The Citizen as Bayesian Agent SWARP's Personal Political Profile, Its Theoretical Foundations, and Its Trajectory

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Abstract

Liberal democracy is facing a structural legitimacy crisis that is, at its core, an information-architecture problem. Citizens hold multidimensional, partly tacit value configurations that existing representational instruments — the manifesto, the periodic election, the parliamentary debate — are incapable of capturing or translating. This paper introduces SWARP's Personal Political Profile (PPP) as a principled response to that translation failure. Drawing on five converging theoretical traditions — the author's Political Expectation Failure Theory (PEFT), the Fractal Karma model of birth-fixed cognitive structure, Karl Friston's Free Energy Principle, Alan Page Fiske's Relational Models Theory, and Arthur Koestler's holonic ontology — the PPP models each citizen as a Bayesian inference engine whose political preferences are expressed as a probability distribution over valued governance outcomes. The same distributional representation is applied to every elected body across four Dutch administrative layers, and cosine similarity in Fiske-vector space is used to compute, in real time, which factions and agenda items minimise each citizen's variational free energy. We describe the current implementation, its near-horizon extensions into coalition simulation and counterfactual policy assessment, and its longer-horizon integration with Solid-based data sovereignty and Spatial Web infrastructure. The central thesis is threefold: first, that the crisis of liberal democracy is a structural condition of institutionalised expectation failure without cognitive closure; second, that individual failure modes are not random but are encoded in a birth-fixed cognitive quaternion that recurs self-similarly from the personal to the political scale; and third, that restoring the experience of political belonging requires a shared information architecture precise enough to make the mismatch between citizen and representative legible, measurable, and actionable.

1. The Translation Problem

Across the Western political landscape, the distance between citizens and the bodies that represent them has widened from inconvenience to legitimacy crisis. Voters describe their parliaments in the vocabulary of theatre and distance; representatives describe their constituents in the vocabulary of segments and sentiment. This mutual opacity is not primarily a moral failure. It is a failure of representational resolution — and, beneath that, a failure of cognitive closure that operates at every scale from the individual voter to the civilisational.

The classical instruments of democratic representation were calibrated for conditions that no longer obtain. The party manifesto assumed an electorate sufficiently homogeneous to share a relational grammar; the periodic election assumed preferences stable enough to survive a four-year lag; the parliamentary debate assumed a public sphere small enough to be legible to the participants. None of those assumptions holds in a society of multiple overlapping administrative layers, continuous information flow, and irreducibly plural values.

What remains is an enormous translation problem with two faces. From the citizen's side: how does a person, whose values are typically multidimensional and partly tacit, find the political body whose values most closely resemble her own — not once at election time, but continuously, across the four administrative layers that actually govern her daily life? From the representative's side: how does an elected official understand the aggregate preferences of her constituents, beyond the distorted signal of opinion polling?

SWARP's Personal Political Profile (PPP) is one principled answer to that double translation problem. The ambition of this paper is to make explicit the theoretical commitments that shape the PPP's design, to describe the implementation as it stands, and to trace the trajectory along which that implementation is being extended.

2. Theoretical Foundations

2.1 Political Expectation Failure Theory: The Structural Diagnosis

Before describing what SWARP's PPP does, it is necessary to specify the condition it is designed to treat. Political Expectation Failure Theory (PEFT), developed by the present author (Konstapel, 2026a), synthesises Roger Schank's cognitive script theory, Catherine de Vries's empirical programme on political dissatisfaction, and panarchy theory from complexity science into a unified account of why modern democracies are structurally incapable of learning from their own failures.

Citizens approach political life not as blank slates but as inference engines carrying dense, historically accumulated cognitive structures — what Schank and Abelson (1977) called *scripts*: stereotyped event sequences encoding what *should* happen in familiar contexts. In the political domain, these scripts operate at three nested levels: *procedural scripts* (elections should be fair, promises honoured), *performance scripts* (economic growth should improve living standards), and *relational scripts* — the deepest level, defining the compact between citizen and state.

When performance deviates from script, a healthy cognitive system follows Schank's repair sequence: *expectation → failure → explanation → reminding → generalisation → revised script*. The revised script is more accurate; the agent learns. This is closure.

In modern democratic systems, this sequence is systematically truncated. PEFT identifies a four-phase cycle that replaces learning with reproduction:

1. **Expectation Construction**: electoral promises and media framing establish the scripts against which performance will be judged.
2. **Performance Deviation**: governance inevitably falls short of constructed expectations, whether objectively or perceptually.
3. **Failure Exploitation**: political entrepreneurs identify the expectation gap and amplify it rather than resolving it, constructing new and equally unachievable expectations (De Vries & Hobolt, 2020).
4. **Non-Resolution**: new actors gain power on a platform of resolving failure but reproduce the same structural dynamic; the cycle returns to phase one.

