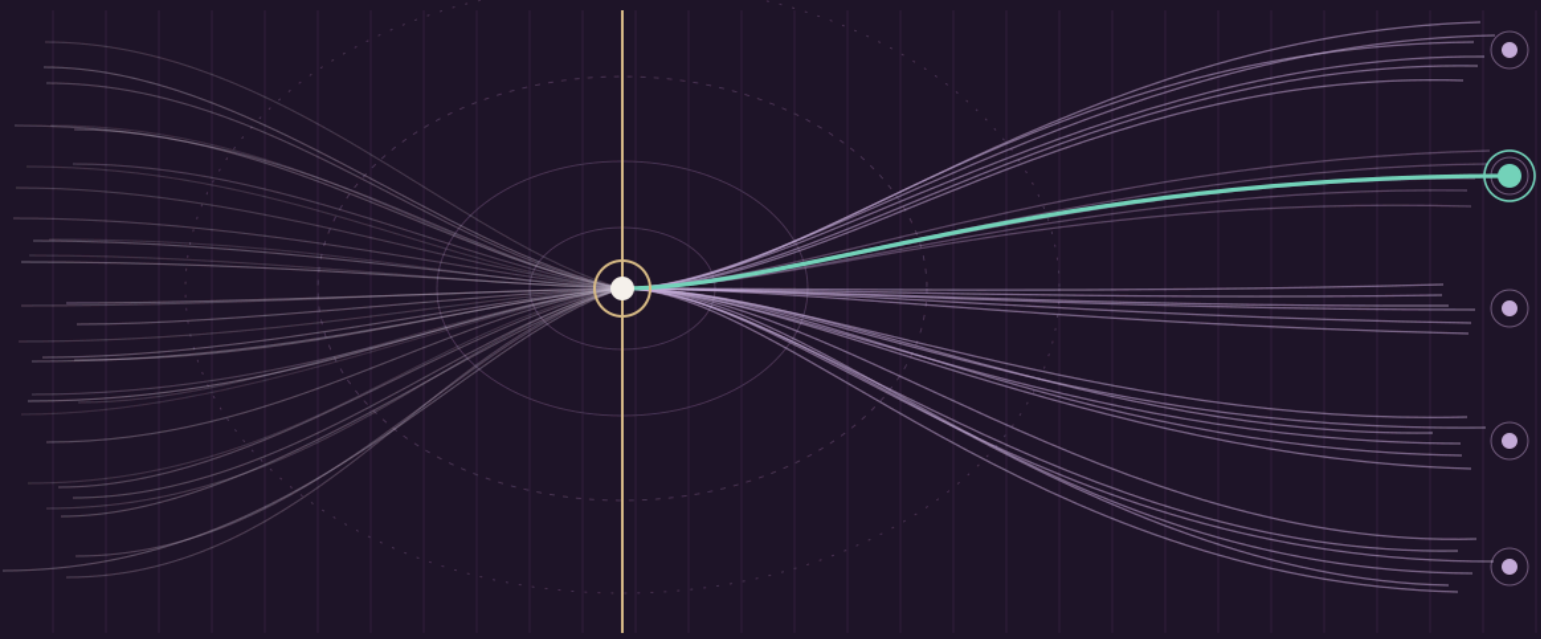
WP FOUNDATIONAL WHITE PAPER

A Homeland *in Time*

Consciousness, Temporal Belonging and the Quantum Era

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FIRST EDITION · HOMELANDINTIME.ORG



Abstract

For most of history a homeland has been defined by territory and memory. The twentieth century and the beginning of the twenty-first have shown how fragile that definition is. States dissolve, borders move, economies are rebuilt, and hundreds of millions of people live outside the country of their birth. Many more have not moved at all, yet have lost something less visible: confidence in the future they expected to inhabit.

This paper proposes that a person can establish a third relationship alongside the homelands of place and memory: **a homeland in time**. It is a conscious relationship with a possible future, formed before that future exists. The central proposition is: *the homeland of the past needs memory; the homeland of the future needs consciousness.*

The argument has three movements:

- **Homeland** distinguishes five things that are usually confused. Three are losses: of a territorial homeland, of historical or cultural continuity, and of an expected personal future. Two are acts and outcomes: the conscious creation of a new future orientation, and the emergence of shared possible futures without compulsory collective identity. The dissolution of the Soviet Union and of Yugoslavia, migration and displacement are treated as examples of different human experiences, not as grounds for judging states.
- **Consciousness**, the central subject, separates two research areas. Reflective and intentional consciousness grounds temporal belonging now. Phenomenal and quantum consciousness remains an explicit and serious research horizon.
- **The quantum era** distinguishes quantum computing, quantum probability as a mathematics of judgment, and quantum-physical hypotheses about the mind. It uses the principle *readiness before the machine* as an analogy for human preparation, not as evidence about the brain.

On this basis the paper presents the **Temporal Noosphere**, a conceptual and computational research model of possible futures arising from independent conscious agents, and **MITOSIS**, a proposed computational research architecture. It also develops **future capital** as a dimension of human capital. It states the limits of every mechanism, answers nine objections and sets out falsifiable hypotheses. Every claim is marked by status.

How to read this paper

MARK	MEANING
P	Philosophical proposition: argued, not measured
E·A	Empirical evidence, replicated or large-scale
E·B	Empirical evidence, peer-reviewed, single line of research

MARK	MEANING
E·C	Empirical evidence, contested or unreplicated
T	Theoretical proposal or calculation in the scientific literature: not experimental evidence
M	Computational or formal model proposed here, not yet built or tested at scale
H	Original hypothesis of this programme, stated so that it can fail
S	Speculative horizon: not assumed by the model

Supporting evidence does not prove a philosophical thesis. Where the paper cites findings in support of a proposition, they show that the proposition is plausible and testable, not that it is established. The programme's own internal research documents (HIT-R1, HIT-R2) have not been peer reviewed.

