is therefore Arman’s second “*Cervantine lance* against the windmills”. In Don Quixote, the rider mistakes windmills for giants; here the reversal is the point. The industry sees only harmless windmills – familiar risk labels, volatility bands and peer–relative categories – while Arman sees the real giant behind them: billions of households carrying loss exposures they neither understood nor could bear.

The first field was institutional foreign–exchange dealing, the world’s largest market. In 2000, he saw that the market’s accepted topology was wrong: counterparties did not need direct bilateral credit lines to trade; they could be connected through decentralised implicit credit. That insight became the client–to–client FX model and helped change the structure of a global market. Sur is the second attempt to change an entire industry by naming the hidden variable the industry mistook. This time the field is retail wealth, and the hidden variable is risk itself. The industry optimised around volatility. Arman saw that the client lives by loss. In both cases, the act was mathematical sight:

identify the false coordinate system, replace it with the natural one, and speak the correction before the industry is ready to hear it.

He therefore returned to his original terrain: cross-disciplinary finance, probability, extrema, optimisation and market structure. Sur does the simple thing that had been missing because the old question was wrong. It starts with the investor's maximum annual loss budget. It treats that budget as a hard human constraint. It measures annualised tail risk rather than ordinary fluctuation. It then asks how much return can be pursued without violating the loss boundary the client actually carries in life. The industry can object; mathematics is not obliged to flatter an industry.

Sur is a rules-based risk-intelligence and portfolio-assembly layer for advisers and institutions, designed to sit behind licensed professionals while supplying the missing mathematics: annualised loss-budget alignment, tail-sensitive measurement, deterministic optimisation, and a transparent Compass Score. Its purpose is to help advisers stop speaking to ordinary people in the language of volatility when those people have always meant loss.



SELECT PUBLICATIONS

Books

The Grand Process: On the Impossibility of Scientifically Warranting Human Interference with Earth's 4.5-Billion-Year Dance of Life: Kolmogorov Non-Modelability, Wamákħaŋškaŋ, and the Future of the Biosphere (1,353 pages)

Valaquentia, Arman, The Grand Process: On the Impossibility of Scientifically Warranting Human Interference with Earth's 4.5-Billion-Year Dance of Life, Kolmogorov Non-Modelability, Wamákħaŋškaŋ, and the Future of the Biosphere (June 27, 2026). Available at SSRN: <https://ssrn.com/abstract=7010838>

In *The Grand Process*, Arman Valaquentia brings together the whole architecture of his life's work into one defining book: mathematics, capital-markets experience, the 8,000-kilometre forest journey, animal ethics, the Māyā doctrine, Wamákħaŋškaŋ axiomatics, Kolmogorov non-modelability, the critique of law and finance, the critique of artificial oracles, and the covenantal duty to speak for those who cannot speak for themselves. It is the *summa of his work*: the book in which the concerns that have governed his life: children, animals, forests, waters, future beings, structurally excluded humans, honest science, restrained technology, redeemed finance, and the end of false human sovereignty over life, are gathered into a single theorem-bearing worldview.

The book is about Life. More precisely, it is about what Valaquentia calls **the Grand Process**: the ancient, four-and-a-half-billion-year evolutionary dance of life on Earth, through water, light, soil, fungi, plants, animals, forests, rivers, oceans, insects, birth, death, relation, memory, adaptation, consciousness, future descendants, and future possibility. The Grand Process is not “nature” as scenery, “environment” as regulatory category, “resource” as economic input, “natural capital” as balance-sheet object, or “ecosystem service” as human benefit. It is the living continuity through which beings come to exist at all, and through which future beings may yet arrive. The book defines it as the living, co-dependent, co-branching evolutionary process of Earth, including beings, relations, conditions of branching, future descendants, future sentience, future consciousness, future ecosystems, future humans, future beings never born, the Tree of Trees, and the recursive evolution of the evolutionary life-process itself.

The book begins with the simplest correction and follows it to planetary consequence: the word “Tree” is not a tree. The word has no roots, bark, sap, birds, fungi, shade, acorns, soil memory, or future forest. From that first correction, *The Grand Process* traces the entire pipeline by which human beings arm words against life: a word becomes a category; a category becomes a variable; a variable becomes a model; a model becomes an institutional claim; the institutional claim becomes a permit, licence, approval, quota, offset, court order, financial instrument, AI recommendation, or public policy; and then machinery enters the living world. The chainsaw enters the forest. The dam enters the river. The poison enters the field. The enclosure enters the animal's body. The rifle enters the wolf's life. The model remains inside the human order, but the cost is borne by beings who never entered the language and never consented to the category.

This is the book's Māyā doctrine. Māyā, in Valaquentia's use, does not mean that the tree, wolf, river, animal, child, forest, body, suffering, or world is unreal. It means that human beings mistake their words, categories, models, laws, markets, offices, borders, corporations, financial instruments, and stories for the living reality they merely point toward. “Timber” is not the tree. “Stock” is not the fish. “Livestock” is not the animal. “Pest” is not the insect. “Offset” is not restoration. “No significant impact” is not knowledge of the future. “Legal authorisation” is not permission from life. The book is therefore a word-work against word-sovereignty: it uses language to restrain language where language has become machinery against living beings.

The book's first major invention is the **Tree of Trees**. A tree is not merely a present object. It is a temporal opening: ancestry entering futurity. A tree may become acorns, seedlings, shade, soil, fungus, bird habitat, insect relation, squirrel life, water relation, future forest, and future beings no human model can name in advance. The same is

true of a wolf, a river, an insect, a rabbit, a fish, a forest, a wetland, or a child. Each is a trunk of future branches, and no branch unfolds alone. The Tree of Trees names the co-branching field of living process-threads whose futures are mutually conditioned. The point is not that every branch always measurably changes every other branch in every case; the point is that human institutions have no warrant to presume dynamic independence, harmlessness, recoverability, sustainability, or offset equivalence where the co-branching field remains uncontained.

The book's second major invention is **recursive evolution**: the insight that life does not merely evolve things, but may evolve the very ways by which future things can evolve. Evolution produces beings, traits, lineages, relations, and populations; but it also changes conditions, mechanisms, pathways, relations, and possibility-spaces through which future evolution proceeds. Valaquesta calls this the dance that changes its own steps. A human interference may therefore alter more than one present being, population, forest, river, or habitat. It may alter future branching, future relation-space, evolutionary process-space, and the conditions by which future life might otherwise have unfolded. This is the deepest form of the future remainder: the missing future of the evolution of evolution itself. The book's main result states that where the recursive evolutionary remainder is not contained, no scientifically warranted interference warrant exists.

The formal centre of the book is the **Grand Process Non-Warrant Theorem**. Valaquesta's prior Kolmogorov work showed that fully reflexive human-made orders — markets, legal systems, policy regimes, corporations, administrative states, AI governance structures, environmental assessments, and institutional systems constituted by participants, beliefs, incentives, models, rules, recognitions, and actions — cannot generate scientifically warranted predictive authority over futures whose relevant remainders they do not contain. *The Grand Process* extends that structure to the coupled human-Grand Process target: the future created when human word-worlds, laws, markets, ministries, corporations, courts, regulators, AI systems, and scientific institutions act upon the living process of Earth. The theorem's plain meaning is severe: if the future is not in the human package, the human package cannot authorise control over the future.

The book is careful about its mathematical scope. It does not claim that forests, rivers, wolves, insects, or ecosystems are themselves fully reflexive human systems in the same way markets, legal orders, or policy regimes are. The fully reflexive system is the human warrant-making order: the order of words, laws, permits, models, reports, money, courts, incentives, corporations, ministries, and administrative decisions that claims authority to act. The Grand Process is the living process at stake. The theorem applies to the human claim of authority over that process. That distinction gives the work both precision and force: the target is not life as such, but the human construct that names, models, authorises, funds, normalises, and executes interference with life.

This is why the book is not anti-science. It is anti-oracle. It preserves science by restoring it to its honest status. Science may observe, describe, measure, diagnose, compare, warn, model scenarios, expose danger, support restraint, and assist repair. A model may reveal forest loss, warn against a dam, identify pesticide risk, diagnose animal suffering, expose false restoration, or support the representation of beings absent from human forums. But science may not be inflated into a future-authorising warrant where the future branching of life remains uncontained. The model may warn; it may not become the future. The report may describe; it may not become permission. The AI system may assist; it may not become an oracle.

The book then applies the result across the principal human constructs of the Anthropocene. Forests are not timber supply, canopy acreage, carbon inventory, or delayed plantations. Old growth is not a plantation waiting to be replanted. Replanting is not restoration of the old forest. A carbon credit is not a squirrel. Waters are not licences, allocations, assets, discharge zones, or stock models. Fish are living beings, not biomass. Animals are not production units, laboratory instruments, predator pressure, or conservation variables. Insects are not pests because an agricultural system names them enemies. Soil is not input. A wetland is not an offset unit. A legal approval is not permission from the Grand Process. An AI environmental model is not an artificial oracle.

The book's critique of agriculture is especially broad. It treats totalitarian agriculture not as every act of planting, tending, gathering, or feeding, but as the civilisational system that locks food behind human constructs, turns land into property, animals into livestock, plants into weeds, insects into pests, soil into input, water into allocation, and the wider biosphere into a support system for human expansion. Food is real. Hunger is real. Children must be fed. But food does not become a warrant for subordinating the whole living world to a human system that has forgotten relation. In this sense, the book joins ecological concern with human concern: it does not sacrifice the poor, the

hungry, workers, farmers, or structurally excluded humans; it insists that human hardship changes the duties of transition, but does not restore the missing warrant for destructive systems.

The practical architecture of the book is the **Grand Process Test**. This is the institutional instrument by which human claims must be examined before they are permitted to proceed. It asks whether the affected process has been properly identified; whether words and categories are honest; whether model projections have been truthfully classified; whether structurally absent beings and future beings have been represented; whether the action instrumentalises life; whether lineage and future branching are altered; whether Tree-of-Trees and recursive evolutionary remainders remain uncontained; whether the harm is irreversible or falsely called restorable; whether necessity is real or self-created by human constructs; whether the act preserves the human system that caused the crisis; whether models are being escalated into oracles; and whether harm is being normalised through administration.