Four structural factors prevent the sequence from completing: *incentive misalignment* (political actors gain electorally from exploiting failure, not resolving it); *temporal mismatch* (short electoral cycles vs. long policy timescales); *cognitive asymmetry* (citizens hold implicit scripts but lack instruments to make them explicit); and *institutional rigidity* (constitutional frameworks designed for stability actively resist the rapid adaptation that learning demands).

The panarchy model (Gunderson & Holling, 2002) illuminates the systemic consequence: democratic systems experiencing chronic expectation failure are trapped in a pathological variant of the adaptive cycle in which the release phase (populist breakthrough, electoral disruption) occurs regularly, but the reorganisation phase fails. The system returns to conservation with a new cast, only to accumulate fresh failures until the next inevitable release.

The implication for design is direct: the path forward requires *citizen-level cognitive instruments* that make political scripts explicit, testable against reality, and revisable in light of experience. SWARP's PPP is precisely such an instrument.

2.2 Fractal Karma: The Birth-Fixed Topology of Failure

PEFT establishes that democratic systems fail to achieve closure. The Fractal Karma model (Konstapel, 2026b) answers a deeper question: *why do specific individuals, organisations, and political cultures fail in characteristically different ways?* The answer is that failure mode is not random but structurally determined — encoded in a fixed cognitive quaternion that recurs self-similarly from the personal to the political scale.

The model's foundation is the Fundamental Fractal: the principle that a single, self-similar ordering principle generates reality across 19 layers, from the quantum vacuum to planetary consciousness. Human cognition is a localised expression of this universal pattern, and its structure is formalised via McWhinney's (1997) four irreducible worldviews, treated in SWARP as the basis of a normalised unit quaternion:

$$\mathbf{q}_{\mathrm{PoC}} = w_B\cdot\mathbf{1} + w_R\cdot\mathbf{i} + w_G\cdot\mathbf{j} + w_Y\cdot\mathbf{k}, \quad |\mathbf{q}_{\mathrm{PoC}}| = 1$$

where Blue (Unitary) weights institutional integrity and rule-adherence; Red (Sensory) weights direct physical and financial feedback; Green (Social) weights relational consensus; and Yellow (Mythic) weights narrative coherence and visionary framing. These four components map directly onto the four sub-processes of Schank's Case-Based Reasoning cycle, so that the dominant component of an individual's PoC quaternion determines the precise point in the learning cycle where their scripts are most likely to fail.

Individual specificity enters through Human Design (HD): a system that derives a detailed bio-energetic chart from exact birth data. SWARP treats the HD chart not as a personality profile but as a structural coordinate — a set of components (Type, Profile, defined Centres, Channels, Incarnation Cross) that fix the weights of the individual's PoC quaternion at birth. The resulting quaternion is immutable throughout life. Its dominant component determines the failure topology:

- A **Blue-dominant** individual systematically fails by adhering to outdated scripts too long, producing institutional or systemic breakdown.
- A **Yellow-dominant** individual fails by cycling through inspired action and structural collapse, unable to revise the core narrative that generates the vision.
- A **Green-dominant** individual fails at the retrieval step — the organisation repeatedly neglects to apply lessons from its own case history, and the same relational impasse recurs.
- A **Red-dominant** individual preempts the cycle through force, externalising failure when it occurs, preventing script revision by refusing to register vulnerability.

The critical claim is that this failure topology is *fractally self-similar*: the same quaternion pattern recurs at every scale of organisation. A Green-dominant leader will not only struggle with relational dynamics in her personal life — her organisation will also repeatedly fail to retrieve and apply relevant prior cases from its institutional history, and she will witness the same political stalemates

in the broader society she inhabits. Karma, in this model, is not metaphysical but mathematical: the deterministic recurrence of the dominant failure mode encoded in the birth-time quaternion.

