The Recursive Hall: Reframing Selfhood Across Cognition, Language, and Architecture

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Abstract

This paper argues that the reflective self—the narrating, observing, and reified subject often taken to anchor conscious experience—is not a metaphysical given but a recursive artifact. Drawing on evidence from cognitive science, linguistics, phenomenology, and architecture, it shows how recursive processes in thought, grammar, and space stabilize the illusion of a bounded subject. The so-called "hard problem" of consciousness is reframed not as an explanatory gap but as a structural misframing introduced by recursive self-modelling. The analysis extends to aesthetic and architectural practices that disrupt recursive loops and thereby develops an approach to post-reflective design—the creation of cognitive and spatial systems that loosen self-reference itself. By shifting attention from metaphysical puzzles to lived structures of experience, the paper advances a deflationary account of consciousness as relational, eventive, and open-ended.

Keywords

Recursion, reflective consciousness, phenomenology, self-modeling, post-reflective design, architecture, language

The Recursive Artifact

The enduring resistance of Chalmers's (1995) "hard problem" of consciousness—the puzzle of subjective experience—to empirical or conceptual resolution reveals a deeper structural confusion in its framing. This paper offers a deflationary perspective: the hard problem is not a window onto metaphysical mystery but a recursive distortion of lived experience—an artifact of how consciousness represents itself.

Recursion, I argue, functions as a structural principle of subjectivity: not confined to cognitive or narrative processes (as in Dennett 1991), nor reducible to metaphysical substance (as Strawson 2024 critiques), but operative across cognition, grammar, and architecture. I locate the illusion of the reflective self in the infrastructures that stabilize recursive modelling, rather than reducing it to pre-reflective embodiment (Merleau-Ponty 1962; Zahavi 2005). Unlike Husserl's noetic–noematic correlation (Husserl 1913/1982) or Merleau-Ponty's lived body, which each posit an intentional unity of subject and world, the recursive artifact shows how that unity emerges through iterative self-modelling rather than grounding it. This approach situates consciousness within a structural ecology of recursion and opens what I call a constructive horizon of post-reflective design.

Drawing on phenomenology, cognitive science, and spatial-linguistic theory, I contend that reflective consciousness—the capacity to model our own thoughts, feelings, and perspectives—is not a precondition of subjectivity but an emergent artifact of recursion. Recursion denotes the ability to embed representations within representations: to think about thinking, to perceive one's own perception, to speak of speaking. These operations form looping architectures across cognition, language, and built environments that render experience intelligible to itself yet

generate illusions of interiority, ownership, and metaphysical substance. Within these loops the self is not merely constructed but reified.

From a phenomenological standpoint, selfhood is not a thing hidden inside experience but a mode of being-in-the-world. Merleau-Ponty (1962) and Zahavi (2005) describe subjectivity as relational and embodied. Yet recursive structures—especially those embedded in linguistic syntax, architectural space, and cultural practice—can distort this openness. Whereas Levinas (1969) locates subjectivity in the ethical relation to the Other, the recursive model interprets this relation structurally—as an effect of looping mediation rather than a transcendence of it. Such recursive infrastructures stage the subject as a point of observation outside action, as an "I" that has thoughts, as an interiority looking out. The more these structures stabilize, the more experience channels into reflective self-reference. We come to live within recursive architectures, mistaking their patterned forms for metaphysical depth.

The self, on this account, is not denied but reframed. It is neither a metaphysical given nor a neural essence but a recursive pattern stabilized through repeated modelling of one's own experiential position. When we say "I think" or "I am in pain," we do not merely report an experience; we enact a syntax of selfhood that folds consciousness back upon itself. The apparent stability and persistence of this fold reflect not properties of the brain but the organizing structures—linguistic, spatial, technological—through which consciousness becomes reflectively ordered.