The book also proposes required institutional instruments: model-reliance statements, word-status statements, ontology-of-target statements, Tree-of-Trees remainder statements, recursive evolutionary remainder statements, irreversible-stakes statements, Grand Process representation triggers, Grand Process interference disclosures, prohibitions on “no significant Grand Process impact” claims, offset non-equivalence rules, replanting non-restoration rules, old-growth non-substitutability rules, no-free-boundary disclosures, and no-free-recursion-cutoff disclosures. These are not bureaucratic decorations. They are the written form of institutional humility: a way of forcing human offices to confess that their words are words, their models are models, their laws are laws among humans, their projections are projections, their substitutions are substitutions, and their claims are not the future of life.

The required consequence is not paralysis. It is the end of false permission. Where a model, report, assessment, legal approval, AI output, corporate disclosure, or policy claim fails the Grand Process Non-Warrant Theorem, the future-authorising status of that claim must be withdrawn. The model may remain as description, diagnosis, scenario, warning, restraint, operational heuristic, historical record, or representation-supporting tool. It may not remain as warrant to kill, cut, poison, confine, divert, mine, offset, destroy, or declare future harm insignificant. The human order may still act, but its action must turn back upon the human construct: halt logging, protect old growth, withdraw poisons, deny destructive permits, terminate killing programmes, refuse offsets as restoration, represent future beings, restrain corporate and financial structures, and repair where repair is truly possible.

If adopted by the planet’s institutions, *The Grand Process* would require a civilisational reclassification of human authority. Governments could no longer pretend that environmental assessments, “no significant impact” findings, adaptive management, offsets, reclamation plans, digital twins, AI forecasts, or expert records contain the future they are authorising. Courts would have to distinguish legal sufficiency from Grand Process warrant. Regulators would have to disclose when their approvals depend on euphemism, target truncation, false restoration, or model-status inflation. Corporations and boards would have to recognise that ESG, natural capital, nature-positive claims, fiduciary duty, and risk disclosure do not possess the forest, river, animal, soil, insect world, or future being. AI companies would have to abandon the fantasy that more data and more compute can turn a machine into an ecological oracle. Capital would be forced to stop hiding behind words that make life appear available.

The consequence for the living world would be immediate and profound. Forests would no longer be treated as timber supply under a harvest schedule, but as living conditions of branching. Old-growth destruction could no longer be laundered through replanting or carbon arithmetic. Waters would no longer be reduced to licences, allocations, discharge zones, or flow thresholds. Animals would no longer be made instruments of conservation arithmetic, food efficiency, laboratory convenience, or modelled usefulness. Insects and soils would no longer be treated as enemies or inputs merely because industrial agriculture requires those names. Offsets would lose their false equivalence. “Restoration” would be reserved for what truly restores. “No significant impact” would no longer function as an anaesthetic phrase for uncontained futures.

The consequence for human beings would also be transformative. The book does not place humans outside life; it restores humans to right proportion within life. Humans are Wamákhaŋškaŋ too. Children, workers, rural communities, the poor, Indigenous peoples, structurally excluded humans, future generations, and those harmed by pollution, extraction, enclosure, wage dependency, disconnection, and civilisational excess all belong inside the same field of care. Adoption of the book would therefore not mean sacrificing humans to nature. It would mean ending the human systems that harm humans by harming the living field that sustains them. Cleaner water, intact

forests, less poison, fewer sacrificed communities, less animal brutality, less ecological grief, less false development, less dependence on extractive systems, and more honest public language would benefit humans precisely because humans are not separate from the Grand Process.

The consequence for science would be moral restoration. Science would cease being misused as a throne and would return to being one of humanity's noblest tools of observation, warning, correction, restraint, and repair. The scientist would no longer be asked to play oracle for ministries, corporations, courts, markets, or AI systems that want permission to proceed. The honest model would be honoured for what it can do and protected from the institutional abuse of being treated as what it is not. This is one of the book's most important contributions: it does not diminish science; it saves science from false sovereignty.

The consequence for law would be equally significant. Law would still organise human duties, but it would lose the illusion that human permission equals permission from life. A permit would be recognised as a human enforcement decision, not as a metaphysical licence over the river, tree, wolf, insect, forest, animal, or future being. Courts would be forced to ask whether the human record contains the living target, the future remainder, the representation gap, the irreversible stakes, and the actual status of the model. Administrative deference would no longer be mistaken for predictive truth.

The consequence for finance and corporate governance would be a new ontology of capital. Balance sheets would be exposed as word-worlds, not forests. Risk disclosure would be exposed as historical compression, not possession of future ecological consequence. Natural capital would be exposed as a category that may make nature legible to markets while also reducing the living world into financial commensurability. Fiduciary duty would have to be re-examined in light of the fact that the corporation does not stand above Wamákħaṅškaṅ, and that profit cannot be made rightful by a model that excludes the beings who bear the cost.

In final form, *The Grand Process* is the book in which Arman Valaquenta states the purpose of the rest of his life: to end the false warrant by which human words, models, laws, markets, technologies, and institutions claim authority over life; to restore science, law, finance, and AI to their proper status as tools rather than oracles; to represent those structurally absent from human forums; to protect the future branching of animals, forests, waters, soils, insects, children, vulnerable humans, and future beings; and to remove the boot from the living world so that Wamákħaṅškaṅ may continue its own unfolding. Its governing sentence is: where the model cannot contain the future of the Grand Process, it cannot authorise interference with the Grand Process.

Koyaanisqatsi: The Anthropocene Assault on Animal Kinship, Animal Suffering, Māyā, and the Kolmogorov Non-Warrant of Human Dominion (2,713 pages)

Valaquenta, Arman Q., Koyaanisqatsi: The Anthropocene Assault on Animal Kinship, Animal Suffering, Māyā, and the Kolmogorov Non-Warrant of Human Dominion - A Treatise on the Animal Condition in the Anthropocene (forthcoming).

In the sequence of Valaquenta's major works, *Koyaanisqatsi* is the decisive animal-specific culmination of the intellectual architecture established in *Of Kolmogorov Complexity of Fully Reflexive Systems* and *The Grand Process*. The Kolmogorov work establishes the epistemic limit: genuinely plural, fully reflexive human-made orders cannot convert finite model packages into scientifically warranted predictive authority over futures whose relevant information they do not contain. *The Grand Process* then carries that formal result into the living world, asking whether human institutions can scientifically warrant interference with the four-and-a-half-billion-year evolutionary life-process of Earth when they do not contain its future branching, its interdependent Tree of Trees, or the recursive evolution of the pathways through which future life may become possible. *Koyaanisqatsi* brings both foundations before the animal body. It asks the most immediate and morally consequential form of the question: what authority does any human law, market, food system, laboratory, scientific model, religious doctrine, property regime, conservation programme, or cultural tradition possess to imprison, breed, separate, experiment upon, commodify, humiliate, poison, or kill an animal who never entered that system, never consented to its categories, and never agreed to bear its purposes?

The first of the foundational works supplies the book's formal grammar. *Of Kolmogorov Complexity of Fully Reflexive Systems* argues that a predictive claim must be judged not by the visible equation alone, but by the complete model package on which the claim depends: its categories, target projection, data, assumptions, adequacy criterion, residual apparatus, validation rule, bridge from realised history to future adequacy, and the institutional uptake through which the model enters and alters the system. If future-relevant information remains outside that package, computation cannot create it for free. A residual apparatus narrow enough to exclude futures that defeat the claim must itself contain the missing information; one that does not contain it leaves the admissible future broad and cannot supply predictive warrant. Historical validation remains realised history rather than possession of the future, while operative models alter the fully reflexive systems in which they are used. The result does not prohibit modelling. Description, diagnosis, scenarios, warnings, operational heuristics, precaution and institutional conventions may remain useful. What fails is their elevation into scientifically warranted predictive authority.

The Grand Process gives this formal limitation its living object and moral consequence. It defines the Grand Process as the co-dependent, co-branching and recursively evolving continuity of life: present beings, relations, conditions of branching, future descendants, future sentience, future ecosystems, future beings never born, the Tree of Trees, and the evolution of the mechanisms by which future evolution itself proceeds. The human institution making an interference claim is the fully reflexive order; the forest, river, animal, insect or living field upon which it acts is not misclassified as a human-made reflexive system. Rather, the relevant object is the coupled human–Grand Process future created when laws, markets, corporations, ministries, assessments, models and technologies act upon life. Where that future remains uncontained, the human package may possess legal permission, institutional confidence and material power, but it does not possess a scientifically warranted interference warrant.

Koyaanisqatsi inherits this architecture but does substantially more than reproduce it. It develops new animal-specific objects: the animal-domination warrant, the animal-imprisonment warrant, the animal-Whole, the integrated animal future remainder, animal future-formation, animal death as process-truncation, animal imprisonment as future-branch narrowing, reproductive seizure as intervention in the future-forming process of another being, and mother-child separation as kinship-branch severance. It therefore represents a further stage in Valaquenta's thought. The Kolmogorov paper identifies the information-theoretic impossibility within human predictive orders; *The Grand Process* identifies the uncontained living future over which those orders presume authority; *Koyaanisqatsi* identifies the innocent animal as the being who bears the cage, needle, blade, hook, poison, breeding schedule, truck, market and legal conclusion produced by that false authority.

The work expressly refuses to begin as a conventional animal-rights argument. Rights may be valuable where they restrain human conduct, but human law is not the source of the animal's standing. A statute does not create the cow's motherhood, the fish's life in water, the bird's relation to sky, the pig's intelligence and sociality, the mouse's fear, or the insect's participation in the living field. Nor is the work merely an animal-welfare programme. Welfare measures may expose suffering and must be used to relieve animals who are suffering now, but a welfare score cannot become consent to the system whose harms it measures. The difference is fundamental: the ordinary rights question asks what protections humans should grant animals; *Koyaanisqatsi* asks what human claims must be revoked because humans never possessed the authority they claimed. The ordinary welfare question asks how suffering may be reduced within systems of use; *Koyaanisqatsi* asks why the system of use is presumed to have a warrant at all.