The Enneagram, mapped onto this framework, supplies the *mechanism of avoidance* — the defensive strategies that prevent the CBR cycle from completing. Each Enneagram type corresponds to a characteristic intervention point:

- **Type 1 and Type 5 (Blue-dominant)** intervene at the retrieval step: the first by intensifying the existing script rather than revising it (more rules, more rigour); the second by accumulating knowledge as a buffer against deployment.
- **Type 3 and Type 4 (Yellow-dominant)** intervene at the revision step: the first by revising the narrative without revising the underlying structure; the second by aestheticising failure and thereby converting it into identity rather than learning.
- **Types 2, 6, and 9 (Green-dominant)** prevent the failure from being registered as one's own, ensuring it is attributed to others' ingratitude, authority's unreliability, or the absence of strong expectations.
- **Type 8 (Red-dominant)** short-circuits the cycle at the expectation step, preempting failure through projected force.

This taxonomy transforms the Enneagram from a self-help instrument into a diagnostic map of the avoidance architectures that sustain PEFT's non-resolution phase. Political disillusionment is not merely a systemic phenomenon; it is also the aggregate expression of millions of individuals whose characteristic defensive structures prevent them from registering, explaining, and revising their political scripts.

From individual karma to political culture. The fractal self-similarity of the failure topology means that political cultures, like individuals, have a dominant worldview and a characteristic failure mode:

- A **Blue/Unitary political culture** (strong institutions, rule of law) falls to *institutional breakdown*; its defensive reflex is to add more procedure and oversight, refusing to revise the script that legitimate process alone guarantees legitimate outcomes.
- A **Red/Sensory political culture** (executive action, market primacy) falls to *impulsive over-commitment*; its defensive reflex is to double down, attributing failure to insufficient will rather than misdirected action.
- A **Green/Social political culture** (consensus, inclusion) falls to *political impasse*; its defensive reflex is to maintain harmony, avoiding final decisions and honest trade-offs, drifting toward fragmentation.
- A **Yellow/Mythic political culture** (visionary narrative, populist myth) falls to *core narrative non-revision*; its defensive reflex is to absorb all failures into the founding myth as tests or betrayals, intensifying demands on reality rather than revising its model of it.

The PPP is designed to operate at all four levels of this fractal: individual, organisational, municipal, and national. The AYYA360 subsystem, which derives the citizen's PoC quaternion from her Human Design chart, makes the individual failure topology visible. The Fiske vector maps the relational consequences of that topology onto the political landscape. And the aggregate Fiske distribution of a neighbourhood or municipality reveals the dominant political-culture failure mode of that community — making it possible, for the first time, to design governance interventions calibrated to the specific avoidance architecture of the community being governed.

2.3 The Free Energy Principle and the Citizen as Bayesian Agent

The Free Energy Principle (FEP), as formulated by Karl Friston (2010), specifies that any system maintaining its structural integrity over time must be minimising *variational free energy*: a

computable upper bound on the surprise that its sensory states would register if its internal model were correct. Applied to the political domain, this re-frames the voter as an *inference engine* that maintains a generative model of "what good governance feels like" and updates that model whenever new evidence arrives.

This framing is directly complementary to both PEFT and the Fractal Karma model. The citizen who experiences political expectation failure is, in FEP terms, a system whose free energy is chronically elevated: her generative model predicts a governance outcome that the political environment consistently fails to produce. The specific character of that mismatch — which dimension of governance produces the most surprise — is determined by her PoC quaternion: a Blue-dominant citizen will register maximum free energy when institutional integrity is violated; a Green-dominant citizen when relational consensus is overridden by unilateral decision. The PPP makes this free-energy topology measurable and identifies which political bodies would lower it.

The extension into *Active Inference* (Friston et al., 2017) adds the dimension of action: the citizen acts on the world in ways calculated to produce the observations her model predicts. Political engagement — signing an initiative, attending a council meeting, writing to a faction — is free-energy minimising behaviour. The PPP lowers the activation energy of exactly these actions by identifying, for each citizen, which political bodies and which agenda items are most likely to confirm rather than disconfirm her generative model.

2.4 Relational Models Theory and the Fiske Vector

Alan Page Fiske's Relational Models Theory (RMT) proposes that human beings coordinate through exactly four elementary relational modes (Fiske, 1992): **Communal Sharing (CS)** — the logic of collective identity; **Authority Ranking (AR)** — the logic of legitimate hierarchy; **Equality Matching (EM)** — the logic of balanced reciprocity; and **Market Pricing (MP)** — the logic of ratio and exchange. All higher-order political ideologies are weighted combinations of these primitives.

RMT provides the natural language for the political scripts identified by PEFT and the Fractal Karma model. A Blue-dominant citizen whose scripts are organised around institutional integrity will typically carry a high AR weight — she expects that legitimate hierarchy will deliver coherent outcomes, and she experiences maximum script violation when authority is used arbitrarily or incoherently. A Green-dominant citizen will carry a high CS weight — she expects that collective solidarity will produce shared decisions, and she experiences maximum script violation when market logic (MP) is applied to resources she regards as commons. The Fiske vector thus operationalises the relational content of each citizen's political scripts in a form that can be compared to the relational signature of actual governance decisions and party programmes.