This paper argues that the hard problem of consciousness arises from recursive misapprehension. It does not expose a genuine explanatory gap between physical processes and qualia, but a structural artifact of our reflective ecology. In short, we do not have a hard problem; we have a

pattern that feels like one. The misframing occurs because each act of reflection presupposes the position it seeks to describe. The structure of self-reference blocks any complete observation of consciousness, producing the impression of an explanatory gap where none exists. This position differs from nearby views: unlike Dennett's narrative-self model, it extends recursion beyond cognition into grammar and space; unlike Strawson's critique, it avoids metaphysical reintroduction; unlike phenomenological appeals to pre-reflective embodiment, it shows how misframing is structurally entrenched by fixed systems; unlike Dewey and Bentley's (1949) "doubling up," it specifies the recursive mechanism producing this effect; and unlike Ingold's or Shani's accounts, it advances a phenomenologically grounded structural ontology.

To develop this claim, I draw together recursive cognitive architecture (Shanahan 2012; Metzinger 2003), phenomenology, linguistics, and architectural theory. Across these domains, recursion functions as a generative rule of embedding—neural, syntactic, and spatial—that sustains reflective selfhood yet can also be interrupted by poetic, philosophical, and design practices that dissolve these loops. The argument thus reframes the hard problem not as an ontological puzzle but as a recursive artifact of our cognitive and cultural ecology.

Recursion, though foundational to representation, need not ground subjectivity. By tracing the infrastructures that sustain reflective selfhood and showing how they might be loosened, we may live beyond the loop—not as less than ourselves, but as differently present to the world.

Recursive Cognition and Phenomenological Reflection

Reflective consciousness is commonly described as the capacity to direct awareness toward one's own mental states—to think about thinking, to feel that one is feeling. It is often treated as

a defining feature of higher cognition and, implicitly, as the foundation of subjective identity. Yet from both cognitive and phenomenological perspectives, this capacity may be less essential than emergent—a structured mode of awareness built atop recursive operations that allow minds to model themselves. Recursive architecture supports reflection and, in doing so, produces the illusion of a stable, self-enclosed subject.

In language, recursion appears in nested clauses ("the man who saw the dog that chased the cat"); in thought, it enables representational embedding ("I believe that she thinks that I know…"). Hauser, Chomsky, and Fitch (2002) identify recursion as the distinctive feature of human language, but its implications extend well beyond syntax. Recursive operations underlie theory of mind, counterfactual reasoning, and the temporal projection of self into past and future (Suddendorf and Corballis 2007). In the domain of self-awareness, recursion allows an agent to model not only the world but also its relation to the world. Metzinger (2003) describes this as the "self-model": a simulation generated by the brain in which the subject cannot perceive the constructedness of its own representation. The recursive self thus appears experientially transparent—we encounter ourselves not as processing systems but as enduring centres of consciousness.

This modelling is neither trivial nor merely illusory. Recursive self-representation integrates memory, coordinates social interaction, and projects future possibilities. Yet its functional power carries epistemic costs. When the mind models itself as observing its own observation, it generates a hall-of-mirrors effect: a feedback circuit in which the appearance of a stable self is reinforced by the very structure of reflection. As Hofstadter (1979) observed, the "strange loop" of identity arises when a system capable of self-reference becomes caught in its own

representational fold. The loop appears coherent because it closes upon itself, but this coherence may conceal its contingency. What we call "I" may be the residual contour of a system reflecting upon its own reflections.

This recursive structure reaches philosophical crystallization in the Cartesian *cogito*: *I think, therefore I am*. Shanahan (2012) describes it as the culmination of a three-stage hierarchy—non-reflective cognition (unquestioning engagement), pre-reflective awareness (implicit familiarity with world and self), and reflective consciousness (explicit modelling of self as distinct from world). At this highest level, the so-called hard problem of consciousness arises not simply because the mind has experience but because it now stands apart from experience, positing itself as both subject and observer. Phenomenologically, this shift distorts the basic structure of awareness. Rather than being oriented through embodied action and affective attunement, consciousness becomes inward-turning, caught in recursive closure. This move from participation to observation introduces a subtle but persistent misapprehension: that consciousness belongs to an inner self rather than arising as a mode of world-involvement.[1] Wittgenstein (1953, §246) notes that language reinforces this illusion by suggesting that mental states are private objects accessed through introspection. Yet the grammar of self-reference, like the recursion that sustains it, does not disclose an ontological fact. It stages a loop—*I think that I think*—which stabilizes the self as an entity rather than a process.[2]