Prologue: the proposition

> **The homeland of the past needs memory. The homeland of the future needs consciousness.**

A homeland of the past survives in memory: in language, in stories, in the names of streets that may no longer exist. It can be lost on the map and still be carried.

The second sentence is the subject of this paper. If a homeland can survive in memory after its territory has gone, can a person also establish, in consciousness, a homeland-like relationship with a future that has not yet come? Can this relationship exist when a person is entirely alone, without recognition by any institution or community? And can many people hold such futures without being forced into one?

PART I · HOMELAND

1. What a homeland is

A homeland is usually defined by its contents: territory, language, people, history, state. Yet any of these can be missing and a homeland is still recognised. Emigrants keep a homeland without its territory. Speakers of minority languages keep one without a state.

When the contents are removed, what remains is **orientation**. [P] A homeland is the place from which a person understands where they come from and where they are going. Benedict Anderson showed that even the nation is an *imagined community*: its members feel a deep comradeship with people they will never meet (Anderson, 1983). Simone Weil described rootedness as participation in a community that keeps alive certain treasures of the past and certain expectations of the future (Weil, 1949). In her account, the future is part of rootedness itself.

Definition. [P] A *homeland* is a bond that gives a person orientation in time and among others. It has four strands:

- **place**: territory;
- **memory**: history, language, ancestors;
- **polity**: state, citizenship, law;
- **direction**: an expectation of the future.

2. Five things that must not be confused

Discussions of lost homelands often merge different experiences. The proposal depends on separating them. [P]

	EXPERIENCE	WHAT IS LOST OR CREATED	EXAMPLE
1	**Loss of a territorial homeland**	Place, sometimes polity	Displacement by war; emigration; a border that moves
2	**Loss of historical or cultural continuity**	Memory becomes contested or unsupported	A language loses public status; a narrative of the past is replaced
3	**Loss of an expected personal future**	Direction	A profession disappears or a promised life path closes, without any move
4	**Conscious creation of a new future orientation**	Direction, restored by the person	The core of a homeland in time (§8)

	EXPERIENCE	WHAT IS LOST OR CREATED	EXAMPLE
5	**Emergence of shared possible futures without compulsory collective identity**	Overlap of directions, freely held	Levels L2–L5 of the Temporal Noosphere (§12)

The first three are losses that history and politics can impose. The fourth and fifth are acts and outcomes of consciousness. Experiences 1 and 2 require political, legal and material responses: rights, citizenship procedures, restitution, cultural protection. This paper offers no substitute for them. It addresses the third loss with the fourth act, and examines the conditions for the fifth.

3. When the map changes: examples, not verdicts

The examples below show how the strands of a homeland can come apart. They are not used to condemn or defend any state. The same event can mean liberation, restored sovereignty, loss or uncertainty, and the same person can experience several of these at once.

3.1 The dissolution of the Soviet Union

The 1989 census counted 286.7 million people in the Soviet Union (USSR State Committee for Statistics, 1989). The dissolution was a process, not a single moment. Several republics declared or restored independence during 1990–1991, and the Union formally ceased to exist at the end of December 1991.

Four things changed at different speeds, and they must be distinguished:

- **state succession**: which state now governed a territory;
- **legal citizenship**: settled by each successor state's laws, often months or years later;
- **ethnic identity**: not changed by the event itself;
- **individual belonging**: how each person related to all of the above.

Citizenship transitions were not instantaneous, and successor states chose different principles:

- **Russia** adopted its citizenship law on 28 November 1991; it entered into force on 6 February 1992. Former Soviet citizens permanently resident in Russia on that date became Russian citizens automatically. Others could acquire citizenship by registration during a transition period (Law of the RSFSR No. 1948-I, 1991; bpb, n.d.).
- **Lithuania**'s 1989 law allowed residents to opt for citizenship until November 1991.
- **Estonia and Latvia** based their initial citizenry on pre-1940 citizenship and descent. Residents who had arrived during the Soviet period could acquire citizenship through naturalisation (Human Rights Watch, 1993).

For some people the result was a quick new citizenship. For others it was a long period as non-citizens or stateless persons, and for others a choice between states.

According to the 1989 census, about 25.3 million ethnic Russians lived in Union republics other than the RSFSR, close to one Russian in five (Sushchiy, HSE Demographic Review). Many other groups were similarly spread across republics. Rogers Brubaker described such populations as diasporas created by moving borders rather than by moving people (Brubaker, 1996).

The meaning of 1991 differed between and within societies. For many in the Baltic states, Ukraine, Georgia and elsewhere it meant the restoration or establishment of independent statehood that many had long sought. For many others it meant the end of the only state they had known, of its institutions and of its expected future. Some experienced both.

In Russia, the Levada Center has asked the same question, “Do you regret the dissolution of the USSR?”, since March 1992; the early surveys were run by the same research team when it worked as VTsIOM. In the published series up to November 2021, the share answering “yes” ranged from 49% (December 2012) to 75% (December 2000) and stood at 63% in November 2021, with 28% answering “no” (Levada Center, 2021; national sample of 1,603 adults, face-to-face interviews). These figures describe opinion in one country at given times. They are not evidence of how people elsewhere, or individuals, experienced the event.