By projecting both citizens and political parties onto a four-dimensional Fiske vector — normalised weights (CS, AR, EM, MP) — SWARP replaces the impoverished left–right axis with a space rich enough to distinguish, for example, a Christian-democratic CS-AR profile from a libertarian MP-EM profile even when both label themselves "centrist." The choice of cosine similarity over Euclidean distance is deliberate: it captures the *angle* between vectors — the qualitative orientation of the value bundle — rather than the *magnitude*, which is a secondary signal.

2.5 Holonic Ontology and Fractal Scalability

Arthur Koestler's holonic ontology (1967) provides the structural principle that ties the preceding frameworks together across administrative scales. A *holon* is simultaneously a whole — a coherent system bounded by a Markov blanket — and a part of a higher-order system. Political organisation

is holarchical in exactly this sense: citizen, neighbourhood, municipality, province, nation, and European body form a nested hierarchy, each with its own coherence dynamics and its own expectation ecology.

The Fractal Karma model's claim that failure topologies recur self-similarly across scales is, in Koestler's vocabulary, a claim about the holarchical propagation of quaternion structure: the same PoC weights that determine an individual's failure mode aggregate upward to determine the failure mode of the community, the municipality, and the political culture. This is not a metaphor but a structural consequence of fractal self-similarity. The PPP's four-layer architecture directly implements this holarchy, representing the citizen's generative model at each administrative level with a confidence weight that reflects her actual epistemic reach at that level.

3. Implementation

3.1 The Profile Record

The Personal Political Profile is implemented as a four-layer record in the `kern.*` shadow schema of the SWARP database. Each layer contains: a Fiske quartet (CS, AR, EM, MP) with normalised weights derived from the citizen's annotation history and behavioural trace; a scalar confidence weight (0–1) derived from the number of annotated issues and the clustering consistency of those annotations; and a timestamp and version counter enabling longitudinal drift analysis.

Profiles can be built interactively, through a structured questionnaire that presents policy vignettes and elicits relational-mode attributions, or passively inferred from the citizen's behaviour within SWARP. The two pathways are not mutually exclusive; the passive inference pathway acts as a continuous Bayesian update on the prior established by the interactive questionnaire.

The inverse-match algorithm produces, for each administrative layer, a ranked list of political factions whose Fiske scores have the smallest cosine angle to the citizen's vector. Critically, the algorithm incorporates the citizen's AYYA Personal Operating Code (POC) prior — derived from her Human Design chart and encoding her dominant PoC quaternion component. This prior does two things simultaneously: it reflects her developmental life-phase, so that the recommendation respects her lifespan position; and it flags her characteristic failure topology, so that the matching algorithm can surface political bodies whose governance style is least likely to trigger her specific avoidance architecture. A Blue-dominant citizen who characteristically fails by clinging to outdated scripts is best served by political bodies with a track record of institutional adaptation rather than rigidity, even when both score similarly on the Fiske AR dimension.

3.2 Civic Applications Currently Live

The Initiative Fiske Classifier uses a large language model in JSON-mode to assign each citizen-submitted initiative its own Fiske quartet, surfacing the public initiatives that resonate with her relational signature, scoped to her municipality or the country as a whole. In PEFT terms, this is a *script alignment* service that lowers the cognitive cost of civic participation by filtering political noise through the citizen's generative model.

The Initiative-to-Faction Match Feed performs the symmetric inverse: given a published initiative, it returns the five factions whose vectors best align, the optimal two-party coalition, and a one-click pathway to compose and send a verified email to a council member. This partially disintermediates the political entrepreneur — the citizen no longer needs an entrepreneur to identify

the expectation gap and name a villain; she can identify directly which political body aligns with her script and act on that alignment.

The ORI Real-Time Agenda Monitor pulls official decision documents, motions, and meeting agendas from Dutch municipalities via the Open Council Information API, classifies each item with a Fiske quartet, and surfaces those that are imminent and relevant to the citizen, with two explicit calls to action: attend the meeting, or write to a faction.