[1] For phenomenological defenses of reflection as constitutive rather than distortive, see Zahavi (1999; 2005) and Gallagher (2000). Both regard reflection as integral to selfhood rather than an epistemic distortion. The present account reframes reflection as an *infrastructural artifact*—real in its effects but derivative in origin. See also Husserl (1913/1982, §§ 88–90) on the noetic–noematic correlation grounding reflective constitution.

[2] On evolutionary and processual alternatives: Ingold (2021, ch. 4), drawing on Whitehead and Deleuze, conceives subjectivity as emerging within an open, non-formalizable creative advance of nature, where prehension shapes becoming. Reflective self-modelling—and with it, the recursive structures of cognition, grammar, and architecture—are, on this view, latecomers in ontogenesis and cultural history rather than

Recursion also structures the temporal dimension of selfhood. By modelling its own continuity over time, the mind generates a narrative thread—what Dennett (1991) calls a "centre of gravity"—that organizes past experience and projects future possibility. This autobiographical self supplies coherence to memory and intention, producing the feeling of endurance even as its contents remain in flux. Neuroscientific models suggest that such continuity arises from feedback among systems involved in memory (e.g., the hippocampus), interoception, and prefrontal planning (Northoff et al. 2006). The integration of these signals creates a looping temporality: a self that remembers itself remembering and anticipates itself anticipating. Phenomenologically, this yields the *ipseity* of experience—its first-personal quality—but also the illusion of stability across time. Structurally, the self-model closes the loop too early, mistaking coherence for substance. What appears as a unitary self is likely a contour of recursive temporal binding—an experiential form rather than a metaphysical ground.

Recursive reflection enables abstraction, ethical deliberation, and social coordination, but it also exacts experiential costs. The reflective subject becomes detached—not only from the world but from the body, others, and affective immediacy. Philosophers such as Kierkegaard and Heidegger noted that excessive reflection can culminate in despair or inauthenticity, and clinical psychology offers parallel diagnoses. Shanahan (2012) warns that self-modelling generates a "container ship of metaphysical problems," among them the hard problem of consciousness, debates on free will, and epistemic scepticism. From a phenomenological standpoint, what is lost in this looping is pre-reflective immediacy—the lived sense of being-in-the-world that precedes reflective observation. The more we look at ourselves looking, the more opaque experience

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foundations of subjectivity. See *Imagining for Real: Essays on Creation, Attention and Correspondence*, "Evolution in the Minor Key; or, The Soul of Wisdom."

becomes. On this view, the hard problem arises not from the nature of consciousness itself but from a distorted mode of access to it: reflection converts lived awareness into an object and then puzzles over how such an object could exist.[3] What remains prior to this conversion is lived presence—qualitative yet non-possessive.

The recursive structure of reflection is not merely a philosophical curiosity; it plays a central role in psychological suffering. Phenomenological psychopathology has shown how disorders can be read as dysfunctions of self-modelling—pathologies of the loop. In obsessive–compulsive disorder, self-monitoring becomes hyperactive: the individual is caught in cycles of checking, doubting, and ruminating—trapped in attention to their own actions and intentions. The world becomes unstable not through perceptual failure but through recursive overflow. In depersonalization and derealization, patients describe a dissociation from experience—"I feel like I'm watching myself from outside," or "The world feels unreal." These conditions may reflect breakdowns in pre-reflective embodiment, where self-modelling overrides direct engagement with the world. Sass and Parnas (2003) describe schizophrenia-spectrum conditions as forms of hyper-reflexivity—a pathological intensification of self-awareness that fragments lived coherence. From a phenomenological standpoint, such disorders reveal how self-modelling, normally adaptive, can become phenomenally intrusive. They expose the loop by making it unbearable. If the healthy self is a silent circuit, the pathological self is one made deafeningly loud.