P A narrower conclusion holds across all these perspectives: the strands of the homeland came apart at different speeds. Place often remained while polity changed. Memory remained but became contested. **Direction**, the expected future, often had to be rebuilt by each person under uncertainty, whatever their view of the change.

3.2 Yugoslavia

The dissolution of Yugoslavia in 1991–2001 involved wars that displaced two to three million people, according to contemporary estimates. In 2010 UNHCR still counted more than 60,000 refugees and 311,000 internally displaced persons in the region seeking durable solutions (UNHCR, 2010). Here force broke the strand of place, and with it shared expectations of the future that had crossed communities.

3.3 Displacement and migration today

At the end of 2025, 117.8 million people worldwide were forcibly displaced by persecution, conflict, violence or human rights violations (UNHCR, 2026a). UNHCR’s mid-year estimate for the end of June 2026 is 118.2 million (UNHCR, 2026b); the two figures refer to different reporting dates. In 2024 there were 304 million international migrants, that is, people living outside their country of birth (UN DESA, 2025). Their experiences range from forced flight to freely chosen mobility.

3.4 Losing the future without moving

P A person may keep citizenship, residence and physical security and still lose confidence in the future they expected to inhabit. A profession disappears, a life path closes, and the public horizon narrows to managing the present. This experience is not confined to any one political or economic system:

- Mark Fisher described a “slow cancellation of the future” in Western societies (Fisher, 2014).

- Franco Berardi described a generation living after the modern promise that tomorrow will be better (Berardi, 2011).
- Comparable experiences are reported in societies with very different institutions.

This is the third loss in §2. It is the most universal of the five, and it is the loss this paper addresses.

4. Belonging after the knowledge turn

The economy has moved from land to capital, and from capital to knowledge. Belonging has largely remained defined by territory, borders and place of birth. [P] This is not an argument against territorial homelands, which protect people and remain necessary. It observes that one strand, direction, has no form of its own that a person can hold independently of territorial arrangements.

> **Can human consciousness create a meaningful relationship with a future that does not yet exist, independently of present territorial and political arrangements?**

PART II · CONSCIOUSNESS

5. The future inside consciousness

Philosophy has long held that consciousness is not confined to the present:

- **Augustine** described the future as present to us now, as *expectation* (*Confessions*, XI).
- **Husserl** showed that every moment of experience contains *protention*, an anticipation of what is about to come (Husserl, 1928).
- **Heidegger** described existence as *projection* towards possibilities (Heidegger, 1927).
- **Bloch** built a philosophy of the *Not-Yet*: real possibility anticipated in consciousness before it exists in the world (Bloch, 1954–1959).
- **Ricoeur** argued that identity is narrative, told towards an ending not yet reached (Ricoeur, 1990).
- **Bakhtin** insisted on the person's *unfinalisability*: the decisive word about a person is always still to come (Bakhtin, 1963).

P The future is one of the dimensions of consciousness. The question is whether a person's future is chosen or merely undergone.

6. Two research areas of consciousness

Consciousness is the central subject of this project. The word covers two research areas that are related but must be kept apart.

6.1 Area A: reflective and intentional consciousness

Area A is the capacity to imagine possible futures, recognise values, make choices and direct action across time. Psychology and neuroscience study it directly:

- **Prospection.** Representing and evaluating possible futures is a central function of the mind (Seligman, Railton, Baumeister & Sripada, 2013). P/E·B
- **Shared brain network.** Remembering the past and imagining the future draw on a shared core brain network (Schacter, Addis & Buckner, 2007). E·A
- **Foresight.** Mental time travel into the future may be among the defining capacities of the human species (Suddendorf & Corballis, 2007). P/E·B
- **Future self-continuity.** People who feel more connected to their future self tend to make more future-oriented choices (Hershfield, 2011; Hershfield et al., 2011). E·B The finding recurs across many studies, mostly laboratory tasks with hypothetical choices; field evidence is limited.
- **Future collective continuity.** Expecting one's national group to remain similar in the future increased present prosocial considerations in a preregistered experiment (Simić, Sacchi & Perugini, 2025). E·B

- **Mental contrasting.** Imagining a desired future together with present obstacles supports goal attainment. A meta-analysis found a small-to-medium effect, with signs of publication bias (Oettingen, 2012; Wang, Wang & Gai, 2021). E·B

[P] **Area A is the immediate basis of temporal belonging.** It shows that the mind lives partly in the future, that felt connections to the future change present behaviour, and that such connections can be strengthened deliberately. It does not show that temporal belonging, as defined in §7, exists as a distinct phenomenon. That remains to be tested (§16).

6.2 Area B: phenomenal and quantum consciousness

Area B concerns subjective experience itself, the fact that there is something it is like to be a subject, and whether quantum processes contribute to it. It is a serious research horizon of this project and an open question. A separate companion paper, *Quantum Consciousness and Temporal Belonging*, treats it in detail. Here it is enough to separate three kinds of statement.

The state of the science. How experience arises from brain activity remains unsolved. In 2025 a preregistered adversarial collaboration tested two leading classical theories. Its results matched some predictions of each but substantially challenged key tenets of both (Cogitate Consortium, 2025). E·B

Theoretical proposals. Orchestrated objective reduction links consciousness to quantum processes in neuronal microtubules (Hameroff & Penrose, 2014). Other proposals concern nuclear spins (Fisher, M. P. A., 2015) or spin-dependent radical-pair reactions. [T] These are theories. They predict effects, but they are not evidence that quantum processes contribute to experience. Theoretical calculations of rapid decoherence in warm neural tissue argue against them, though the assumptions of those calculations are disputed (Tegmark, 2000). [T]

Experimental evidence.