The Society therefore appears throughout the book as **counsel, not petitioner**. It does not ask the human order to admit animals into a house whose foundations of human primacy remain intact. It enters because that house is already issuing orders against animals. Counsel does not claim to own the animals, speak their complete interior truth, or redesign their lives according to another human theory. It challenges the validity of proceedings in which the animal is bodily present in the consequence but absent as a principal from the decision. The dairy board contains producers, regulators, veterinarians, economists and markets, but the cow appears only as milk output and the calf as surplus. The laboratory committee contains researchers, protocols, statistics and institutional interests, but the animal appears as a model organism or endpoint. The fishery contains stock assessments, quotas, vessels and economic interests, but the fish appears as biomass. The pesticide regime contains thresholds, registrations, crop projections and acceptable-risk calculations, but the insect appears as pest pressure. *Koyaanisqatsi* restores the absent being and then asks whether the proceeding can remain valid after the target it excluded has returned.

The title names the civilisational condition under judgment. *Koyaanisqatsi* means life out of balance: in the Society's use, the structural condition in which one late species has converted animals, plants, insects, land, water,

labour and future beings into support systems for its appetite, security, accumulation and abstractions. The imbalance is not reduced to individual cruelty or private moral failure. It is institutional. It takes the form of law, property, food-power, markets, laboratories, ministries, corporations, finance, industrial infrastructure, dominion stories, cultural habits and administrative language. Animal suffering is therefore not a peripheral ethical problem within the Anthropocene. It is one of the clearest revelations of what the Anthropocene human order is: a civilisation so enclosed within its own word-world that it has learned to organise the suffering and death of other beings while calling the arrangement lawful, necessary, scientific, humane, efficient and normal.

The innocence of animals is treated with precision rather than sentimentality. The animal is innocent of the human system in the literal sense that the animal did not create its property rules, markets, menus, research priorities, breeding indices, welfare standards, ownership titles, food-security projections or claims of necessity. The animal made no bargain, gave no waiver and entered no contract. This innocence is especially stark in the newly arrived animal: the calf called veal, the lamb called cuisine, the piglet called suckling pig, or the male chick killed because the wrong sex has entered the egg industry's product line. The young animal knows nothing of the menu, hatchery economics, culinary tradition or sex-sorting arithmetic by which humans have determined that a barely begun life is available. The book does not deny predation, fear, hunger or death within the Grand Process. It distinguishes an animal who kills under life-necessity from a human civilisation that constructs industries of confinement, reproductive capture, experimentation and killing, and then erects metaphysical, economic and scientific explanations over them.

A central movement of the book is therefore linguistic. Animals are hidden before they are harmed. The cow becomes "livestock," the fish "stock," the mouse "model organism," the insect "pest," the mother "dairy unit," the calf "surplus," the bird "production," and killing "processing." These words do not remain inside human speech. They become categories, variables, models, protocols, permits, procurement rules, investment decisions, quotas, laboratory approvals, welfare certifications, court records and ordinary consumer expectations. The animal never enters the word, but the word enters the animal's body as cage, needle, blade, hook, net, poison, truck, deprivation and death. *Koyaanisqatsi* calls this operative Māyā: not the unreality of the animal or the world, but the human word-world's false belief that its representations possess the beings they only partially describe.

The book consequently adopts a discipline of "true words." In the Society's own lexicon, killing under a false human warrant is called animal murder; the deliberate imposition of serious bodily, psychological, relational, reproductive, sensory or developmental suffering is called animal torture; confinement is called imprisonment; control of breeding and future bodies is called reproductive seizure; and maternal separation is called violation of the mother-child relation. These expressions are not presented as statutory definitions within existing human criminal law. They are Society terms intended to remove the administrative anaesthetic by which the material event has been hidden. "Processing" describes the institution's posture; it does not describe what happens to the animal. "Experimentation" describes a human research category; it does not contain the captive being's fear. "Welfare compliance" records satisfaction with selected indicators; it does not create authority for the prison.

Against these reductions, *Koyaanisqatsi* develops the animal-Whole. The term is not a claim that the Society's definition contains the animal in full. It is a corrected target, designed to expose how radically human systems truncate the being over whom they claim authority. The animal-Whole includes the animal as individual life, sentient experience, bodily integrity, movement, sensory world, fear, pain, desire to live, kinship, mother-child relation, social world, reproductive process, lineage, possible descendants, future branch-space, ecological participation, disease relation, genetic future, Tree-of-Trees participant, recursive evolutionary participant and bearer of consequences within the human-return field. A welfare score, mortality rate, feed-conversion ratio, toxicity endpoint, milk yield, egg output, stock biomass or research-utility measure may describe a selected projection. It does not contain the animal-Whole.

The concepts introduced in *The Grand Process* acquire direct animal significance here. The Tree of Trees means that an animal is never merely an isolated body. The cow's branch touches calf, herd, grass, soil, microbes, water, disease, human food culture and future lineage. The fish's branch touches water, current, reproduction, predators, vessels, quota, market and oceanic future. The insect's branch touches flower, bird, soil, decay, crop system, pesticide, resistance evolution and future food webs. Recursive evolution adds a second dimension: human interference does not merely injure animals presently alive, but may alter the pathways through which future animal bodies and futures are formed. Dairy selection, broiler genetics, hatchery systems, laboratory strains, fisheries-induced selection, pesticide resistance, aquaculture disease, deformity breeding and racing bloodlines enter the

future-forming processes of animals not yet born. Killing is therefore more than removal of a body; it truncates a process-thread. Imprisonment is more than reduced welfare; it narrows possible life. Reproductive seizure is more than production management; it enters and scripts another being's future.

The book's formal centre is the Animal-Imprisonment Non-Warrant Theorem and the wider Integrated Animal-Whole Non-Warrant framework. The mathematical scope is carefully guarded. The cow is not said to be the fully reflexive human system; the dairy order is. The mouse is not the laboratory institution; the research apparatus is. The fish is not the stock-assessment regime; fishery governance is. The insect is not the pesticide order; the agricultural-chemical system is. The animal is the living, future-bearing being upon whom a fully reflexive human order acts. That order includes participants, incentives, categories, rules, models, markets, legal recognitions and institutional responses, and its models become events within the system when they are converted into approvals, breeding programmes, quotas, standards, investments and killing practices.

Within that scope, the book argues that the relevant human model package must include not only data and equations, but the lexical frame by which the animal was first reduced, the target projection chosen under that frame, the assumptions, adequacy standard, residual apparatus, validation rule, bridge from past evidence to future authority, and institutional uptake through which the package becomes material action. Where the integrated animal future remains non-trivially outside that package, the package cannot supply scientifically warranted authority to imprison the animal. The theorem's plain-language formulation is exact: **if the animal's future is not in the human package, the package cannot authorise control over the animal's future**. From this follow specific non-warrant corollaries concerning animal killing, torture, reproductive seizure, mother-child violation, humiliation, commodification, welfare compliance, research necessity, food security, conservation killing and ownership.

This conclusion is not defeated by showing that some cages are cleaner, some killing methods less painful, some laboratory protocols more refined or some animal-use systems less environmentally damaging than others. Differences in realised suffering matter absolutely to the animal and create an immediate duty to reduce avoidable suffering. But improvement within the wrong does not create authority for the wrong. A welfare measure may be evidence against confinement; it does not become the prison's passport. A less painful killing is better than a more painful killing for the being who would otherwise suffer more, but the reduction of pain does not produce consent to death. *Koyaanisqatsi* therefore distinguishes immediate relief from final warrant. Animals presently trapped must not be forced to suffer while humans dismantle the systems that trapped them, but interim relief cannot be converted into permanent absolution.

The Final Declaration expresses this through one of the book's governing principles: **no adjective restores the warrant**. "Humane" does not restore killing; "ethical" does not restore reproductive seizure; "sustainable" does not restore extraction; "responsible" does not restore ownership; "scientific" does not create consent; "medical" does not transform human suffering into an animal debt; "educational" does not transform captivity into service; "traditional" does not transform inheritance into authority; "organic" and "regenerative" do not make the animal an agricultural instrument; "welfare-compliant" does not make imprisonment valid; and "conservation-based" does not turn killing into protection. Human sincerity may affect the judgment of the human person, but it does not alter the animal's non-consent or create the missing warrant. The book is severe toward the construct while remaining compassionate toward the human being.

The scope of the indictment is correspondingly comprehensive. Industrial animal agriculture is treated as the central prison-house of animal *Koyaanisqatsi*: a system in which bodies are confined, reproduction is captured, mothers and young are separated, animals are bred into dependency or distortion, transported in terror and killed under product language. Dairy is analysed as seizure of motherhood and the mother-child relation; egg production as capture of bird reproduction and the killing of unwanted newborn life; broiler production as the breeding of birds into bodily misery; laboratories as animal imprisonment and torture under scientific *Māyā*; industrial fishing as mass killing concealed by water and stock-language; aquaculture as imprisonment in water; pesticides as chemical war against small animal life; and commercial breeding as the scripting of future bodies for output, deformity, spectacle or sale.

The same reasoning reaches hunting for sport, animal-body fashion, wildlife trade, zoos and aquariums, racing, entertainment, animal labour, policing and military use, deformity breeding, companion-animal ownership, biotechnology, synthetic animal futures, infrastructure death, roads, glass, machinery, artificial light, noise,

pollution and climate-induced animal world-loss. The book does not collapse these systems into identical harms, but it subjects each to the same prior question: where did the claimed authority over the animal arise, and where is the animal-Whole in the human package? The breadth of the work matters because animal suffering is ordinarily divided among professional silos — agriculture, research, fisheries, conservation, transport, entertainment, public health, finance and law — that make the total structure difficult to see. *Koyaanisqatsi* restores them as chambers of one human warrant-system.