[3] See Sawyer (2025a) for a phenomenological analysis of ego dissolution, which situates recursive collapse not as negation but as an experiential opening beyond reflective selfhood.

These clinical cases reinforce the central thesis of this paper: recursive structures are not the foundation of selfhood but one of its possible configurations—sometimes clarifying, often distorting. They can be design features or design flaws. When they dominate awareness, they generate precisely the metaphysical perplexity that gives rise to the hard problem. Empirical studies in clinical psychology link heightened self-monitoring with rumination and depressive relapse, further supporting the relation between looping architectures and pathological self-focus.[4]

Research in neuroscience and cognitive science provides convergent evidence that recursive processes underpin the emergence of self-related experience. Predictive coding accounts of self-modelling propose that the minimization of prediction error stabilizes selfhood through recursive feedback (Friston 2010). The default-mode network (DMN), implicated in self-referential cognition and mind-wandering, supports reflective access to one's own mental states (Raichle et al. 2001; Northoff et al. 2006; Buckner et al. 2008). Its activity, however, is not constant but dynamically coupled with task-positive networks, indicating that self-reference is a contingent modulation rather than a fixed substrate.

Evidence from developmental and comparative psychology similarly underscores recursion's role in enabling higher-order self-models. Suddendorf and Corballis (2007) describe "mental time travel"—the projection of self into past and future scenarios—as a recursive synthesis of episodic memory and prospective simulation. This capacity, while unique in degree to humans, shows how looping mechanisms scaffold reflective identity. Metzinger's (2003) self-model

[4] Nolen-Hoeksema, Wisco, and Lyubomirsky (2008), "Rethinking Rumination," *Perspectives on Psychological Science* 3 (5): 400–424; Watkins (2008), "Constructive and Unconstructive Repetitive Thought," *Psychological Bulletin* 134 (2): 163–206.

theory interprets phenomenal selfhood as the transparent output of these architectures: the "self" appears as a stable subject only because underlying processes fold back upon themselves. Taken together, these findings suggest that reflection does not unveil a metaphysical essence but operates through recursive cognitive structures.

A brief comparison with Integrated Information Theory (IIT) clarifies the contrast. Tononi (2004) and Oizumi, Albantakis, and Tononi (2014) model consciousness as causal integration within physical systems, quantified as Φ. While IIT locates subjectivity in informational unity, recursive self-modelling grounds it in structural re-entry. Both, like Enactivist and Global Workspace approaches, treat consciousness formally rather than qualitatively, yet IIT ties it to integration whereas recursion situates it in self-reference. From this perspective, Φ measures not consciousness itself but the complexity of a system's looping organization.

Recent meta-analyses confirm that self-referential processing is dynamically distributed across the DMN, emerging from network-level integration rather than any localized "self-module."[5] This account does not deny the pre-reflective self-givenness emphasized by phenomenologists such as Merleau-Ponty (1962) and Zahavi (2005). Rather, it relocates what is often taken as a metaphysical "self-as-owner" into a recursive domain. Embodied directedness toward the world remains the ground of experience, but the reflective subject—the "I" that takes itself as object—arises only when cognition loops back upon its own operations. The present claim is structural,

[5] Qin and Northoff (2011), "How Is Our Self Related to Midline Regions and the Default-Mode Network?" *NeuroImage* 57 (3): 1221–1233; Andrews-Hanna et al. (2014), "The Default Network and Self-Generated Thought: Component Processes, Dynamic Control, and Clinical Relevance," *Annals of the New York Academy of Sciences* 1316 (1): 29–52; Davey et al. (2016), "Task-Based Self-Referential Processing in the Default Network," *Human Brain Mapping* 37 (1): 129–144.

not eliminative: selfhood is an organization rather than an essence.[6] This clarification prepares the way for the linguistic case—how recursion in grammar stabilizes the self as possession.