- An underground experiment ruled out the simplest version of the gravity-related collapse model on which orchestrated objective reduction draws (Donadi et al., 2021). E·B
- Xenon isotopes with nuclear spin were less potent anaesthetics in mice than spin-zero isotopes (Li et al., 2018). E·C
- A microtubule-stabilising drug delayed loss of consciousness under anaesthesia in rats (Khan et al., 2024). E·C

The two animal findings are compatible with quantum accounts but have classical explanations too, and neither has been independently replicated. No experiment has shown that quantum processes contribute to human conscious experience.

The boundary. [P] Temporal belonging depends on Area A, the capacity to imagine, value and choose. That capacity exists whatever the physical basis of experience turns out to be. The programme makes no claim that quantum entanglement physically connects human minds.

7. Temporal belonging, and how it differs from a goal

Definition. [P] *Temporal belonging* is a person's deliberate, felt and enacted relationship of membership with a possible future world. The future does not yet exist. The person counts themselves part of it, and it shapes their values, identity, decisions and present action.

The most important distinction is between temporal belonging and a **goal**. A goal is something a person wants to achieve; temporal belonging is a proposed relationship to a future world. The difference is one of structure, not of importance or duration. Many goals are long-term, open-ended or bound up with identity, and a life goal can be renewed or pursued for decades. Six criteria describe the typical contrast: [P]

CRITERION	GOAL (TYPICAL STRUCTURE)	TEMPORAL BELONGING
Object	A state of affairs to be brought about, often by oneself	A future world, with other people and values, that one counts oneself part of
Relation	Pursuit: an aim to be reached	Membership: a relation to be lived from now on
Satisfaction	Usually defined by success conditions. When they are met, the goal may be completed, renewed or replaced; when they are not, it may be kept, revised or given up	Not defined by success conditions; no single achievement completes it, and it can be held even if that future does not arrive in one's lifetime
Identity	Can be identity-relevant ("becoming a doctor")	Locates the person within a future world ("I belong to that future")
Normativity	Mainly instrumental: actions serve the aim	Expressive as well as instrumental: present acts express loyalty to that future and its values
Revision	Revised or replaced as means and circumstances change	Reinterpreted, as a homeland is, while the relation continues

Long-term ideals and life projects lie closest to temporal belonging. Hypothesis H1 tests where, and whether, the boundary falls.

Temporal belonging also differs from four other ideas:

- **Optimism** is an expectation, not a commitment.
- **Utopia** is a complete picture of a perfect society. Temporal belonging is partial and revisable, and does not claim to be everyone's future.
- **Future self-continuity** has one's own future self as its object.
- **Nostalgia** is longing for a home that no longer exists (Boym, 2001). Temporal belonging is attachment to a home that does not exist *yet*.

[H] Whether this distinction is empirically real is an open question. It remains a philosophical proposition until measurement shows two things: that temporal belonging can be assessed reliably, and that it predicts behaviour beyond goal commitment, optimism and future self-continuity (H1, §16).

7.1 Level zero: four acts

Temporal belonging begins with one person, alone, without any system, group or platform:

1. **Envision** one future to belong to, concretely: a place, a day, the people in it.
2. **Choose**: name its values and its obstacles, honestly (mental contrasting, §6.1).
3. **Anchor**: take one present act that belongs to that future.
4. **Return**: revisit and revise it over time.

The four acts are a proposed practice, not an evidence-based intervention. Protocol P1 is designed to test their effects.

8. A homeland that needs no permission

A homeland that depends on being accepted by others leaves out those who need one most: the person whose country vanished, the refugee, the stateless, the elderly person whose knowledge no one asked for.

[P] A homeland in time begins with a person's own conscious decision. The philosophical foundation holds even when a person is entirely alone, without institutional recognition or community membership. Community can follow as a consequence, never as a precondition. Social forms of shared futures may become later applications, for example circles of people who discover that their futures overlap (§12, L5). They are not the foundation of the concept.

A homeland in time has three properties:

- **It adds and never replaces.** It is added to any homeland a person has. It is not a substitute for legal rights, citizenship, migration procedures, material security or justice.
- **It is voluntary and revocable.** No one is born into it, and no one is bound to it by others.
- **It is not a state.** It has no territory, government, borders or claim to sovereignty.

PART III · THE QUANTUM ERA

9. Three meanings of “quantum”

9.1 Quantum computing and technological change

Quantum computing is moving from laboratory demonstration towards engineering:

- In December 2024 Google reported a processor in which enlarging an error-correcting code reduced the logical error rate (Google Quantum AI, 2025). E·A
- IBM has published a roadmap towards a fault-tolerant system with about 200 logical qubits by 2029 (IBM, 2025).
- In August 2024 NIST published its first post-quantum cryptography standards (NIST, 2024).

The timing and scope of practical advantage remain uncertain. P This paper does not claim that quantum computers will bring about any particular world order. It uses *quantum era* for a period in which new computation, together with advanced artificial intelligence, may change the world model on which institutions and people rely.

9.2 Quantum probability as a model of human judgment

Human judgments sometimes follow quantum probability theory better than classical probability. Wang and colleagues analysed 70 nationally representative surveys conducted in the United States. Reversing the order of two questions changed the answers in the pattern predicted by a quantum-probability identity, the “QQ equality” (Wang, Solloway, Shiffrin & Busemeyer, 2014; see Busemeyer & Bruza, 2012; Pothos & Busemeyer, 2013). E·A

This is a mathematical model of judgment, not a claim about quantum physics in the brain. It suggests that an undecided preference may be best described as a state over possibilities, shaped by the act of being asked. Whether the same holds for judgments about possible futures is untested (H4).