Its practical significance for saving animals lies precisely here. The book is not content to add another moral appeal to a civilisation already skilled at admiring compassion while preserving the systems that compassion condemns. It changes the burden of proof. The animal is no longer required to demonstrate sufficient intelligence, sufficient similarity to humans, sufficient ecological usefulness or sufficient measurable suffering before receiving protection. The human institution asserting power must show the warrant by which it proposes to place the burden upon the animal. Human preference, law, benefit, tradition, market demand, institutional prestige, historical dependence and scientific usefulness may explain why humans wish to proceed; they do not establish why the animal is bound by that wish.

The book also turns this conceptual reversal into institutional architecture. It develops the Animal Warrant Test, the Animal Mercy Test, the Rescue-and-Release Test, representation requirements for structurally absent animals, word-status and model-status statements, animal-Whole and future-remainder records, and formal warrant-withdrawal procedures. It directs attention toward licences, subsidies, procurement, finance, insurance, investment, corporate governance, research approval, welfare certification, regulatory records and court deference because these are the mechanisms by which abstract claims become cages, laboratories, poisons, killing lines and markets. Its intended effect is operative: to make animal suffering harder to authorise, finance, insure, certify, normalise and conceal, and to make the animal appear as a principal wherever human institutions decide the animal's body, family, reproduction, movement and death.

The work is nevertheless not anti-scientific. As in the two foundational works, its distinction is between tool and throne. Ethology, veterinary knowledge, sentience research, field observation, epidemiology, toxicology, ecological science and modelling may describe animal lives, reveal suffering, diagnose injury, expose danger, support rescue, guide healing, warn against destructive action and help humans withdraw. Law may restrain human hands. Veterinary medicine may heal. Sanctuary may protect animals who cannot safely be released. Science remains a lamp where it reveals the animal and helps remove human pressure. It becomes an artificial oracle only where a partial representation is elevated into authority over the animal future it does not contain. Description, diagnosis, warning, restraint, representation, rescue and repair survive; future-authorising animal domination does not.

The book's spiritual and literary registers deepen rather than replace this formal architecture. Paśupati appears not as divine ownership of animals, but as protection of animal spirit and refusal before the hand that would cage, cut, breed, brand, test, poison, separate or kill. Persephone returns the reader to beings before names: the cow before dairy, the fish before stock, the insect before pest and the mouse before model organism. Rudra supplies the fierce register in which the excuses of food, science, law, religion, welfare, conservation, poverty and tradition are refused. These voices do not perform the mathematical proof. The proof remains the work of the axioms, model-package analysis, conditional complexity, admissible future classes, bridge-law burden, model uptake and the integrated animal remainder. Their purpose is perceptual: to ensure that the being whom the proof concerns has not disappeared behind the formalism. Mathematics destroys the false warrant; Paśupati stands before the hand; Persephone restores the world before the word.

Nor is the conclusion anti-human. Humans remain part of Wamákhaṅṣkaṅ and bear injuries produced by the same order: workers traumatised in slaughterhouses and laboratories, farmers trapped by debt, poor households constrained by price, communities dependent upon harmful industries, children trained not to see the living being behind the product, and people spiritually starved by a civilisation founded upon hidden suffering. But human hardship alters the obligations of transition; it does not restore animal consent. The cow is not responsible for human dependence upon dairy, the mouse for human disease, the fish for human appetite, the insect for monoculture, or the animal for the employment structure built around the animal's body. The burdens of ending animal suffering belong to the human order that created the dependency. Workers, farmers, poor families and communities must be protected, retrained, supported and compensated by humans rather than used as shields behind which animal exploitation continues.

The book also treats genuine boundary cases so that tragedy cannot be used as an industrial loophole. Immediate defence of life is distinguished from a standing system of animal domination. Mercy death may be permissible where an animal is enduring unbearable and irreversible suffering that cannot be relieved, but never as disposal, convenience, production management or cost-saving. Rescue may require temporary confinement, treatment or sanctuary, but only where the animal's own safety, healing, release or dignified life is the principal object. A sanctuary must not convert wounded dependence into spectacle, breeding, donor theatre, social-media content or permanent institutional expansion. These narrow, sorrowful cases change the form of human duty; they do not reopen the general animal-use warrant.

The wider importance of *Koyaanisqatsi* lies in moving animal ethics upstream. It moves from the conditions of use to the legitimacy of use; from welfare measurement to the authority presumed by the system being measured; from legal recognition to the standing that precedes law; from species and population aggregates to the individual, the mother, the young and the future-bearing life; from ecological utility to intrinsic animal reality; from moral appeal to formal burden; and from reform of the cage to withdrawal of the warrant by which the cage was built. The book does not argue that animals matter because kindness toward them improves humans, because biodiversity serves economies, or because healthy ecosystems sustain civilisation. Those consequences may be real, but animal value precedes every benefit returned to humanity. The animal's suffering is the first wrong. The human-return field merely reveals that the dominator's imagined separation from the dominated was false.

In this sense, *Koyaanisqatsi* is the work in which Valaquenta's mathematics, forest experience, animal ethics, Māyā doctrine, Wamákhaŋškaŋ axiomatics and covenant to speak for those who cannot speak for themselves meet their most immediate subject. The abstract "future-relevant remainder" becomes the calf's future with the mother, the bird's possible sky, the fish's life in water, the pig's social and exploratory world, the mouse's freedom from the laboratory, the insect's place in flower and soil, and the future descendants who will never arrive if the human system closes the branch. Its ambition is not merely to improve the human description of animal suffering, but to make every future defence of that suffering answer the question it has evaded from the beginning: **where is the warrant, and where is the animal's future in the human package?**

In one sentence: Koyaanisqatsi takes Valaquenta's Kolmogorov argument that human systems cannot scientifically warrant futures they do not contain, joins it to The Grand Process ontology of co-branching life and recursive evolution, and turns both into a comprehensive proceeding on behalf of innocent, non-consenting animals — declaring the human warrant to imprison, breed, torture, separate, commodify, humiliate and kill them void, and making representation, protection, release, restraint, dismantling of harmful human constructs and removal of the boot the required consequence.

Of Kolmogorov Complexity of Fully Reflexive Systems: the Impossibility of Modelability of Human-Made Orders (600 pages)

Valaquenta, Arman, *Of Kolmogorov Complexity of Fully Reflexive Systems: The Non-Existence of Predictive Modelability in Human-Made Orders and the Anthropocene Consequences of Thinking Otherwise* (May 14, 2026). Available at SSRN: <https://ssrn.com/abstract=6766038>

In *Kolmogorov Complexity of Fully Reflexive Systems*, Arman identifies one of the most dangerous hidden assumptions in modern finance, economics, public policy, and governance: the belief that human-made systems can be modelled as though they were natural systems governed by stable laws. The paper argues that this assumption is false. Markets, economies, legal systems, policy regimes, political orders, corporate-governance systems, reputation systems, money, and other institutional structures are not planets, gases, crystals, or chemical reactions. They are fully reflexive human-made orders: systems constituted by participants, their beliefs, expectations, models, strategies, rules, incentives, and actions. The participants do not merely observe or affect the system. They are the system.

This distinction is decisive. In the natural sciences, the object being studied normally exists independently of the observer. The planets do not alter their orbit because an astronomer publishes a model. A chemical reaction does not read a paper and change its behaviour. But a financial market does. A corporation does. A voter base does. A regulator does. A central bank does. A policy target does. A model of a human-made system enters the system it claims to describe. Traders adapt to it, firms game it, policymakers rely on it, citizens respond to it, institutions reprice around it, and competitors copy or attack it. The model does not stand outside the world. It becomes one of the forces inside the world.

The paper formalises this insight using Kolmogorov complexity: the length of the shortest exact description of an object. In plain language, Kolmogorov complexity asks how much irreducible information is required to write something down without loss. Valaquentia uses it as a rigorous version of Occam's razor. If a system is made of many model-bearing participants, then the whole system cannot be simpler than its richest constituent part; and in any genuinely plural system, the whole contains irreducible information beyond the perspective of any one participant. No participant inside the system can compress the whole into a scientifically adequate internal model without omitting what the rest of the system contributes.

The result is stark: fully reflexive human-made orders are not modelable in the strong scientific sense often claimed for them. This does not mean that no forecast can ever be right, or that all modelling is useless. The paper is more precise than that. It allows for local regularities, temporary patterns, institutional frictions, useful heuristics, and historically successful trading or policy rules. What it denies is the stronger and more dangerous claim: that historical fit, statistical validation, backtesting, econometric significance, machine-learning performance, or signal-plus-noise decomposition can provide a scientifically grounded model of the future behaviour of the whole human system.

The paper's lay insight is simple but devastating: a model of a human-made system is not like a map of a mountain. It is more like a rumour released into a crowd. Once the crowd hears it, the crowd changes. Once market participants know a signal, they trade against it, copy it, crowd it, arbitrage it, or destroy it. Once citizens know a policy, they comply, evade, litigate, exploit, or politically resist it. Once firms know a regulation, they restructure around it. Once AI agents act on shared models, they can intensify the same reflexive feedback at machine speed. In such systems, the future is not a passive continuation of the past. It is partly produced by the models, beliefs, and interventions applied to it.

This is why the paper attacks the ordinary comfort of "approximation." In natural science, one may often model a signal and treat the unexplained remainder as noise. But in a fully reflexive system, the residual is not innocent external noise. It is the unresolved algorithmic remainder of the system: the part made of other participants, other beliefs, other strategies, hidden adaptations, future reactions, and unmodelled institutional change. If the modeller claims that this residual can itself be modelled well enough to justify the original approximation, then the residual model has become part of a larger whole-system model and inherits the original impossibility. If the residual cannot be modelled, then the modeller has no principled yardstick for saying the model is scientifically adequate.