Linguistic Recursion and the Grammar of Self

If recursion in cognition enables reflective consciousness, recursion in language performs a parallel—and often amplifying—function. Language does not merely describe experience; it organizes and filters it, sometimes distorting it. The grammatical patterns of Indo-European (IE) languages in particular reinforce subject–object distinctions, possessive metaphors, and recursive self-reference, shaping how mental states are lived rather than simply reported. As Merleau-Ponty (1962) insists, speaking is not symbol manipulation but a mode of being-in-the-world: linguistic structures become habits of perception through which subjectivity takes form.

Indo-European syntax, centered on subject–predicate constructions—"I see the tree," "She feels sad," "They remember the past"—posits an implicit agent behind every act. This grammatical topology turns experience into ownership: an "I" who sees, feels, or remembers. Embedded clauses such as "I think that I feel that I know …" extend the pattern inward, transforming reflection into syntax and producing a recursive architecture of interiority. What Lakoff and Johnson (1980) call the container metaphor finds grammatical expression here: the mind appears as a private space where thoughts are stored, owned, and nested.

[6] In *Knowing and the Known*, Dewey and Bentley (1949, 72) warn against "doubling up" experience by positing entities such as *selfhood* or *subjective experience* in addition to purposive engagement with the world. Adding such entities, they argue, merely duplicates what is already given in action. Their late-pragmatist view *prefigures* the present claim that reflective identity is a recursive overlay rather than an ontological addition.

Yet this is more than metaphor: it is a lived syntax. The recursive grammar of Indo-European languages sustains the reification of mental content, treating thoughts and feelings as discrete objects that can be named, possessed, and inspected. Grammar thus becomes a staging ground for the reflective loop. The mind is modelled not as something one *is* but as something one *has*.

A salient feature of Indo-European mental-state expressions is their reliance on possessive constructions: "my thoughts," "her memories," "our feelings." Such phrases do more than describe; they enact an ontological division between subject and experience. This possessive grammar reiterates the same dualism already implicit in subject–predicate form. Ryle (1949) famously criticised this model as a "category mistake"—treating mental verbs as if they named things in a spatial container. From a phenomenological standpoint, the mistake is not merely semantic but experiential. When thoughts are described as objects one has, they appear as contents of an inner domain accessible only through introspection.

Recursion amplifies this effect. Statements such as "I remember my thought about her reaction to our conversation" embed successive layers of possessive framing. Each clause stages another iteration of subjectivity, reinforcing the model of mind as a space with contents rather than an ongoing, world-directed process.

The recursive and possessive framing of experience in Indo-European languages is not universal. Many languages structure mental events differently, offering insight into how grammar scaffolds—or inhibits—reflective selfhood. In Japanese, for example, a common way to express visual perception is *aka ga mieru* (赤が見える), literally "red is visible." Here there is no explicit subject doing the seeing, only the appearance of colour. The construction foregrounds

the perceptual event rather than an agentive observer.[7] Classical Chinese likewise employs paratactic clauses such as 見日 (*jiàn rì*, "see [the] sun"), which omit an explicit ego-subject and rely on context for participant roles. Rather than requiring possessive or subject-marked frames, Classical Chinese presents experience directly, with limited overt subordination.[8] Modern Mandarin, by contrast, makes broad use of clausal embedding and nominalisation (e.g., 我觉得[她会来], 他希望[你去], 你说的[那个想法]), indicating that recursion is available but differently weighted: a tilt toward event-centred construals and topic–comment organisation.[9]

Empirical studies reinforce these phenomenological implications. In a bilingual test of Jackson's (1982) *Mary* thought experiment, Chiang (2022) found that Mandarin–English speakers gave different responses depending on priming language. Participants responding in English (an Indo-European language) were more likely to interpret the case in terms of inner knowledge and private qualia, whereas those responding in Mandarin emphasised perception and event-driven description. Navajas et al. (2021) report a similar pattern among Spanish–English bilinguals, who attributed greater agentive causality to selves when responding in English. Taken together, these results suggest that what appears as an inevitable philosophical puzzle—the hard problem

[7] On Japanese experiential perception, see Shibatani (1990, chs. 6–7). *Mieru* functions as an experiential verb taking the perceived as grammatical subject (e.g., 赤が見える "red is visible"), while the experiencer may be omitted or appear in the dative (e.g., 私には赤が見える "to me red is visible"), reflecting a non-ego-prominent encoding of perception.