9.3 Quantum-physical hypotheses about consciousness

These hypotheses are the subject of Area B (§6.2). They form an open, contested research horizon, and nothing in the proposal depends on them.

10. Readiness before the machine: an analogy

Industry offers an instructive practice. At a congress on 18 November 2026 the director for quantum technologies of the Russian state corporation Rosatom proposed that industry begin building quantum software now, before a powerful quantum computer exists. Industrial problems would be selected and solved on quantum emulators, which are classical computers simulating quantum ones. Quantum analysts and programmers would be trained in the process, so that industry is ready when industrial

quantum computers arrive, expected in 2030–2035 (Solntseva, 2026). Developing and testing quantum software on classical simulators is common practice in quantum computing generally. The author analysed this strategy in an earlier article (Alber, 2026).

[P] This practice is used here as an **analogy**, not as evidence that consciousness works like a quantum computer. Humanity prepares hardware, software and institutions for new computational capabilities. But future development also depends on people who can imagine, evaluate and consciously choose among alternative futures, and act before certainty arrives. Temporal belonging exercises exactly these capacities. Industries prepare for machines before the machines exist. In the same way, people can prepare their relationship with futures before those futures exist.

UNESCO's work on *futures literacy* supports a narrower point: the capacity to imagine and use the future can be learned and developed (Miller, 2018). [E·B]

11. One present, many futures: what the image means

The project's *temporal field* shows many paths converging in one present and branching into several possible futures. [P] It visualises **a human decision point**: one person's present, from which several futures remain open. It makes no physical claim. In particular, it does not assert a single universal present, which relativity does not provide, and it does not assert that the future physically branches.

12. The Temporal Noosphere

Origins. The noosphere emerged in the early 1920s from an exchange among three thinkers:

- **Vladimir Vernadsky** lectured on biogeochemistry at the Sorbonne in 1922–1923 and grounded the idea of the biosphere in natural science.
- **Pierre Teilhard de Chardin** used the image of a "human sphere" above the biosphere in an essay of the early 1920s.
- **Édouard Le Roy** introduced the term *noosphère* in his Collège de France lectures, published in 1927.

Vernadsky later adopted the concept and developed it as a new state of the biosphere shaped by scientific thought (Le Roy, 1927; Vernadsky, 1945; Teilhard de Chardin, 1955). The concept therefore has several origins and belongs to no single national tradition. Teilhard's development of it was theological; Vernadsky's was scientific. A related idea is Yuri Lotman's *semiosphere*, the space of meaning within which communication is possible (Lotman, 1984).

Proposition. [P/M] The **Temporal Noosphere** extends these ideas into time. It is the proposed model of possible futures that arise from independent conscious agents. At present it is a conceptual and computational research model. It is not an experimentally observed physical field, nor a demonstrated collective consciousness.

LEVEL	NAME	DESCRIPTION
L0	Individual temporal belonging	One person, alone, in relation to a chosen future
L1	Sovereign personal future representation	That future expressed by its person, in their own language, under their control
L2	Interaction among possible futures	Compatibility, conflict and complementarity between representations
L3	Generation of daughter futures	New possibilities proposed from combinations and offered back to the people who hold the parent futures
L4	Plural future space	A map of many futures, never averaged into one
L5	Optional emergent shared belonging	Shared belonging that may arise from overlapping futures; never required

[M] The model represents a person's relation to possible futures as a state over possibilities, using the mathematics of quantum cognition (§9.2). This keeps the model from forcing an early single answer, and lets it test order effects. It is a modelling choice, not a claim about brain physics.

13. MITOSIS: a proposed computational research architecture

Question. Can many independent minds create futures that none of them could create alone, without losing individuality, culture or freedom of choice?

Why it matters. In one controlled experiment, writers using generative AI produced stories that were rated more creative individually but were more similar to each other (Doshi & Hauser, 2024). [E·B] A tool that helps many people imagine the future could narrow the range of futures without anyone deciding it.

Architecture. [M]

1. **Conscious future cells.** Voluntary descriptions of possible futures, values and constraints, held under the control of the person who wrote them.
2. **Interaction field.** Computed relationships between cells: compatibility, conflict and complementarity.
3. **Daughter futures.** New possibilities generated from combinations of independent inputs. They are offered to the authors of the parent cells, who may accept or reject them.
4. **Plurality measurement.** A research metric that evaluates whether the system broadens or narrows the space of futures.
5. **Human authority.** People control their original contributions and decide on all proposals.

From promises to obligations. No software can make absolute promises about deletion, anonymity, diversity or influence. MITOSIS therefore states specific obligations, with how each is implemented and tested, and where its limits lie:

