

Relevant Achievements

My research project is very ambitious. I know that my approach is intrinsically sound. I share some of my achievements which confirm to me that it has been explicitly fruitful.

Three minds

In 1982, as a freshman at the University of Chicago, wanting to know something absolutely, I started documenting „divisions of everything“. In 1989, as an independent scholar at Vilnius University in Soviet-occupied Lithuania, I realized that they form an eight-cycle with three operations, +1, +2, +3. These operations were the three minds that I am now researching. I presented these results in the following two academic talks.

[Time and Space as Representations of Decision-Making](#), *Space and Time: An Interdisciplinary Approach*, 2017.09.30, Vilnius University, Lithuania.

[Consciousness as the Social Awareness Schema of a Disembodying Mind](#), *III International Conference on Philosophy of Mind: Minds, Brains and Consciousness*, 2017.10.11, University of Minho, Braga, Portugal.

In 2016, I became aware of a mathematical eight-cycle known as Bott periodicity. I was curious whether it may be the same structure, as suggested by its metaphysical possibilities, given that it encoded n-dimensional spheres and fundamental symmetries. I think of this as the belly button of mathematics where all the branches come together, I think because it seems to model the symmetries of math itself. This is arguably the most intense and challenging nexus, the cradle of K-theory, developed by Alexander Grothendieck. Working independently, I had to learn about category theory, algebraic topology, Lie theory, Clifford algebras, octonions, division superalgebras, representation theory, Hamiltonians, condensed matter physics and quantum foundations to make sense of it. Finally, this year, I was able to present it concretely and work out how it models the three minds as three quantum symmetries and the eight divisions of everything as combinations of those symmetries. This yields a bridge between psychology, philosophy, metaphysics, consciousness studies, on the one side, and mathematics and physics on the other side. Thanks to Active Inference, this also connects with neuroscience, artificial intelligence, biology and other fields. I have written this up as:

[An Allegory: The Solipsistic Self as the Hamiltonian of a Noninteracting Fermion](#)

I thought through a theory of emotional responses based on whether expectations were met or not, whether they applied to one's self or the world, whether we could make them at all, and whether they were what we wished for. I gave academic presentations such as this one.

[Expecting What We Don't Wish: The Source of Anger, Hate, Relief and Depression.](#) *Emotions: Rationality, Morality and Social Understanding*, 2017.09.09, University of Tartu, Tartu, Estonia.

This boundary of the self, which distinguishes surprise and sadness, excitement and contentment, fright and disgust, relief and depression, anger and hate, is relevant for Active Inference, and is also evidence of the three minds. Notably, emotions are how the unconscious answering mind tells the conscious questioning mind that its generative model is wrong or incomplete.

I challenged myself to take this a step further by developing a theory of moods, which nobody has ever done. As my set of data, I chose 39 classic four-line Chinese poems from the Tang Dynasty because, as I claimed and showed, each poem is crafted to evoke a very particular mood. I like to study Chinese and so that made it fun, too. Given my theory of our emotional life, I worked out that the moods arise entirely from manipulations of the boundary between self and world. Specifically, there are six geometric transformations: reflection, shear, rotation, dilation, squeeze, translation. These happen to pair four ways of understanding a triangle, in terms of paths, lines, angles and oriented areas. The Lithuanian Science Council funded me to present this at the World Congress of Philosophy in Beijing, China. Later I realized that these are the six Moebius transformations of a sphere that map circles to circles.

[A Geometry of Moods: Evoked by Wujue Poems of the Tang Dynasty](#), *Philosophy and Literature*, XXIV World Congress of Philosophy, 2018.08.15, Beijing, China.