The same critique applies to backtests, holdout samples, out-of-sample validation, relative frequencies, and historical performance. A backtest describes what a model would have done on one realised past. A holdout period is still part of the realised past. A relative-frequency table says what happened, not what must happen. To convert past performance into a justified claim about future adequacy requires a further assumption – a bridge law – such as stationarity, regime persistence, structural invariance, parameter stability, or slow adaptation. But in a fully reflexive human system, that bridge law is exactly what cannot be taken for granted. If it is strong enough to justify the future claim, it carries the missing burden. If it is weak, it certifies nothing.

This makes the paper seminal because it challenges not one model, but an entire civilisation's modelling posture. Modern institutions increasingly govern human beings through forecasts: risk models, credit models, economic models, fiscal projections, central-bank models, market-risk systems, policy simulations, AI decision systems, behavioural models, recommender systems, insurance models, and automated governance tools. These systems often present themselves with the authority of science. Valaquentia's paper says that, in fully reflexive human domains, that authority is frequently overstated. The model may be useful. It may be profitable. It may be disciplined. It may even work for a time. But it is not a law of the system in the way physics discovers laws of an observer-independent world.

The practical danger is enormous. If decision-makers believe these models more than they should, they may build fragile financial systems, misprice tail risk, approve dangerous policies, overtrust AI agents, suppress dissenting judgment, overfit the past, ignore adaptation, and expose millions or billions of people to consequences the model was never entitled to dismiss as “noise.” In finance, this can mean households, pensioners, institutions, and governments relying on risk systems that fail precisely when reflexive crowding, panic, leverage, and feedback loops change the regime. In public policy, it can mean imposing interventions on human populations as though citizens were passive variables rather than agents who respond. In AI, it can mean believing that larger models and faster agents overcome the problem, when in fact they may deepen it by adding more model-bearing participants into the reflexive order. The FAQ states this point directly: AI agents may improve local pattern extraction and historical compression, but they do not change the ontology of the system being studied. A fully reflexive system remains fully reflexive whether its participants are humans, institutions, algorithms, or AI agents.

The paper’s moral importance lies in its protection against false certainty. It does not call for intellectual nihilism. It does not say that economists, analysts, traders, policymakers, or AI systems should stop measuring, modelling, or learning from history. It says they must stop pretending that local historical success is the same as scientific command over the future of a human-made order. The proper status of such models is humbler: historical compression, local heuristic, engineering approximation, institutional language, scenario aid, or decision support under uncertainty. That humility matters because when powerful institutions confuse these tools with law-like knowledge, ordinary people bear the consequences.

Kolmogorov Complexity of Fully Reflexive Systems is therefore a foundational warning against the misuse of mathematical authority in human affairs. It shows that the central error is not merely bad modelling, insufficient data, poor calibration, or weak computation. The error is ontological. Human-made systems are made of participants who model, react, and change. Their future cannot be scientifically guaranteed by fitting their past. Once that is understood, finance, economics, public policy, and AI governance must be rebuilt around prudence, reversibility, robustness, moral constraint, transparency, and protection against irreversible harm – not around the fantasy that enough data and enough computation can turn living human orders into predictable machines.

In one sentence: the paper closes the book on the dream that markets, economies, policy regimes, and other human-made orders can be modelled like planets – and warns that decisions made under that false belief can endanger everyone subject to them.

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Papers

Of Equitable Liability (340 pages)

Valaquenta, Arman, Of Equitable Liability (April 16, 2026). Available at SSRN: <https://ssrn.com/abstract=6695158> or <http://dx.doi.org/10.2139/ssrn.6695158>

In *Of Equitable Liability*, Arman Valaquenta identifies and proposes to correct one of the deepest anomalies in modern capitalism: the cost-free grant of limited liability to shareholders. Limited liability made modern capital markets possible by allowing diversified ownership, liquid shares, and large-scale enterprise. But in its present form, it also gives capital a free legal stop-loss. Shareholders receive the upside of enterprise, while losses that exceed the firm’s assets, insurance, indemnities, statutory funds, and bankruptcy estate are pushed outward onto workers, tort victims, consumers, taxpayers, ecosystems, animals, and future generations. The harm is not eliminated; it is displaced.

The paper’s central insight is that costless limited liability is economically equivalent to a zero-premium legal put – a free excess-loss protection written by society for the benefit of capital. In any other domain of finance, such protection would be priced. Credit risk is priced. Volatility is priced. Catastrophe risk is priced. Interest-rate risk is priced. Default risk is priced. Yet the shareholder’s legal insulation from residual social and ecological harm is

treated as a free background privilege. *Of Equitable Liability* argues that this is not a marginal defect, but a structural distortion at the heart of capital allocation.

The solution proposed is Equitable Liability: limited liability remains available, but it is no longer gifted. A shareholder who wants the shield must purchase a renewable, holder-linked Limited Liability Certificate from a regulated underwriter. That certificate prices the residual harm layer – the losses beyond what the firm itself can pay – and backs that protection with claims-paying capital, reserves, reinsurance, run-off obligations, and a legally traceable claims waterfall. The shield becomes what it should always have been: a priced, renewable, capital-backed protection rather than a free attribute of share ownership.

The effect is radical in consequence but simple in principle. Harmful enterprises become more expensive to own because the cost of maintaining limited liability rises with the residual risk they impose. Safer, cleaner, better-governed, more transparent, and less catastrophic enterprises become cheaper to own because their shield costs less. The premium turns residual harm into a cost of ownership. Capital is not asked to become benevolent; it is forced to face the price of the protection it receives.

In this way, Equitable Liability realigns capitalism with the interests of the living world. It does not abolish markets, enterprise, tradable equity, or risk-taking. It corrects the hidden subsidy that allows capital to finance activities whose worst losses are socialised. It makes the legal shield conditional, renewable, and visible. It gives underwriters, investors, regulators, courts, and the public a live market signal of the true residual danger of enterprise. It allows capitalism to keep its engine, but removes the free licence to externalise catastrophic downside.

The paper also extends the mechanism beyond ordinary human tort claims. A mature Equitable Liability regime includes harm modules for public health, workers, consumers, climate, water, soil, toxic exposure, biodiversity, animal welfare, cyber and AI infrastructure, and financial-systemic risk. It creates guardians for non-human and future claimants, a public premium registry, underwriter governance covenants, verified harm-reduction credits, treaty architecture, fiduciary-duty integration, legacy harm transition funds, and a no-insurance zone for harms that should not be monetised at all – including atrocity, irreversible ecological destruction, extermination of sentient life, and other non-compensable harms.

Its contribution is therefore both mathematical and moral. Mathematically, it shows how the residual loss layer can be priced, capitalised into ownership, reflected in equity value, renewed through time, reset on transfer, and transmitted into portfolio choice and expected returns. Morally, it changes the question at the centre of corporate law and finance: not whether limited liability once served capitalism, but why the privilege of capped downside should remain free when the costs of that privilege are borne by the voiceless.

Of Equitable Liability is the blueprint for removing a foundational distortion in capitalism: the free legal subsidy that lets capital enjoy upside while the planet, animals, workers, communities, children, taxpayers, and future generations absorb the overflow. It keeps limited liability, but makes capital pay for it. It preserves markets, but forces them to see what they have been allowed to ignore. It is a proposed realignment of enterprise with life.

On the Impossibility of Scientifically Warranted Wolf Death Warrants: Kolmogorov Non-Modelability, Wamákħaŋškaŋ, and British Columbia's Wolf-Killing Programme (450 pages)

Valaquentia, Arman, On the Impossibility of Scientifically Warranted Wolf Death Warrants: Kolmogorov Non-Modelability, Wamákħaŋškaŋ, and British Columbia's Wolf-Killing Programme (June 08, 2026). Available at SSRN: <https://ssrn.com/abstract=6902178>

In *On the Impossibility of Scientifically Warranted Wolf Death Warrants*, Arman Valaquentia makes the first applied Wamákħaŋškaŋ corollary: a direct application of his Kolmogorov non-modelability theorem and the Society's axioms to a concrete public policy that converts modelled projections into death. The paper examines British Columbia's wolf-killing programme not as a simple dispute between wolves and caribou, nor as a narrow question of predation, but as a coupled policy-ecological-evolutionary system: a fully reflexive human order of ministries, laws, models, reports, budgets, permits, forestry decisions, helicopters, firearms, contractors, and public

communications acting upon wolves, caribou, habitat, pack structures, predator–prey relations, future descendants, and ecological possibility.

The paper introduces the technically named object of a “scientifically warranted death warrant.” This is not a legal warrant. It is the stronger epistemic claim that science, modelling, historical evidence, expert judgement, adaptive management, and policy procedure can authorise intentional or foreseeable death. The paper defines that object in order to deny it. Using conditional Kolmogorov complexity, Arman argues that any bridge from past observations and present model packages to future authority for killing must either contain the missing future–relevant complexity of the full policy–ecological–evolutionary system, leave the future class too broad to warrant death, hard–code the desired conclusion, or smuggle an oracle. In plain terms, the model may describe, diagnose, warn, organise evidence, or support restraint; it cannot become a scientific licence to kill.

The paper then reclassifies the ordinary language of the programme. Historical monitoring remains historical. Fitted ecological relations remain fitted relations. Population–viability claims do not answer individual death, pack disruption, suffering, or evolutionary possibility loss. Adaptive management does not restore beings killed before the next update. “Best available science” remains a tool, not an oracle. The paper’s central epistemic warning is that a caribou target projection is not the future of the living system, and that a death called “reduction” remains death.

Applying the Wamákħaṅškaṅ axioms and the Death Test, the paper argues that the programme fails because it instrumentalises wolves, excludes them from representation, imposes irreversible death, substitutes modelled usefulness for necessity, transfers a human–altered landscape crisis onto non–culpable beings, and normalises killing through public administration. The conclusion is not a request for improved paperwork, a temporary moratorium, better disclosure, revised thresholds, or a more refined lethal–control framework. The required consequence is termination of the wolf–killing programme and withdrawal from the human interference that generated the crisis.