OBLIGATION	IMPLEMENTATION	TEST	LIMITATION
Original cells are changed only by their author	The engine rejects any change to a cell by another actor; proposals are separate objects	Automated test: every write by a non-author is rejected and logged	Protects the stored record, not copies a person shares elsewhere
Every proposal requires a human decision	Daughter futures are created only as *proposed*; acceptance or rejection is an explicit author event	Test: no daughter becomes accepted without an author event	People can still be influenced by what is proposed (see “No steering”)
Withdrawal and deletion	Withdrawal removes the cell from the active store immediately; backups expire on a published schedule	Audit of deletion logs and backup expiry	Copies already accepted, with consent, into another person’s cell remain theirs; deletion from backups is not instantaneous
Pseudonymity	Cells are stored under pseudonymous identifiers; free text is screened for direct identifiers	Re-identification testing by independent reviewers	Free-text descriptions can reveal identity; anonymity cannot be guaranteed
Plurality safeguard	The engine computes a plurality metric before and after each round and withholds proposals that would reduce it below a set threshold	Test on synthetic data; later, a preregistered comparison (P2)	The metric measures diversity of *representations*, not of minds; the choice of metric shapes the result
No steering for external interests	No advertising, no optimisation for engagement or persuasion, no political use; proposal order randomised; every proposal logged with provenance	Independent audit of objectives and logs; tests for systematic drift	Any proposal influences a person somewhat; the obligation is to avoid steering, not all influence
No selection of people	No ranking, scoring or removal of persons or cells by the system	Code review and tests	—

A synthetic-data prototype implements and tests the first, second and fifth obligations. It uses invented example cells only and collects no data from real people. The other obligations are proposed for any future version that involves real participants. Such a version requires a separately approved privacy and consent architecture.

Relation to ARENOMICS MITOSIS. The author’s separate economic simulation, ARENOMICS MITOSIS, shares the name and some architectural principles: autonomous cells, an isolated event bus, a bounded event log, runtime quality controls and the separation of engine from rendering. The

Homeland architecture reuses principles only. It reuses no economic logic, financial data or visual assets, and it explicitly excludes economic selection mechanisms such as culling weak cells.

14. Future capital: human capital in the quantum era

Human capital has been defined as the knowledge, skills and health that make people productive (Becker, 1964). The World Bank's Human Capital Index, for example, measures it through survival, schooling and health (World Bank, 2018).

P As machines take over more computing, writing and optimisation, one capacity becomes scarce: deciding **what is worth computing, writing and optimising**. That means imagining futures, evaluating them and committing to them. This paper calls it **future capital**: the capacity of a person or a society to generate, choose and pursue possible futures. Future capital is proposed as a dimension of human capital. It is not yet a measured quantity.

Three implications follow:

1. **For persons**, temporal belonging is a practice that may build future capital, an asset that no border change can confiscate.
2. **For societies**, many people able to hold and pursue different futures may make a society more resilient to shocks.
3. **For civilisation**, plurality is a design principle. A single optimised future concentrates risk and removes the freedom of those who would choose otherwise. *The future has no single author.*

These are propositions. Measuring future capital, and testing whether temporal belonging increases it, are research tasks for the programme.

PART IV · CRITIQUE AND TEST

15. Objections and replies

1. "This is goal-setting under a grand name." §7 sets out six criteria that describe how belonging typically differs from a goal. H1 tests whether the difference is empirical. If temporal belonging reduces to goal commitment, the hypothesis fails.

2. "It consoles the dispossessed and depoliticises loss." A homeland in time is not a substitute for rights, citizenship, restitution or justice (§2, §8). It addresses the loss of an expected future, which no political settlement automatically restores, and it is compatible with civic engagement.

3. "A homeland without land is not a homeland." The proposal concerns one strand, direction, not the whole homeland. Whether people experience that strand as homeland-like is an empirical question.

4. "Any shared-futures system can become a cult or a manipulation tool." The architecture begins with one person alone. MITOSIS states testable obligations against steering and selection, together with their limits (§13).

5. "Quantum language is hype." The paper separates technology, the mathematics of judgment and consciousness hypotheses, and builds nothing on the third.

6. "The concept is individualist and Western." It starts with the individual because only an individual can choose without permission. The content of a future can be as communal as a person wishes. Testing in six languages is designed to reveal cultural limits.

7. "Some will choose harmful futures." A homeland in time grants no power over others. In MITOSIS, a future that requires harm to others cannot be combined with those others' futures, because both authors' constraints apply. Irreducible conflicts are shown, not averaged away.

8. "States may see dual loyalty." A homeland in time has no territory, government, army or law, and makes no claim on citizenship. It is no more a rival to a state than a vocation is.

9. "The science is cited to dress up a philosophy." The paper marks the status of every claim. Supporting findings make the proposition plausible and testable; they do not prove it.

16. Limits and the research programme

Limits of the proposal. P

- Temporal belonging is a philosophical proposition; whether it is distinct from existing constructs is untested.
- The four acts are a proposed practice, not a validated intervention.
- The Temporal Noosphere is a model, not an observed phenomenon.

- MITOSIS exists only as a synthetic-data prototype; plurality is a research metric, not a guaranteed property.
- Future capital is a concept that has not yet been measured.
- Quantum consciousness is an open horizon on which nothing depends; it is treated in the companion paper.

Hypotheses.

CODE	HYPOTHESIS	HOW IT COULD FAIL
H1	Temporal belonging can be measured reliably and is distinct from goal commitment, optimism and future self-continuity	Unreliable measure; no discriminant validity; no incremental prediction
H2	Temporal belonging predicts future-oriented and prosocial behaviour beyond existing constructs	No incremental prediction in preregistered tests
H3	Compared with ordinary AI assistance, MITOSIS increases the creativity of individual futures without narrowing collective diversity	Diversity narrows, or there is no creative gain
H4	Judgments about possible futures show quantum-probability order effects, across six languages	No order effects, or classical models fit better
H5	Daughter futures accepted by both authors produce stronger commitment than futures formed alone	No difference

Protocols.

- **P1** compares the four acts with active controls (optimism writing, goal setting). It tests H1 and H2.
- **P2** compares MITOSIS with ordinary AI assistance and with working alone. It tests H3 and H5.
- **EX02** applies the QQ-equality test to paired questions about possible futures in six languages. It tests H4.