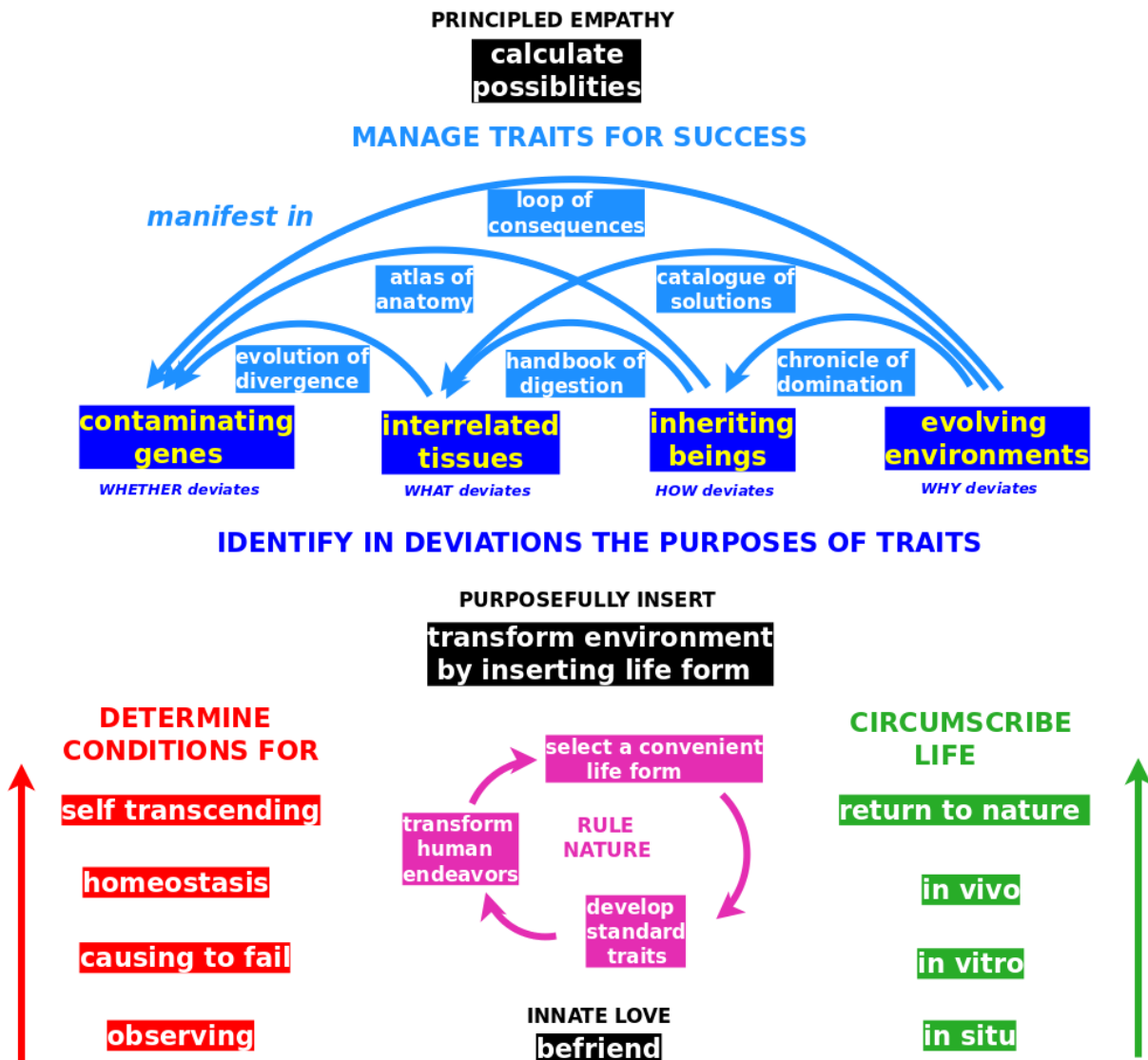
In 1998, a hermit, Kęstas Augutis, told me his vision that the only requirement for graduating high school should be to write three books that illustrated thinking in terms of sequences (a diary), hierarchies (a thesaurus) and networks (an encyclopedia). I wondered if these were the only such structures so I collected about 60 examples. I realized that we never use these structures by themselves. We always use a pair, with one restructuring the other. This made for six visualizations. Later, I did a study of the paradoxes that I found in Wikipedia. They matched up with these visualizations. The conscious questioning mind was restructuring the unconscious answering mind. The gap was the basis for paradox. These are very relevant for the three languages and I suspect these 6 visualizations are the reason for the 6 layers in cortical columns.

[Visualization as Restructuring and thus a Source of Logical Paradox](#), *Logic for Children*, 6th World Congress of Universal Logic, 2018.06.24, Vichy, France.

I spend my best energies contemplating how all the most fundamental structures unfold from God's point of view. This involves inverting a lot of the usual thinking, for example, by considering God as a state of contradiction, where all things are true and possible, and imagining how that could give rise to a state of noncontradiction. Is God necessary? Would God be if God was not? In 2016, I would visit Thomas Gajdosik, a theoretical physicist and devout Catholic, and tell him over and over how I imagined the unfolding of this logic until I worked out a 24-fold God's dance which included all the ways that I conceive God. This type of thinking speaks to the origins of the three minds.