Several architectural decisions warrant explicit statement:

- **Mail sovereignty**: council members' email addresses never leave the server; every outbound message is logged in the SWARP agora as a record of public deliberation.
- **Economic metering**: AI classification calls are metered through the platform's Seeds economy, rendering computational cost visible without making it prohibitive.
- **Internationalisation**: all user-interface text is available in Dutch, English, German, French, and Spanish. The body of emails to council members remains Dutch; the apparatus around it is multilingual.
- **Epistemic symmetry**: a faction or council member can see the *aggregate* Fiske distribution of citizens who have engaged with her file, without ever seeing personal identities. In Fractal Karma terms, this gives the representative access to the dominant relational script of her constituency — and with it, the failure topology she is most likely to trigger if she governs against that script.

4. Near-Horizon Extensions

4.1 Coalition Simulation

Given a council whose factional Fiske scores are known, the system can compute which coalitions maximise vector coherence and which introduce the largest internal contradictions. In PEFT terms, coalition simulation makes visible the structural expectation mismatches that are typically invisible until they produce a governance failure. In Fractal Karma terms, it diagnoses the combined failure topology of a proposed coalition: a Blue-dominant party combined with a Red-dominant party is not merely "ideologically diverse" — it places two characteristic avoidance architectures (rigid script adherence vs. force-based preemption) in direct coordination, and predicts the failure mode that will emerge under resource-allocation pressure with considerable precision.

4.2 Counterfactual Policy Assessment

With each agenda item carrying a Fiske vector and each citizen carrying her own, the platform can estimate the aggregated free-energy effect of a proposed decision on the relational signature of the local population. A proposed zoning decision that strongly weights MP in a neighbourhood whose aggregate profile is CS-dominant introduces a measurable relational mismatch — one that, in Fractal Karma terms, corresponds to a Yellow-narrative violation for CS-dominant citizens who understand the neighbourhood as a shared commons. Counterfactual policy assessment gives citizens the language to translate "this feels wrong" into a Fiske-vector divergence score, directly addressing PEFT's cognitive asymmetry inhibitor.

4.3 Temporal Drift and Life-Phase Tracking

The AYYA360 lifespan-guidance subsystem allows a citizen's political profile to be tracked across decades. Drift in her Fiske signature can be explained — and anticipated — in terms of life-phase

transitions: a citizen moving from an expansive life phase toward a consolidating one predictably shifts weight from MP and Yellow toward AR and Blue, not because she has been politically manipulated but because her quaternion's expression changes with developmental phase. The Enneagram mapping adds a further layer: her defensive avoidance strategies evolve across the lifespan, and a longitudinal profile can detect when a previously latent avoidance architecture becomes dominant, signalling the need for a recalibrated political match before disillusionment sets in.

5. Longer-Horizon Architecture

Data sovereignty via Solid: a Pod-resident profile means that the citizen's accumulated script history — the record of how her expectations have been met or violated, which is the raw material from which closure is constructed — survives platform migration and becomes a portable instrument of civic identity.

Verifiable civic credentials via the Spatial Web: the HSTP substrate allows the PPP to act as the citizen's verifiable credential in any compliant deliberative body, anywhere on the network. The PoC quaternion and Fiske vector travel with the citizen across jurisdictions.

Planetary coordination: the Octonion-cosmology layer of SWARP provides the formal account of why the same fractal primitives — Fiske vector, PoC quaternion, Markov blanket, holon, coherence metric — should recur at every scale from the individual citizen to a planetary deliberative body. The four political-culture failure modes identified in the Fractal Karma model (institutional breakdown, impulsive over-commitment, political impasse, narrative non-revision) are not confined to Dutch municipalities; they are the characteristic failure modes of any holarchical governance system at any scale. The PPP's architecture is therefore a universal template, not a local instrument.

6. Discussion: SWARP as a Closure Machine

The Personal Political Profile is neither a polling instrument nor a recommender system.

It is not a polling instrument because it operates upstream of preference, at the level of the cognitive scripts from which preferences are derived. A system that measures only preferences cannot diagnose the expectation architecture that generates them, and therefore cannot provide closure.

It is not a recommender system because it does not optimise for engagement, attention, or platform retention. It optimises for the reduction of mismatch between the citizen's generative model and the observable behaviour of the political system — the inverse of the dynamic that drives social-media political information environments, where the engagement incentive maximises free energy (surprise, outrage, novelty) rather than minimising it.