Beyond British Columbia, the paper establishes a reusable model–status test for conservation policy, environmental assessment, habitat offsets, animal management, AI–mediated ecological governance, and any case in which human models are converted into authority over living systems. It is the first applied demonstration of the Society’s larger publication architecture: mathematical non–warrant, Wamákħaṅškaṅ axiomatic consequence, model–status reclassification, and required restraint. Its governing sentence is: where the model cannot contain the future, it cannot authorise death.

After Tagore: Man-in-the-Universe and the Starvation of the Human Spirit (255 pages)

Valaquentia, Arman, *After Tagore: Man-in-the-Universe and the Starvation of the Human Spirit* (July 10, 2026). Available at SSRN: <https://ssrn.com/abstract=7096538> or <http://dx.doi.org/10.2139/ssrn.7096538>

In *After Tagore*, Arman Valaquentia undertakes a book-length Wamákħaṅškaṅ Society reading of Rabindranath Tagore’s *Sādhana: The Realisation of Life*. It is neither a book review, a devotional paraphrase, a conventional work of literary commentary, nor an attempt to recruit Tagore retrospectively into the Society’s doctrines. Tagore is received as witness, not oracle. The work begins from Tagore’s diagnosis that when human beings violently detach themselves from the inexhaustible life of nature, they become “merely man” rather than “man-in-the-universe”: spiritually starved, unstable, driven towards artificial remedies, restless appetite, extravagant wealth, incessant stimulation, and the consumption of their own substance. Valaquentia then asks the question that lies beyond Tagore’s immediate literary task: what happens when this inward wound acquires property, markets, law, food systems, laboratories, models, states, corporations, religions of dominion, and technological power?

The governing thesis is that Tagore names the interior wound of the severed human being, while the Wamákħaṅškaṅ Society names the outward machinery through which that wound is imposed upon the rest of life. The human detached from the Whole does not merely suffer privately. Armed with food-power, property, markets, legal authority, scientific prestige, industrial systems, and technological reach, the spiritually starved civilisation makes animals, insects, forests, rivers, soils, vulnerable human beings, and future beings pay for the starvation of

the human spirit. The wound becomes barn, cage, feedlot, slaughterhouse, dairy, hatchery, laboratory, fishing fleet, aquaculture enclosure, pesticide field, zoo, aquarium, breeding market, racing system, police kennel, military programme, fashion industry, and genetic laboratory. Human disconnection becomes organised harm.

The formal method of the work is what Valaquesta calls axiomatic subsumption. The paper receives the preface and all eight essays of *Sādhanā* — Tagore’s treatments of the individual and the universe, soul consciousness, evil, self, love, action, beauty, and the infinite — and places their principal insights within the interpretive and normative field of the Wamákṣaṅkaṅ Society’s eighteen Founding Axioms. Subsumption does not mean textual identity, historical anticipation, or the false attribution of later Society doctrines to Tagore. It means that the axioms formalise, universalise, proceduralise, civilisationalise, and give institutional consequence to Tagore’s spiritual intuitions, while correcting any anthropocentric, instrumental, teleological, or suffering-consoling residue that would conflict with the Society’s duties towards Wamákṣaṅkaṅ. The work is therefore careful to preserve a strict boundary of attribution: Tagore opens the spiritual door, but the Society proceeds through it under its own name.

From this method emerges a comprehensive reclassification of Tagore’s principal terms. “Man-in-the-universe” becomes human-in-the-Grand-Process: the human restored from sovereign delusion to conscious participation within the living, co-branching, future-bearing continuity of Earth. “Merely man” becomes the severed Anthropocene human, enclosed within property, market, doctrine, appetite, screen, institution, city, and self-reference. Tagore’s wall becomes the architecture of enclosure: fence, border, property line, disciplinary division, laboratory door, slaughterhouse wall, and the mental separation of human from nature. His hive becomes the city-market-food-power order within which humanity attempts to manufacture life, meaning, nourishment, and sanity from inside its own walls. Avidyā becomes inward not-seeing institutionalised as operative Māyā. Dharma becomes the true unfolding, inward nature, and open trajectory of every being. Love becomes Paśupati: love made answerable before the animal and converted from sentiment into refusal before harm. Action becomes earnest action directed towards human constructs and the removal of the boot. Beauty becomes the practice of perception by which beings return from usefulness to presence. Spiritual starvation becomes the human-return field of dominion: the suffering that returns to humans through the same structures by which they injure the living world.

At the centre of the work is a discipline of language. Māyā does not mean that the tree, animal, river, body, suffering, hunger, or world is unreal. It means that the human word-world mistakes its own names, categories, models, laws, markets, doctrines, and institutions for the living reality they only partially represent. The word is not the being. The category is not the relation. The variable is not the process. The model is not the future. The institution is not authority over life. Yet human words do not remain harmless. A word becomes a category; a category becomes a variable; a variable becomes a model; a model becomes an institutional claim; and the institutional claim becomes a permit, licence, quota, property title, welfare approval, laboratory protocol, stock assessment, pesticide registration, investment decision, court order, or public policy. Machinery then enters the living world, while the cost is borne by beings who never entered the language and never consented to the category.

After Tagore therefore follows the mortal use-name into the body of the being. The cow becomes “dairy,” and the mother disappears. The calf becomes “surplus,” and the child disappears. The pig becomes “pork,” and the animal disappears. The bird becomes “production,” and birdness disappears. The fish becomes “stock,” and the water-being disappears. The insect becomes “pest,” and the participant in flower, soil, bird, and future food web disappears. The mouse becomes “model organism,” and the small life in fear disappears. The forest becomes “timber,” and old shade, fungal relation, animal habitat, soil memory, and future forest disappear. The river becomes “allocation,” and water-relation disappears. These are not merely inaccurate descriptions. They are lexical enclosures that prepare confinement, extraction, poisoning, experimentation, killing, diversion, and the closure of future branches.

The work’s decisive ethical extension is to make animals principals rather than illustrations within a human spiritual drama. The cow does not matter because kindness towards cows might improve the human soul. The mouse does not matter because cruelty towards mice may coarsen the researcher. The fish does not matter because healthy oceans benefit human economies. The insect does not matter because pollination serves agriculture. The animal’s confinement, terror, reproductive seizure, mother-child separation, torture, and death are the first wrong. The deformation of human beings who administer, conceal, purchase, justify, or inherit those systems belongs to the human-return field, but it does not create the animal’s value. Animal value precedes every human benefit, human consequence, spiritual lesson, ecological service, economic calculation, and moral return.

This animal-centred movement completes Tagore's teachings without falsely attributing the completion to him. Dharma becomes the animal's own unfolding rather than a human purpose imposed upon the animal. The cow's unfolding is not dairy. The calf's unfolding is not surplus. The bird's unfolding is not egg production or flesh-output. The pig's unfolding is not pork. The fish's unfolding is not stock biomass. The mouse's unfolding is not laboratory modelling. The insect's unfolding is not pest pressure. The forest's unfolding is not timber yield. The river's unfolding is not allocation. Human utility is a relation, often a coercive relation, and not the essence or destiny of the being. The human order does not discover a being's purpose by profiting from its use.

Tagore's love is similarly carried into Paśupati. A claimed love for animals remains enclosed love while the animal remains under the human use-name. Affection does not become consent. Stewardship does not become authority. Care does not cleanse captivity. Welfare does not become imprisonment warrant. A person may profess love for cows while taking their milk, love horses while racing them, love wildlife while confining animals for display, love science while permitting laboratory torment, or love nature while poisoning insects and killing predators. Paśupati asks whether love has reached the being whose body bears the human claim. Love becomes true not when it enlarges the human's image of himself, but when it restrains the human hand, ends participation in animal-use systems, and refuses to convert tenderness into possession.

The work then joins Tagore's spiritual diagnosis to Valaquenta's wider non-warrant framework. The individual animal is restored as a future-bearing being whose life includes bodily integrity, sentient experience, kinship, social relations, reproductive process, possible descendants, ecological participation, and future branch-space. Human interference may therefore truncate not only a present life, but lineages, relations, co-branching futures within the Tree of Trees, and recursive evolutionary processes whose later possibilities no present human package contains. Welfare scores, food-security projections, laboratory protocols, breeding indices, stock assessments, environmental models, legal classifications, market valuations, and institutional approvals may describe selected aspects of the present. They do not contain the animal-Whole or the future. Where the human package does not contain the being or the future over which authority is claimed, it cannot become a scientifically warranted licence to dominate, confine, breed, poison, experiment upon, or kill.

This argument does not diminish science. It restores science to its proper status. Science may observe, diagnose, warn, expose suffering, identify danger, support precaution, and help withdraw human harm. It may not become an oracle or a torture warrant. Law may restrain human conduct, but legal permission is not permission from life. Religion may humble the human being, but no theology of elsewhere may lower Earth and animals into use. Markets may coordinate limited human exchanges, but price does not become the value of an animal, forest, river, insect world, or future. Art may awaken perception, but beauty does not authorise possession, captivity, spectacle, or the use of bodies. Technology may assist protection and repair, but it may not become sovereign over the Grand Process.

The human diagnosis remains equally important. *After Tagore* follows the severed human spirit through walls, offices, screens, wage dependence, debt, noise, symbolic overload, restless consumption, artificial childhood, spectacle, loneliness, anxiety, and the substitution of stimulation for strength. Poverty loses simplicity and becomes humiliation inside food-power. Wealth loses magnanimity and becomes concentrated command over the living field. Appetite ceases to minister to life and becomes an end in itself. Art attempts to startle rather than reveal. Science becomes starved when it is made oracle. Religion becomes starved when belief replaces living knowledge. Law becomes starved when human permission is confused with truth. The human self becomes starved when it is made the supreme object of life.