[Imagining God's State of Mind As a Question: Is God Necessary?](#), *Philosophy of Religion*, XXIV World Congress of Philosophy, 2018.08.19, Beijing, China.

In 2009, I managed to pull together my philosophy but I felt nobody cared to understand what I thought. But I considered maybe they would care about the ways I figured things out. I wrote out 200 ways and systematized them into a pattern of 24 ways. Then I found that same pattern in the epistemology of mathematics and other fields where I have looked. The central method establishes the ideal observer: in math, we describe the symmetry group; in physics, we isolate the system; in biology, we transform an environment by inserting a life form; in neuroscience, we link neural processes and outcomes in time; in Wondrous Wisdom we express in a universal language; in my life, I capture with a personal expression. Twelve methods set up the system we study, and twelve methods examine it.



Thus in biology, we enter by befriending life. With the answering mind, we circumscribe what is alive by considering it in situ, in vitro, in vivo and by returning it to nature. With the questioning mind, we work out the conditions for life to be observable, fail, maintain itself, and transcend itself (as with regeneration or reproduction, defining success). We link these strands together with a learning three-cycle of selecting a model organism, developing standard traits, and using it to transform human endeavors (agriculture and medicine). This enables us to purposefully insert an organism into an environment, thus study it as part of a biological system. We can consider whether (contaminating genes) deviate, what (interrelated tissues) deviate, how (inheriting beings) deviate and why (evolving environments) deviate and thereby identify the purposes of traits. These 4 levels make for 6 pairs which visualize the success of traits: evolution of divergence, atlas of anatomy, handbook of digestion, chronicle of domination, catalogue of solutions, loop of consequences. Together these define life as a system for managing traits for success (with success understood as transcendence, regeneration, reproduction). We sum up and leave biology by mathematically modeling and calculating the possibilities, as with Active Inference. I presented this in Lithuanian.

[Adam Named the Animals. There is Love of Life in the Epistemology of Biology.](#) Adomas pavadinio gyvūnus. Biologijos epistemologijoje glūdi meilė gyvybei. *Antropoceno iššūkiai: Žmogaus ir gamtos santykių problemos rytų ir vakarų mąstytojų akiratyje.* 2021.11.05, Vilnius, Lithuania.

In neuroscience, I considered brain structure in terms of user requirements rather than material implementations. I expressed the need for a dialogue between an advocate in terms of what we know and an advocate in terms of what we don't know. These user requirements give a sensible explanation why the brain has two hemispheres, even though implementations vary. I identified the answering mind, System 1, with the right hemisphere, and the questioning mind, System 2, with the left hemisphere, and indicated that they may be regulated within the basal ganglia. I presented this as a poster.

[What Minds Require of Brains: A Phenomenological Consideration of the Evolution of the Central Nervous System Towards Abstraction](#), *Lithuanian Neuroscience Association's 9th Annual Meeting*, 2017.12.01, Kaunas, Lithuania.

I systematized the methodology of neuroscience. Implicit in neuroscience is the understanding of the nervous system as the organizer of an organism. On the one hand, we keep the components (neurons or tissues) viable and measure correlates of their activity, formulating neuroscientific answers. On the other hand, we link the evolution of brain structure and functionality, formulating neuroscientific questions. This allows us to link neural processes and their phenotypic expression. Crucially important are four levels of errors which relate questions and answers: phantoms (errors in whether: false information), illusions (errors in what: imperfect models), novelties (errors in how: incorrect predictions) and thoughts (errors in why: mental fictions). Thus Pavlov's dog's contrived notion of „dinner time“ is a nonphysical (noncausal though useful) conception which tenuously gathers together the relevant sights, sounds, smells and other associations. The mind inverts the brain, as its inevitable flip side. The brain's objectively flimsy, fleeting, rickety, conditional, culminating purposes get reinterpreted as the mind's subjectively solid atoms, associative thoughts, the given starting points. The "binding problem" is resolved by appreciating that reality generates and supports this dual interpretation, as foreseen by Descartes. I made a poster of the 24 ways.

[Expressing the Organizer of an Organism's Behavior: An Epistemological Overview of Neuroscience](#), *XI International Conference of Lithuanian Neuroscience Association, Behavioural Medicine and Neuroplasticity*, 2019.11.29, Kaunas, Lithuania.