What the PPP is, synthesising the five theoretical traditions described above, is a *closure machine*: an instrument that restores the missing step in the political repair sequence at every scale at which it operates. At the individual level, it makes the citizen's implicit political scripts explicit and testable, providing the Schankian explanation and reminding that the PEFT cycle truncates. At the community level, it makes the aggregate failure topology of a neighbourhood visible, enabling governance to be calibrated to the specific avoidance architecture of the community rather than to a generic political segment. At the institutional level, the epistemic-symmetry architecture returns to the representative the aggregate signal she needs to revise her own governing script. At the

civilisational level, the coalition simulation and counterfactual policy assessment modules provide the structural diagnosis needed to distinguish coalitions and policies that will complete the adaptive cycle from those that will reproduce the pathological variant.

The underlying claim is modest in form and ambitious in consequence: the crisis of liberal democracy is, in part, an information-architecture problem. An architecture that is Bayesian, relational, fractal, decentralised, and multilingual — and that is grounded in a precise account of how specific failure modes are encoded, transmitted, and defended across scales — can restore the experience of political belonging without requiring any citizen to surrender her individuality. SWARP is one such architecture, the PPP is its currently visible surface, and the trajectory described in this paper is a single continuous design intention aimed at a single missing mechanism: the restoration of closure.

Annotated Reference List

Konstapel, H. (2026a). Political Expectation Failure Theory: A New Lens on Democracy. Constable Research B.V. / constable.blog, 28 March 2026. The primary statement of PEFT. Synthesises Schank's script theory, De Vries's empirical programme, and panarchy theory into a unified account of why modern democracies are structurally incapable of learning from their own failures. The four-phase cycle and the identification of *closure* as the missing mechanism are the concepts that SWARP's PPP is designed to operationalise.

Konstapel, H. (2026b). Born into Your Failures: Expectation Failure as Fractal Karma in the SWARP Model. Constable Research B.V. / constable.blog, 1 April 2026. Extends PEFT from the systemic to the individual and cross-scale levels. Introduces the PoC quaternion as a birth-fixed cognitive coordinate encoding the dominant failure mode, maps the four worldview components onto Schank's CBR sub-processes, and establishes the fractal self-similarity of failure topology from personal development to democratic governance. Essential for understanding why the PPP's AYYA360 prior is not merely a lifespan-phase adjustment but a failure-topology filter. Contains the Enneagram mapping that specifies the defensive avoidance architectures sustaining PEFT's non-resolution phase, and the four political-culture failure-mode typology (Blue/institutional breakdown; Red/impulsive over-commitment; Green/political impasse; Yellow/narrative non-revision).

Schank, R. C., & Abelson, R. P. (1977). *Scripts, Plans, Goals, and Understanding*. Lawrence Erlbaum. Foundational for both PEFT and the Fractal Karma model. Defines scripts as the mental structures that organise human comprehension and action, and establishes failure as the engine of cognitive learning. PEFT's non-resolution and the Fractal Karma model's failure-mode taxonomy are both defined by the systematic absence of the Schank-Abelson repair sequence.

Schank, R. C. (1982). *Dynamic Memory: A Theory of Reminding and Learning in Computers and People*. Cambridge University Press. Specifies the CBR cycle (expectation → failure → retrieval → revision) onto which SWARP maps the four PoC worldviews. The dominant PoC component determines which sub-process of the CBR cycle is most vulnerable to breakdown. Longitudinal profile and temporal drift analysis implement, at the political level, the dynamic memory architecture Schank describes at the cognitive level.

Schank, R. C. (1990). *Tell Me a Story: Narrative and Intelligence*. Northwestern University Press. Foundational for SWARP's STORY FORMAT and JIT learning architecture. The PPP presents its findings not as a score but as a narrative of fit and mismatch that the citizen can

recognise from her own political experience — the implementation of Schank's insight that human cognition is indexed by story, not by rule.

De Vries, C. E. (2018). ***Euroscepticism and the Future of European Integration*****. Oxford University Press.** Establishes the benchmark theory of EU public opinion: citizens evaluate the EU against scripts derived from domestic political experience, generating script failure and withdrawal of support. Core empirical grounding for PEFT and, by extension, for the PPP's use of comparative matching metrics.

De Vries, C. E., & Hobolt, S. B. (2020). ***Political Entrepreneurs: The Rise of Challenger Parties in Europe*****. Princeton University Press.** Introduces political entrepreneurs as the agents who convert phase 2 (performance deviation) into phase 3 (failure exploitation) rather than triggering learning. The PPP's Initiative-to-Faction Match Feed partially disintermediates the entrepreneur by giving citizens direct access to relational alignment information.

De Vries, C. E. (2026, forthcoming). ***Symfonie van Onvrede*****. Amsterdam University Press.** Conceptualises the rise of the radical right as the cumulative endpoint of decades of unresolved expectation failure — the Yellow/Mythic narrative non-revision failure mode at civilisational scale. Provides the most recent empirical anchoring for PEFT's claim that non-resolution is structural.