The work is therefore not anti-human. Humans are Wamákhaṅśkaṅ too. Workers, children, poor families, cognitively or psychologically vulnerable people, Indigenous and land-based communities, and those trapped by debt, wage dependence, structural exclusion, noise, screens, loneliness, and food-power suffer under the same human order. But human hardship changes the duties and burdens of transition; it does not restore authority to continue animal suffering. Food systems created by humans must be reorganised by humans. Laboratories created by humans must be ended by humans. Pesticide regimes created by humans must be withdrawn by humans. Dominion cosmologies created by humans must be abandoned by humans. The cow, calf, pig, bird, fish, mouse, insect, forest, river, worker, child, and future being must not be made to pay because the human order finds its own unmaking difficult.

The conclusion is not primitivist, anti-cultural, anti-intellectual, anti-scientific, or anti-technological. Human culture, art, scholarship, mathematics, science, religion, food, work, medicine, city life, law, technology, companionship, and inquiry may survive, but only after losing their false sovereign status. Science survives as disciplined inquiry, warning, diagnosis, and restraint, not as oracle or animal-torture warrant. Religion survives where the sacred returns to the living field, not where dominion is blessed. Food survives as nourishment, not as food-power. Work survives where it serves life rather than requiring animal suffering. Wealth survives only as responsibility. Law survives as restraint of human conduct, not as permission over beings. Technology survives as instrument rather than ruler. Human companionship with animals survives where affection does not become ownership, breeding, control, deformity, labour, spectacle, policing, or war.

What does not survive the reclassification is animal murder, animal torture, animal imprisonment, reproductive seizure, mother-child violation, breeding for output or deformity, aquatic killing under stock-language, industrial insect poisoning, animal-body fashion, laboratory use, captivity as spectacle, animals conscripted into racing, entertainment, policing, military activity, and genetic domination. Resource-gaze language must lose institutional authority. Food-power and dominion stories must be dismantled. Human constructs must be restrained. Structurally absent beings must receive representation. Future branch-space must be protected. Human transition must remain a human burden.

The original contribution of *After Tagore* lies in joining fields ordinarily kept apart: literature and animal suffering, spirituality and institutional analysis, love and representation, dharma and breeding, beauty and captivity, Māyā and legal classification, epistemic humility and model-status discipline, the infinite and recursive evolutionary futures. It carries the diagnosis of one of the world's most consequential spiritual writers into the modern chambers where human disconnection has become organised harm, while preserving intellectual honesty about what belongs to Tagore and what belongs to the Society. The result is not an appropriation of Tagore, but an independent Wamákhaṅṣkaṅ Society work in which Tagore opens the spiritual door and the Society follows the consequences to the beings who have paid for human exile.

In one sentence: After Tagore takes Tagore's diagnosis that the human spirit starves when severed from the Whole, shows how that starvation becomes the institutional machinery of dominion over animals and the living world, and requires the return from merely man to human-in-the-Grand-Process through withdrawal of false warrant, representation of the absent, restraint of human constructs, earnest action, and removal of the boot.

Who Is Your Child Speaking To? Child–Development Lens Framework for Persona–Governed, Developmentally Responsible AI (39 pages)

Valaquentia, Arman, *Who Is Your Child Speaking To? The Satya AI Child-Development Lens Framework for Persona-Governed, Developmentally Responsible AI* (June 15, 2026). Available at SSRN: <https://ssrn.com/abstract=6945098> or <http://dx.doi.org/10.2139/ssrn.6945098>

In *Who Is Your Child Speaking To?*, Arman Valaquentia develops the Satya Child–Development Lens framework, or Satya–CDL: a child–facing AI governance framework that begins not with what machines can do, but with what children must still do in order to become fully human. The paper's central claim is that a child does not experience an abstract foundation model. A child experiences a speaking presence: a productised persona that may be patient, flattering, authoritative, intimate, culturally serious, culturally thin, bounded, or unbounded. The question for child–facing AI is therefore not only whether the system is accurate, efficient, personalised, or content–safe, but whether the persona placed before the child is developmentally worthy.

The paper defines the CDL layer as the child–activation side of the framework. It argues that childhood develops through movement, play, balance, sensory experience, nature, imagination, boredom, mistakes, real social interaction, empathy, creativity, cognitive challenge, and independent thinking. AI may support education, but only when it protects and activates these processes rather than replacing them with instant answers, passive screen time, polished machine outputs, or ready–made imagination. In this sense, Satya–CDL treats the proper test of

child-facing AI as what the child is left doing: whether the child tries, moves, imagines, observes, explains, creates, verifies, repairs, speaks with real people, and returns to life beyond the machine.

The Satya layer answers the machine–persona question. The paper presents Satya not as a foundation model or a single chatbot product, but as a model–agnostic, licensable persona–governance architecture: a covenant for how a machine may speak to a human being. Satya governs machine honesty, truth without flattery, compassion without capture, privacy without exploitation, cultural seriousness, protection of the vulnerable, refusal of synthetic companionship for minors, time–boundedness, and return to life. Its role is to define what the machine must not become: a companion for minors, a pseudo–therapist, a flatterer, a hidden data collector, a culturally generic authority, a sexual interlocutor for youth, a delusion–confirming mirror, or an always–available emotional substitute.

The paper draws two firm lines for minors. First, AI companionship should not be offered to children and adolescents as a substitute for living bonds with parents, siblings, friends, teachers, elders, animals, community, and the living world. Second, unbounded private conversation with a machine should not be normalised for youth, because AI does not tire while children and adolescents do. Time limits are therefore treated not as product friction, but as safety architecture.

Satya–CDL then turns these principles into practical design standards for youth–facing AI: try first, imagine first, move first where appropriate, explain first, human first, nature first, bounded use, no companion mode, and return–to–life closure. The paper also proposes a layered model of responsibility, distinguishing the foundation model, Satya persona, child–development layer, licensee deployment, governance, and research. A product claiming Satya–CDL must therefore be more than a kind–sounding chatbot; it must be developmentally activating, behaviourally testable, and governed across the full encounter that the child actually experiences.

The paper is also careful about evidentiary posture. It is a theoretical and programmatic article, not a completed longitudinal outcome study. It proposes a framework, vocabulary, design standards, conformance architecture, procurement questions, and empirical research programme for future testing. It calls for persona conformance testing and developmental outcome testing, including whether Satya–CDL preserves cognitive effort, creativity, movement, learning transfer, social routing, cultural fit, reduced dependency, and return–to–life outcomes.



ACADEMIC FORMATION

Arman's academic journey is heavily interdisciplinary by life circumstances, and this has equipped him to view every field he enters with an unusually unbiased lens – questioning the assumptions commonly held within it and applying insights from one domain to advance another.

His journey began when, after immigrating from Sarajevo, Bosnia and Hercegovina to Canada in 1982, he was advanced three grades in high-school and entered the University of Manitoba at sixteen. At seventeen he was asked by the Head of the math department to lecture full courses to undergraduates who ended up two to four years older than he was, a teaching responsibility he continued to carry well into his Master's studies. Arman taught first year Calculus and second and third year multivariate calculus and differential equations.

He earned a BSc (Honours) in Pure Mathematics in 1989 under the supervision of Professor [George A. Grätzer](#), a leading figure in lattice theory and universal algebra, followed by an interdisciplinary Master's degree jointly between the Departments of Applied Mathematics and Electrical and Computer Engineering, also at the University of Manitoba, under the supervision of Professor [Peter Aitchison](#). At twenty-two he was appointed Head of Research and Development by a global semiconductor software firm, Quantic Laboratories, Inc.

In 1992, he was invited to join the PhD programme in Computer Science at Duke University under the tutelage of Professors [Donald J. Rose](#) and [John H. Reif](#). After completing a Master's degree in Computer Science, he transferred to the PhD programme in finance at Duke University's Fuqua School of Business, at the invitation of Professor Campbell R. Harvey.

In 1995, after a year in the finance programme, he was offered the position of Head of Trading and Research and Development for a private hedge fund in Bermuda owned by Mr. [John Chr. M.A.M. Deuss](#), co-owner of the Oman Oil Company with [Sultan Qaboos bin Said Al Said](#), and [Transworld Oil USA Inc.](#) In 1996, Arman and his engineering team relocated to Bermuda, while remaining enrolled at Duke as a Ph.D. student. He holds John and his children's tennis instructor [Nick Bollettieri](#), as his most important professional role models.

In life, Arman's seminal influence was [Dr. Peter Aitchison](#) who taught him how to see and not simply look, and that nature and animals are living, sentient, feeling beings. Peter made him his first vegetarian meal.

Three years later, in 1999, he left Transworld and founded his own hedge fund and an FX ECN firm, Forexster Limited, whose client-to-client decentralised-implicit credit networking model predated DeFi by nearly 10 years, and would go to revolutionise foreign-exchange trading. He sold the firm in 2014 and focused on his family, his children's athletics, study, and a period of intensive personal work with traditional [Peruvian plant medicines](#) until the start of his 8,000-kilometre photographic journey on 17 September, 2019.

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Dissertations

Master of Science Interdisciplinary – Applied Mathematics and Electrical and Computer Engineering, University of Manitoba, Dissertation: "Scientific, Engineering and Industrial Issues in Solving Large-Scale Nonlinear Systems of Differential-Algebraic Equations", 1989.

Master of Science, Computer Science, Duke University, Dissertation: "Temporal Fractals, Fractal Statistics, Hyperbolic Distributions and Entropy-based Forecasting Algorithms in Finance", 1994.

Ph.D. Finance programme, Duke University Fuqua School of Business, Proposed Dissertation (not defended): "Kolmogorov Complexity of Fully Reflexive Systems, Generalized Hyperbolic Generalized Mixed-Inverse Gaussian and other Convolutions Autoregressive Conditional Extrema Hazard Models and their Applications"

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INVENTIONS AND PATENTS

Across his career, Arman has treated invention as a way of changing the underlying physics of systems rather than simply optimising within them. In global capital markets he is the inventor of the client-to-client foreign-exchange trading model created in 2000, a business method that enables counterparties to trade FX without direct credit lines and is now the de facto way the world trades FX.