Similarly, I analyzed a corpus of about 100 innovation games for business known as Gamestorming. I then appealed to that to explain how natural language works. Meaning arises as we reduce vagueness so that we could coordinate recurring activities. We do this by structuring games. We enter a game by asking a question, identify the meaning within a game, and then leave a game by accepting an answer. We can have a game within the game. I think this is the basis for the universal grammar that Noam Chomsky seeks. This is relevant for the dynamics of triangle geometry.

[Games as the Foundation for Universal Grammar](#), Originally: Could the Basis for Language Be the Reduction of Vagueness In Order to Coordinate Activity? *Cognition and Language*, 2017.11.25, Brno, Czechia.

These epistemological systematizations are informative. They make explicit the assumptions implicit in a discipline. In particular, they allow us to identify the three minds. The investigating mind studies a system established by the dialogue of the answering mind and the questioning mind. We can understand not just a discipline but also a being (such as Nagel's bat) or a personality (such as Jesus, Jere Northrop or Karl Friston) by systematizing their ways of figuring things out. I took up a challenge given by Daniel Friedman and Eirik Søvik in their paper [The ant colony as a test for scientific theories of consciousness](#). What can Wondrous Wisdom say about the consciousness of an ant colony? Let us look at the ways that an ant colony figures things out. On the one hand, ants track their rates of encounter with each other, which yields liquid streams of ants permeating their surroundings out and about. On the other hand, ants dab pheromones on each other's foreheads,

which sends semiotic messages to the queen's cohort deep within the sterile nest. What could regulate the relationship between the immersive liquid mind and the digital semiotic mind? I imagine it is the nest maintainers who can manipulate the entrances of the brainlike nest so as to play with the tipping point as to whether the colony wages war or maintains peace, whether it warms the nest or cools it down, whether it will move the nest or trigger reproduction. Based on the available facts, we arrive at a very concrete model which can be scientifically explored, yielding an ever better understanding of how an ant colony figures things out, and thus the nature of its three minds.

The questioning mind and the answering mind can also be understood in terms of the truth of the heart and the truth of the world, which the investigating mind must distinguish. In 1997, my friend Joe Damal, a community organizer in Chicago, encouraged me to put my philosophy into practice. I spent one year with my friends to think through good will exercises to address situations that riled us because we believed one thing in our heart but heard another thing from the world. For example, I would get riled when I would meet homeless people asking for money. I came to realize that the person who is riled, like me, is always wrong, and is confusing the truth of the heart and the truth of the world. I was concerned that „my help could make things worse“, which is true, but I also knew that „if somebody needs help, I should help“. The latter is actually the truth of the heart but I was focused on the former, and so I was confused and riled. I came up with three more tests. We can learn the truth of the world from examples (where we see that help made things worse) whereas the truth of the heart is tautological and must be already within us (we can't show examples that we „should“ help). The truth of the world follows the truth of the heart but not the other way around. (If we think we should help, then we will care not to make things worse. But if we focus on not making things worse, then we will never help anybody.) Given four levels of knowledge – whether, what, how, why – with why being the broadest, the truth of the heart deals with the broader scope. (What kind of help do we give? Help that does not make things worse. But why do we help? Because we should.) These four tests concur and they show that it is the questioning mind which speaks the truth of the heart and the answering mind which speaks the truth of the world. We should develop our generative models in terms of their own inner consistency (in terms of not knowing) and not the disparate facts of experience (in terms of knowing). This is a form of cognitive therapy, broadly applicable, which unravels one's confusion and leaves no scars. I worked this out with my friends for about thirty situations that riled one of us. We distinguished the truth of the heart and the truth of the world, and then did good will exercises to assimilate the truth of the heart. I gave a presentation about this in Lithuanian.

[The One Who Is Riled is Wrong. Polemic with Heidegger.](#) In Lithuanian: Kas jaudinasi, klysta. Polemika su Heidegeriu. *Egzistencializmas ir jo idėjų pėdsakai XX a. kultūroje*. 2016.03.05, Lietuvos kultūros tyrimų institutas, Vilnius, Lithuania.

The lesson here is that the facts of my achievements are irrelevant. What is relevant is the soundness of my approach, in that I am focusing on what is truly important, the universal logic within us which inevitably manifests through us in the world. We choose why and how and in what form it will.