Cremaschi, S., Inglehart, R., & De Vries, C. E. (2024). Geographies of discontent. ***European Journal of Political Research*****, advance online publication.** Documents the spatial and social clustering of political dissatisfaction. Directly relevant to SWARP's municipality-level implementation: the aggregate Fiske distribution of a neighbourhood may be systematically misrepresented by the national Fiske profile of the parties governing it, producing a geographically localised expectation failure with a specific failure-topology signature.

Gunderson, L. H., & Holling, C. S. (Eds.). (2002). ***Panarchy: Understanding Transformations in Human and Natural Systems*****. Island Press.** Source text for panarchy theory. PEFT uses the adaptive cycle to explain democratic instability as a pathological cycle in which the reorganisation phase consistently fails. Coalition simulation can be understood as a tool for identifying which coalition configurations have the internal Fiske coherence to complete the reorganisation phase after a political release event. The four political-culture failure modes in the Fractal Karma model map directly onto the K-phase rigidity that precedes panarchic collapse.

McWhinney, W. (1997). ***Paths of Change: Strategic Choices for Organizations and Society*****. Sage.** Source of the four-worldview model (Unitary/Blue, Sensory/Red, Social/Green, Mythic/Yellow) that forms the basis of the PoC quaternion. McWhinney's argument that most organisational failures arise from the dominance of one worldview at the expense of others is the organisational-scale expression of the Fractal Karma principle. Pairs naturally with Fiske's four relational modes as their complement on the change-method axis.

Ra Uru Hu. (1992). ***The Human Design System*****. Jovian Archive.** Primary source for the Human Design system. SWARP treats the structural components of the HD chart (Type, Profile, defined Centres, Channels, Incarnation Cross) not as esoteric categories but as the raw input data from which the individual's immutable PoC quaternion is derived. The HD Type constrains the *domain* of failure; the HD Profile dictates the *narrative form* of that failure.

Holland, J. L. (1997). ***Making Vocational Choices: A Theory of Vocational Personalities and Work Environments*** **(3rd ed.). Psychological Assessment Resources.** Provides the six-dimensional RIASEC typology used by SWARP to translate the PoC quaternion into concrete occupational recommendations via cosine-matching against the O*NET database. In the Fractal Karma model, vocation and karma are two sides of the same quaternion coordinate: the optimal

occupation generates the *correct* sequence of failures necessary for the individual's CBR cycle to complete.

Peterson, N. G., et al. (2001). Understanding work using the Occupational Information Network (O*NET). *Personnel Psychology*, 54(2), 451–492. Describes the O*NET database against which SWARP's RIASEC vector is cosine-matched to generate vocational recommendations. Links the abstract failure-topology model to tangible career paths.

Naranjo, C. (1994). *Character and Neurosis: An Integrative View*. Gateways/IDHHB. The most clinically rigorous grounding of the Enneagram in characterology. Naranjo's connections to Reich, Horney, and the DSM provide the most defensible scientific foundation for the system's use in the Fractal Karma model as a taxonomy of defensive avoidance architectures sustaining PEFT's non-resolution phase.

Friston, K. (2010). The free-energy principle: a unified brain theory? *Nature Reviews Neuroscience*, 11(2), 127–138. Canonical statement of the FEP. SWARP's conception of the citizen as a Bayesian agent, and of political mismatch as measurable free energy, derives directly from this paper. The specific character of the free-energy elevation — which dimension of governance produces the most surprise — is determined by the citizen's PoC quaternion, connecting the FEP formally to the Fractal Karma model.

Friston, K., FitzGerald, T., Rigoli, F., Schwartenbeck, P., & Pezzulo, G. (2017). Active Inference: A Process Theory. *Neural Computation*, 29(1), 1–49. Extends the FEP from perception to action. Provides the formal basis for treating initiative-signing and council-attendance as epistemic acts — free-energy minimising behaviour that the PPP lowers the activation energy for.

Friston, K., Ramstead, M. J. D., Kiefer, A. B., et al. (2023). Designing Ecosystems of Intelligence from First Principles. *Collective Intelligence*, 2(1). Extends Active Inference to multi-agent and institutional settings. The aggregate Fiske signal flowing from citizens to representatives is, in this framework, a form of collective active inference by which the represented system acts on its representing system — the epistemic-symmetry architecture in formal terms.