Conditions. Experiments will begin once protocols, consent and privacy safeguards, and the necessary resources are ready. No date is promised. At the time of writing there are no completed experiments, active participants or institutional partnerships. The programme's principles are preregistration, adults only, separate revocable consent, deletion on request and publication of null results.

17. Conclusion

A homeland of memory can be lost on the map and still be carried. This paper has proposed that a person can also establish, in consciousness, a relationship with a possible future before it exists. That relationship can restore the strand of a homeland that history breaks most often: direction.

The proposal rests on reflective and intentional consciousness, which philosophy has long described and psychology now studies. It keeps the question of phenomenal and quantum consciousness open as a serious horizon, not a premise. It separates the coming quantum era as technology, as a mathematics of judgment and as hypothesis. And it uses *readiness before the machine* as an analogy for human preparation.

The Temporal Noosphere and MITOSIS describe how many futures might coexist and give rise to new ones without being merged. Whether any of this is true is now an empirical question. The programme is designed to answer it, and to report honestly if the answer is no.

> **The homeland of the past needs memory. The homeland of the future needs consciousness.**

Evidence register

CODE	STATEMENT	CATEGORY	STATUS
S-01	Question order changes judgments as quantum-probability models predict (70 US surveys)	Published research	Replicated (Wang et al., 2014)
S-02	Generative AI raises individual creativity but narrows collective diversity	Published research	Single experiment (Doshi & Hauser, 2024)
S-03	Felt continuity with the future self predicts future-oriented choices	Published research	Many studies, mostly laboratory (Hershfield, 2011)
S-04	Expected future group continuity increases present prosocial considerations	Published research	One research line (Simić et al., 2025)
S-05	Mental contrasting supports goal attainment	Published research	Meta-analysis; small-to-medium effect; publication bias (Wang et al., 2021)
S-06	Two leading classical theories of consciousness both substantially challenged	Published research	One preregistered adversarial collaboration (Cogitate, 2025)
S-07	Quantum processes contribute to consciousness	Theoretical proposals	No direct experimental evidence; two unreplicated animal findings compatible with, not specific to, quantum accounts

CODE	STATEMENT	CATEGORY	STATUS
H1–H5	Programme hypotheses	Original hypotheses	Open, testable
M-1	Daughter futures that do not dissolve the originals; plurality safeguard	Model	Synthetic prototype only
X-1	A physical quantum field connecting human minds	Speculative horizon	No evidence; not part of the model

Glossary

ENGLISH	RUSSIAN, PUBLIC	RUSSIAN, TECHNICAL
Homeland in time	Родина во времени	—
Temporal belonging	Принадлежность во времени	Темпоральная принадлежность
Strand of direction	Нить направления	—
Temporal Noosphere	Временная ноосфера	—
Sovereign personal future representation / future cell	Суверенная клетка будущего	Суверенное представление личного будущего
Daughter future	Дочернее будущее	—
Plurality metric	Мера множественности	Метрика плюральности
Future capital	Капитал будущего	—
Readiness before the machine	Готовность прежде машины	—

References

Alber, S. (2026). Kvantstart enne kvantarvutit: kuidas Venemaa kavatseb maailmal eest ära joosta [Quantum start before the quantum computer]. *Faktivalgus*, November 2026. Prior analysis by the author.

Anderson, B. (1983). *Imagined Communities*. London: Verso.

Bakhtin, M. M. (1963). *Problemy poetiki Dostoevskogo* [Problems of Dostoevsky's Poetics], 2nd ed. Moscow. English translation: University of Minnesota Press, 1984.

Becker, G. S. (1964). *Human Capital*. New York: National Bureau of Economic Research / Columbia University Press.

Berardi, F. (2011). *After the Future*. Oakland: AK Press.

Bloch, E. (1954–1959). *Das Prinzip Hoffnung*. Frankfurt am Main: Suhrkamp.

Boym, S. (2001). *The Future of Nostalgia*. New York: Basic Books.

bpb – Bundeszentrale für politische Bildung (n.d.). Russian Federation: Citizenship. Country profile, Migration and Integration.

Brubaker, R. (1996). *Nationalism Reframed*. Cambridge University Press.

Busemeyer, J. R., & Bruza, P. D. (2012). *Quantum Models of Cognition and Decision*. Cambridge University Press.

Cogitate Consortium, Ferrante, O., et al. (2025). Adversarial testing of global neuronal workspace and integrated information theories of consciousness. *Nature*, 642(8066), 133–142.

Donadi, S., Piscicchia, K., Curceanu, C., Diósi, L., Laubenstein, M., & Bassi, A. (2021). Underground test of gravity-related wave function collapse. *Nature Physics*, 17, 74–78.

Doshi, A. R., & Hauser, O. P. (2024). Generative AI enhances individual creativity but reduces the collective diversity of novel content. *Science Advances*, 10(28), eadn5290.

Fisher, M. (2014). *Ghosts of My Life*. Winchester: Zero Books.

Fisher, M. P. A. (2015). Quantum cognition: The possibility of processing with nuclear spins in the brain. *Annals of Physics*, 362, 593–602.

Google Quantum AI and Collaborators (2025). Quantum error correction below the surface code threshold. *Nature*, 638, 920–926.

Hameroff, S., & Penrose, R. (2014). Consciousness in the universe: A review of the "Orch OR" theory. *Physics of Life Reviews*, 11(1), 39–78.

Heidegger, M. (1927). *Sein und Zeit*. Halle: Niemeyer.