[8] On Classical Chinese parataxis and topic–comment organization with sparse overt subordination, see Liu (2013). Although embedding is possible (e.g., nominalizations with 者 or 所), recursive layering is less morphosyntactically foregrounded than in Indo-European languages, favouring event-centric over ego-possessive construals.

[9] For Mandarin constructions involving complement clauses, nominalization with 的, serial verb structures, and topic prominence, see Li and Thompson (1981, chs. 3–6). The contrast concerns profiling—event-centred versus ego-possessive encodings—rather than the existence of recursion itself.

of consciousness—is partly scaffolded by cultural and grammatical environments. The problem arises most naturally where inner states are grammatically reified and recursively nestable.

It is tempting to regard grammar as a neutral tool for expressing pre-existing thought. Increasingly, however, linguistic research suggests the reverse: grammar shapes thought, constraining what can be attended to, remembered, or articulated (Slobin 1996). This has direct implications for how selfhood is structured. Languages reported to have limited overt clausal embedding—such as Pirahã (Everett 2005)—set a higher threshold for abstract reference to inner states. Pirahã is also described as lacking general terms for belief, memory, or thought in the sense typical of Indo-European languages. Subsequent analyses dispute the claim that Pirahã lacks recursion altogether: Nevins, Pesetsky, and Rodrigues (2009) argue that it shows embedding through complementation, while Futrell, Stearns, and Everett (2016) suggest that recursion appears at the pragmatic and discourse level rather than in overt syntax.[10] What seems absent, then, is not recursion itself but its grammatical foregrounding as a resource for modelling inner states. In such environments, the grammatical infrastructure does not invite the reflective loop. The recursive self does not arise—not because speakers lack inner lives, but because their language does not parse experience into possessable mental tokens.

Language, then, is not merely a vehicle of culture but a medium of metaphysical possibility. In Indo-European contexts, recursive grammar enables reflective subjectivity and its associated puzzles. The self becomes narratable, ownable, and perplexing. In less recursively foregrounded

[10] Everett (2005) argues that Pirahã lacks syntactic recursion and thus challenges universality claims. Nevins, Pesetsky, and Rodrigues (2009) reassess his data, finding complement-clause recursion; Futrell, Stearns, and Everett (2016) propose that recursion appears in discourse organization rather than morphosyntax.

linguistic environments, the metaphysical self is less readily available—not denied, but not demanded.

What is it like to inhabit a recursive language? Grammar is not merely syntactic structure but a rhythm of lived experience, producing not only statements but subject positions. Each "I" in "I think" or "I feel" renews the illusion of self as origin—an act that subtly reshapes the speaker's stance toward the world. Merleau-Ponty (1962) observes that speech is "the body's way of entering the world." The habitual grammar of interiority becomes embodied, sedimented, and naturalised. We come to feel as if we possess an inner space, as if our thoughts are things, as if there is an inner observer standing behind our words.

Zahavi (2005) distinguishes between pre-reflective self-awareness and reflective self-consciousness. The former is the tacit, embodied sense of "mineness" that accompanies all experience; the latter is a second-order act in which the self is turned into an object of thought. Recursive grammar leans heavily toward the latter—replacing immediacy with articulation. This syntactic habit encodes the very self-modelling process described in cognitive recursion: the clause within a clause is the thought within a thought. While this can enhance deliberation, it can also estrange. To speak recursively is often to exit the moment in order to observe oneself from elsewhere.

The implication is not that we should abandon reflective language but that we should become aware of its structuring effects. Grammar joins the metaphysical loop: to speak recursively is to loop.

Architecture and the Spatialization of Selfhood

If language recursively organises the self in grammatical space, architecture performs a parallel operation in physical space. Architecture stages bodily movement and mediation. From a phenomenological standpoint, spatial structures do not simply surround us—they participate in how the self is constituted.