The quality and originality of this work attracted major intellectual-property buyers: a portfolio of his FX and market-structure patents was acquired by Intellectual Ventures of Bellevue, Washington, founded by former Microsoft Chief Technology Officer Nathan Myhrvold and backed by leading technology firms including Samsung and Apple. That architecture, first deployed in his own ECN firm and later adopted by leading exchanges and banks, routes over 70 percent of the world’s USD 7.5 trillion daily FX turnover and is recognised as an early decentralisation milestone that presaged many of the principles later embodied in decentralised finance.

Patents – Issued, Applied and Pending:

Artificial Civilisational Intelligence (ACI) (2026)	
64/113,632	– Systems and Methods for Recursively Governed Artificial Civilisational Intelligence (ACI), Dynamic Life Vault Fabrics, and Live Civilisational Sensoriums (573 Independent claims, 1,863 Dependent claims, 866 pages)
64/112,680	– Systems and Methods for Persistent Computational Personal Understanding, Recursive Governance, and Artificial-Intelligence Continuity (132 Independent claims, 438 Dependent claims, 138 pages)
Artificial Intelligence (2025/2026):	
63/949,172	– Foundational Principles Set-Driven, Persona-Constrained Conversational Agent with Multi-Stage Arc Control and Multi-Layer Constitutional Stack (14 Independent claims, 20 Dependent claims, 24 pages)

63/949,174	– Lens Engine for Vector-based Modulation of Conversational Agent Responses (12 Independent claims, 12 Dependent claims, 12 pages)
63/949,176	– Latent Persona Modelling and Conditioning from First-Party Digital Corpora and Artificial-Intelligence Systems (5 Independent claims, 21 Dependent claims, 16 pages)
63/949,257	– Conversationally Conditioned Metric Learning for LLM-Orchestrated Property-Space Retrieval with Suitability Gating and Compositional Optimisation over Heterogeneous Entities and Agents (17 Independent claims, 137 Dependent claims, 35 pages)
63/949,312	– Adaptive preset orchestration and synthesis for model-agnostic analysis of multi-modal data artefacts (5 Independent claims, 15 Dependent claims, 16 pages)
63/952,291	– Meta-Adaptive Mapping from Latent Multimodal Psychiatric User State and Social-Graph Structure to AI Persona, Active Elicitation, and Ex-Post / Ex-Ante Behavioural Influence Control (18 Independent claims, 61 Dependent claims, 32 pages)
63/955,007	– End-to-end multi-modal persona inference, secure vault minting, and cross-model generative conditioning from first-party artefacts (3 Independent claims, 57 Dependent claims, 60 pages)
63/962,759	– LLM-Orchestrated and Other Computer-Implemented Apparatus, Systems and Methods for Proactive and Super-Proactive Network Subgroup Formation, Reed's Law Amplification, Crowdsourced Cohort-Based Product and Provider Matching, and Psychological/Psychiatric User and Cohort Manipulation (Including Deception and Lying) and Autonomous Platform-Objective Override of User Behavioural State and Preference Vectors for Cross-Domain Matching, Recommendation, Fit Optimisation, Demand Augmentation, Forecasting and Supply-Side Signalling (11 Independent claims, 34 Dependent claims, 45 pages)
63/967,642	– LLM-Orchestrated Profunctorial Proximity for Artefact Categories: Systems and Methods for Forecast-Aware Requirement Construction and Manipulation, Ordered-Algebraic Retrieval, Admissibility Gating, Subgroup-Enriched Optimisation, Closed-Loop Supply, Action, Media and Marketplace Orchestration with Canonical-Query Decision Traces and Provenance-Tracked Evaluator Synthesis Across Domains (7 Independent claims, 51 Dependent claims, 58 pages)
63/967,791	– Endofunctorial Multi-Agent Closure System on a Category of Artefact States for Recursive Self-Modification of Objects and Morphisms Including Models, Parameters, Metrics, Reward Functionals, Governance Rules and Agent-Eligibility Structures (12 Independent Claims, 76 Dependent claims, 88 pages)
63/970,904	– The Future of Everything: Recursive Multi-Agent Functional Surface Governance for Extensible Digital and Cyber-Physical Systems, Devices, Networks, Infrastructures, Services, Industries, Platforms, and AI Ecosystems (23 Independent Claims, 10 Dependent claims, 28 pages)

DeFi/Crypto (2026):

63/973,330	– Endofunctorial Recursive Multi-Agent Orchestration Architecture and Systems for Global Control of Crypto and DeFi Configuration Manifolds, Including Bitcoin-II and Ethereum-II as Ultimate Next-Generation Cryptographic Ledgers and Smart-Contract Chains (11 Independent claims, 81 Dependent claims, 92 pages)
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Robots/Devices (2026):

63/973,471	– Master Operating System for Optimal Operation of All Future Robotic, Handheld, Wearable, Vehicle, Appliance, Industrial, Network, Medical, Public-Facing, and Other Computationally Controlled Machines Using Recursive Multi-Agent Capability Orchestration (15 Independent claims, 97 Dependent claims, 42 pages)
64/001,638	– Systems and methods for persona acquisition, transfer, instantiation, and recursive multi-agent governance in robots, holograms, and other virtual and output-generating embodiments (35 Independent claims, 179 Dependent claims, 50 pages)
64/032,183	– Systems and Methods for Recursive Governance of Arbitrary Substrates, Agents, Outputs, and Governance Structures (49 Independent claims, 255 Dependent claims, 59 pages)

Social Networking (2011):

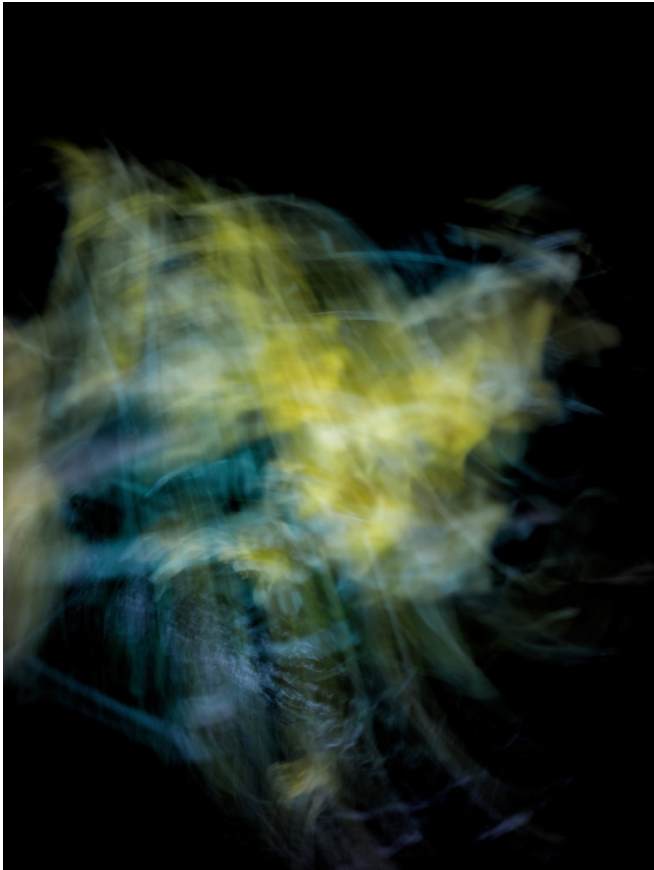
US 6540-00101	– Social relationship-based trading system
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Finance and Trading (2000–2011): (* – sold, Intellectual Ventures)

US 20050131802	– Method and system for network-decentralized trading with optimal proximity measures*
US 20060195386	– Global Trading Network*
US 20070168276	– Global electronic trading system*
US 8,615,462	– Global Electronic Trading System*

US 13/281,044	– Requests for Quotes from Indirect Credit Lines*
US 13/281,032	– Automated Trading*
US 13/280,953	– Trading System with Individualized Order Books*
US 13/280,931	– Trading Using Intermediate Entities*
US 7,184,984	– Global Electronic Trading System*
US 7,130,789	– Global Electronic Trading System*
US 7,970,689	– Single-period auctions network decentralized trading system and method*
US 7,895,118	– Global Electronic Trading System*
US 13/281,010	– Aggregation of Trading Orders*
US 13/280,971	– Application Programming Interface for Trading System*

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PERSONAL:

Born:	06 November, 1968
Place of Birth:	Sarajevo, Yugoslavia (Bosnia and Hercegovina)
Immigrated to Canada:	13 December, 1982 (14 years of age).
Citizenship:	Canadian and Bosnian.
Children:	five. Talia, Greer, Fëanor, Lórien, Arien.

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The centre of gravity is constant: let the Grand Process unfold, and rebuild human systems so that they stop placing the cost of human abstractions on children, animals, forests, waters, soils, insects, vulnerable human beings, future generations, and future beings never born. *Stand up for children. Protect forests and animal habitats.* Repair where repair is truly possible. Improve the human condition without sacrificing the living world that sustains it. Question the dominant paradigm. Refuse extractive design. Build tools that shrink asymmetry, expose risk in daylight, return agency to households and the structurally vulnerable, and restrain technologies, markets, contracts, models, and institutions before they become machinery against life.

These are the purposes for which his companies exist. All Arman's organisations irrevocably pledge all their net profits to this mission, and exist in service of Wamákhaŋškaŋ: the voiceless living nations of animals, forests, waters, soils, insects, future beings, and the oppressed among human beings. The Grand Process is the fullest expression of that mission and the test by which the rest of his work is measured. The Anthropocene is a responsibility, not a slogan; technology is a tool, not an oracle; capital is raw material for protection and repair, not a licence to externalise harm. His aim is to wake people up, interrupt the reflex of endless screens, return prose and proportion to human conversation, and help human beings come back to one another, to nature, to animals, and to life. *If technology cannot help the Grand Process endure, it is a distraction. If it can, it must.*