Hershfield, H. E. (2011). Future self-continuity: How conceptions of the future self transform intertemporal choice. *Annals of the New York Academy of Sciences*, 1235, 30–43.

Hershfield, H. E., Goldstein, D. G., Sharpe, W. F., Fox, J., Yeykelis, L., Carstensen, L. L., & Bailenson, J. N. (2011). Increasing saving behavior through age-progressed renderings of the future self. *Journal of Marketing Research*, 48(SPL), S23–S37.

Human Rights Watch (1993). *World Report 1993: Estonia, Latvia and Lithuania*.

Husserl, E. (1928). *Vorlesungen zur Phänomenologie des inneren Zeitbewusstseins*. Halle: Niemeyer.

IBM (2025). IBM Quantum roadmap: Starling, a large-scale fault-tolerant quantum computer. Announcement, June 2025.

Khan, S., Huang, Y., Timuçin, D., Bailey, S., Lee, S., Lopes, J., Gaunce, E., Mosberger, J., Zhan, M., Abdelrahman, B., Zeng, X., & Wiest, M. C. (2024). Microtubule-stabilizer epothilone B delays anesthetic-induced unconsciousness in rats. *eNeuro*, 11(8), ENEURO.0291-24.2024.

Levada Center (2021). Nostal'giya po SSSR [Nostalgia for the USSR]. Press release, 24 December 2021, with the time series 1992–2021 for the question "Do you regret the dissolution of the USSR?". Survey of 25 November – 1 December 2021, N = 1,603. levada.ru.

Law of the RSFSR No. 1948-I "On Citizenship of the RSFSR" of 28 November 1991, in force 6 February 1992.

Le Roy, É. (1927). *L'exigence idéaliste et le fait de l'évolution*. Paris: Boivin.

Li, N., Lu, D., Yang, L., et al. (2018). Nuclear spin attenuates the anesthetic potency of xenon isotopes in mice: Implications for the mechanisms of anesthesia and consciousness. *Anesthesiology*, 129(2), 271–277.

Lotman, Yu. M. (1984). O semiosfere [On the semiosphere]. *Trudy po znakovym sistemam*, 17, 5–23.

Miller, R. (Ed.) (2018). *Transforming the Future: Anticipation in the 21st Century*. Paris: UNESCO; London: Routledge.

NIST (2024). FIPS 203, FIPS 204 and FIPS 205. National Institute of Standards and Technology, August 2024.

Oettingen, G. (2012). Future thought and behaviour change. *European Review of Social Psychology*, 23(1), 1–63.

Pothos, E. M., & Busemeyer, J. R. (2013). Can quantum probability provide a new direction for cognitive modeling? *Behavioral and Brain Sciences*, 36(3), 255–274.

Ricoeur, P. (1990). *Soi-même comme un autre*. Paris: Seuil.

Schacter, D. L., Addis, D. R., & Buckner, R. L. (2007). Remembering the past to imagine the future: The prospective brain. *Nature Reviews Neuroscience*, 8, 657–661.

Seligman, M. E. P., Railton, P., Baumeister, R. F., & Sripada, C. (2013). Navigating into the future or driven by the past. *Perspectives on Psychological Science*, 8(2), 119–141.

Solntseva, E. (2026). Statement at the congress "Innovative Practice: Science plus Business", Moscow, 18 November 2026. Rosatom press release published 20 November 2026; reported in: Rosatom proposed to start creating sovereign industrial quantum software. *ComNews*, 20 November 2026.

Simić, A., Sacchi, S., & Perugini, M. (2025). Our ways will not change: Future collective continuity increases present prosocial considerations. *British Journal of Social Psychology*, 64(1), e12847.

Suddendorf, T., & Corballis, M. C. (2007). The evolution of foresight: What is mental time travel, and is it unique to humans? *Behavioral and Brain Sciences*, 30(3), 299–313.

Sushchiy, S. Ya. The Russian population of the near abroad: Geodemographic dynamics of the post-Soviet period. *Demographic Review* (HSE University).

Tegmark, M. (2000). Importance of quantum decoherence in brain processes. *Physical Review E*, 61(4), 4194–4206.

Teilhard de Chardin, P. (1955). *Le Phénomène humain*. Paris: Seuil.

UN DESA (2025). *International Migrant Stock 2024: Key facts and figures*. UN DESA/POP/2024/DC/NO. 13.

UNHCR (2010). UNHCR appeals to governments in South-Eastern Europe to accelerate durable solutions for 60,000 refugees and 311,000 internally displaced.

UNHCR (2026a). *Global Trends: Forced Displacement in 2025*. Geneva, June 2026.

UNHCR (2026b). *Mid-Year Trends 2026* (figures as at 30 June 2026). Geneva, 2026.

USSR State Committee for Statistics (1989). *All-Union Population Census 1989*. Total population 286,730,819.

Vernadsky, V. I. (1945). The biosphere and the noosphere. *American Scientist*, 33(1), 1–12.

Wang, G., Wang, Y., & Gai, X. (2021). A meta-analysis of the effects of mental contrasting with implementation intentions on goal attainment. *Frontiers in Psychology*, 12, 565202.

Wang, Z., Solloway, T., Shiffrin, R. M., & Busemeyer, J. R. (2014). Context effects produced by question orders reveal quantum nature of human judgments. *Proceedings of the National Academy of Sciences*, 111(26), 9431–9436.

Weil, S. (1949). *L'Enracinement*. Paris: Gallimard.

World Bank (2018). *The Human Capital Project*. Washington, DC: World Bank.

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