Fiske, A. P. (1992). The four elementary forms of sociality. *Psychological Review*, 99(4), 689–723. Foundational paper for RMT. The CS-AR-EM-MP quartet operationalises the relational content of citizens' political scripts: a CS-dominant citizen experiences a governance decision that imposes MP logic as a relational violation — a script failure in Schank's terms — not merely a policy disagreement.

Fiske, A. P. (1991). *Structures of Social Life*. Free Press. Full ethnographic elaboration of RMT. Essential for understanding why the four modes are claimed to be universal primitives rather than Western cultural categories — relevant to SWARP's cross-national ambitions.

Koestler, A. (1967). *The Ghost in the Machine*. Hutchinson. Introduces the holon concept. The fractal self-similarity of the PoC quaternion across administrative scales — individual, community, municipality, nation — is, in Koestler's vocabulary, a holarchical propagation of quaternion structure. The holarchical frame also explains one of PEFT's structural inhibitors: each administrative level constitutes a Markov blanket that resists propagation of expectation failure upward.

Rowlands, P. (2007). *Zero to Infinity: The Foundations of Physics*. World Scientific. The nilpotent algebraic framework underlying SWARP's deeper theoretical architecture. Rowlands demonstrates that the four fundamental parameters of physics generate a nilpotent operator algebra mirroring, at the level of physical law, the quaternion structure that SWARP employs at the level of

relational sociology and cognitive structure. The parallel motivates the claim that failure topology is not a sociological convenience but a physical necessity.

Berners-Lee, T. & the Solid team. ***Solid: A Platform for Linked Data Applications*** **(ongoing). https://solidproject.org** Reference architecture for citizen-owned data. A Pod-resident profile satisfies the GDPR right to data portability and, in Fractal Karma terms, ensures that the citizen's accumulated script history — the raw material of closure — is portable and persistent.

Inrupt & W3C Solid Community Group. ***Solid Protocol*** **(W3C Editor's Draft). https://solidproject.org/TR/protocol** Protocol-level specification. Compare with GDPR data portability provisions for the strongest version of the argument that Pod-residency is legally obligatory.

Spatial Web Foundation. ***HSTP and HSML*** **— IEEE Spatial Web Working Group drafts.** The substrate for SWARP's planetary-coordination claims. HSTP provides cryptographically verified, cross-platform transactions for the PPP as a portable civic credential. Read with appropriate scepticism about timelines, but read.

Norvaišas, K. Self-Organising Criticality (SOC) Framework for Cognitive Systems (working paper). Provides the formal apparatus for interpreting transitions between regimes of citizen engagement. The "Quaternion Interpreter" in SWARP's architecture uses this framework to identify when a community's aggregate Fiske distribution is approaching criticality — the panarchic moment at which a timely closure instrument could redirect the system toward genuine reorganisation.

Open Council Information (ORI) API. ***api.openraadsinformatie.nl*** **(documentation, ongoing).** The data source for the real-time agenda monitor. Coverage is complete for G4 municipalities but variable for smaller gemeenten; SWARP's confidence weighting partially compensates by down-weighting agenda signals from councils with sparse ORI records.

Centraal Bureau voor de Statistiek (CBS). ***Wijk- en buurtkaart Nederland*** **(annual).** The administrative geography for SWARP's Atlas layer. The spatial unit at which Fiske coherence and PoC quaternion distributions are computed is itself a political construction — boundaries have relational consequences that the PPP's geographic layer must respect.

De Raad voor het Openbaar Bestuur. ***Vertrouwen tussen burger en overheid*** **(multiple reports, 2018–present).** The empirical record of the legitimacy crisis to which SWARP responds. Read with the SCP's *Continu Onderzoek Burgerperspectieven* for the qualitative phenomenology. Together, these establish that the crisis is not primarily one of policy content but of representational form — and, in PEFT and Fractal Karma terms, of the absence of closure at every scale from the individual voter to the national polity.

Konstapel, H. (collected essays, ongoing). VALIS 6, Octonion Cosmology, the Resonant Stack. Constable Research B.V. / constable.blog. The proprietary synthesis motivating the SWARP design. The Resonant Stack paper ties together the FEP, octonion algebra, and holonic governance in a single framework, providing the formal justification for the claim that political representation and physical self-organisation are instances of the same underlying geometry, and that the PoC quaternion's four components are not arbitrary but reflect the four irreducible degrees of freedom of that geometry.

This essay describes SWARP as a working hypothesis in continuous calibration. The references above are the principal coordinates against which that calibration is performed; none of them is

treated as final authority, and the citation chains they open are, in every case, more important than the paper that begins them.