Thus I have encountered the three minds from several different angles. They fit into an overarching theory, Wondrous Wisdom, that I have just touched upon and that I keep working on. I have written out its [vocabulary](#). I have thousands of pages of [notes](#) in Lithuanian where I keep working on it. I want to communicate it as a series of essays describing conceptual frameworks illustrated by examples collected at [Theory Translator](#). Most importantly, I need to foster an investigatory community which would have reason to embrace it as a language of wisdom for a science of subjective human experience. I believe that my findings support and extend Active Inference and I can contribute to the mission of the Active Inference Institute.

Organizing an Investigatory Culture

I conclude with some of my achievements in organizing a culture of independent thinkers. From 1998 to 2010, as an entrepreneur, I led Minciu Sodas, my online laboratory for serving and organizing independent thinkers around the world. I provided free service to independent thinkers willing to work on their projects openly, in the Public Domain. We would thereby get to know each other and I would organize paid teams for knowledge work. I served about twenty clients but ultimately went bankrupt. We had 200 active participants, writing letters, and 2,000 passive participants, reading them. We had about 20 working groups based on the deepest values of their leaders. We developed a distinct culture which I described in this presentation.

[The Orchard of Thoughts: An Alternative Culture of Growing in Not Knowing](#), *Estonian Annual Philosophy Conference 2017, Facts, Disputes, and Arguments in the Age of "Post-Truth"*, 2017.05.11, University of Tartu, Estonia.

Most remarkably, we averted genocide after the Kenyan post-election crisis of 2009 by organizing the Pyramid of Peace consisting of 100 peacemakers on the ground and 100 online assistants. I led us from Lithuania. Afterwards, I assembled a [day-by-day account](#) of our two-month-long campaign. I applied my skills in nonviolence that I developed engaging gangs in the distraught neighborhood where I lived in Chicago with my grandmother. I restated Jesus's teaching „Love your enemy“ as „Look at everything from your enemy's point of view“, and concretely, „Be straightforward, proceed step-by-step, be vulnerable, let them win, let them teach you, stick to your principles, have something to share.“ Metaphysically, I related these maxims to seven counterquestions for addressing doubts, which I had developed for debrainwashing ourselves. This assured me that the system was complete. I describe my approach in my presentation, [Bring Peace to Russia and Ukraine](#).

While staying with my friend Brother David Ellison-Bey in Chicago, I wrote [An Economy for Giving Everything Away](#) to explain why private interests would fund the public commons. I won a travel grant to present this at a Development by Design conference in Bangalore, India. Most significantly, innovator Chris Messina, who introduced the hashtag # to social media, [kindly credited](#) this paper as the key impact on this innovation, to make it sure that it was not trademarked but belonged to the public. Thus I see that my life work has impacted the world. This encourages me.

Why have I not presented this all in academic papers? I received my BA in Physics in 1986 and my PhD in Math in 1993. At that time, there was no academic discipline where I could study the limits of my imagination. The Journal of Consciousness Studies was founded in 1994 and prior to that, consciousness was a dubious, crack pot notion. Philosophy was not interested in answers, and certainly not absolute truth. Disciplines were narrowly defined, and still they are today, and there is no easy way for an outsider to participate. I got a general education in college and then chose to study mathematics for my PhD as the most difficult subject and as the training most helpful for establishing a new science. More importantly, I believed that the university, as a sheltered environment, is not the best place for learning about life. So instead I lived with my grandmother, a good and wise person, who had only two years of school as a peasant girl, but was beautifully intelligent like me. In 2014, I started giving academic presentations, 45 so far, about my philosophy in Lithuania and then other countries. People were interested but not enough to want to work together. In 2022, I started my own supportive investigatory community, Math 4 Wisdom.

I am fortunate to have met Daniel, to get to spend time with him and to learn about the world of Active Inference. As I nurture a science of subjective human experience, I wonder how to connect with academia, with the scientific community, in a transformative way, to extend the investigatory scientific mindset to the questions we ponder in our lives, as I do in my personal culture. I know

that my findings are compatible with Active Inference and that much of it can be translated into the ontology of Active Inference, as can many other theoretical frameworks. I see that Active Inference attracts friendly, thoughtful, loving people, and I imagine that, as a Bayesian approach, it is forward looking, but especially, it opens up freedom with the fact that we can update our models or we can update the world. As an Active Inference Institute Research Fellow, I would feel I am included, and know that I am supported, and would include and support others likewise.