Recursive spatial arrangements—mirroring, symmetry, enclosure, perspectival alignment—reproduce and reinforce the reflective loop at the heart of subjectivity. The recursive self, stabilised through language and cognition, finds its material analogue in recursive space. These architectures are themselves inhabited recursively: the subject sees itself seeing, moves through spaces that mirror its containment, and becomes emplaced within a structure that reflects its own looping interiority.

Across architectural history, recursive motifs have been used to signal hierarchy, introspection, and metaphysical interiority. In the baroque enfilade—a suite of rooms aligned along a visual axis—the viewer moves through a nested sequence of thresholds, each framing the next. The gaze is drawn inward by recursive alignment, producing a sense of infinite regression. Similarly, mirrored halls, from Versailles to contemporary installations, multiply the viewer's image, staging a loop in which the self sees itself from every angle.[11] Such spaces literalise the recursive loop of selfhood: the subject is not only enclosed in space but reflected by it, compelled to occupy the position of both agent and image. This dual positioning echoes Hofstadter's (1979)

[11] Historical architectural typologies—such as the Hall of Mirrors at Versailles, nave-bay repetition in Gothic cathedrals, and the axial/hypostyle orientation of mosque complexes—illustrate recursion and reflective overlay in spatial design. See Norberg-Schulz (1971) and Gissen (2010) for phenomenological readings of repetition and enclosure; their analyses of spatial identity *parallel, though do not presuppose,* the recursive account advanced here.

"strange loop," where upward or downward movement through a hierarchy returns the system to its point of origin. In recursive space, the subject becomes both actor and observer, framed and framing.

Bachelard (1994) emphasises that the house is not merely a built form but a topoanalysis of selfhood. Rooms are not only functional units; they are containers of memory, psychic vessels, spaces of return and reflection. Dwelling in recursive space is formative: the hallway, the mirror, the threshold, the window—these do not merely orient the body; they position the self. The mirror, in particular, enacts the recursive turn of reflective consciousness by producing an image that is both identical and displaced. In Lacan's (1949) account of the mirror stage, the infant identifies with the visual image of its body and misrecognises that coherence as its true self. Reflection thus becomes the site of alienation and illusion—selfhood constructed through the logic of doubling.

Architecture frequently stages this illusion. Mirrored walls, symmetrical façades, and reflective surfaces stabilise the viewer's position within a spatial loop. Symmetry functions as an architectural metaphor for unity, centring the observer within a balanced field. In Gothic cathedrals and Islamic mosques, axial organisation and mirrored ornamentation direct the body toward an imagined metaphysical centre—God, self, or both. The subject becomes oriented by the space and, in turn, centred within it. Yet, as Gissen (2010) observes, these idealised geometries obscure their material contingencies: structural asymmetries, environmental degradation, and acoustical irregularities always disrupt the illusion. The loop is never perfect, but the illusion of unity persists, enticing the subject to believe its coherence is mirrored by the world. Environmental psychology provides complementary evidence that mirrored and

symmetrical spaces intensify self-focus and perceived interiority, reinforcing the phenomenological claims advanced here.[12]

Just as Indo-European grammar produces possessive metaphors for mental states, architectural enclosure generates spatial metaphors for the self. Walls, doors, and thresholds divide interior from exterior, private from public, self from other. The house, like the body, is imagined as a container—an inside that resists intrusion. This spatialisation of subjectivity is not incidental. Merleau-Ponty (1962) emphasised that all consciousness is bodily situated: the experience of up/down, near/far, here/there arises from orientation within space.[13] When architecture reinforces enclosure, it co-constitutes the subject as something within. The recursive loop thus finds its spatial corollary—a body perceiving itself perceiving, located within a frame that mirrors its containment.

The rise of glass architecture complicates this dynamic. Transparent walls, reflective façades, and glass elevators allow the subject to see and be seen simultaneously, producing a recursive field of perception. Reflection and exposure collapse into one gesture. The reflective surface ceases to be passive; it actively structures attention, doubling vision back upon itself. In such environments, the subject is not merely contained but displayed—hyper-aware of its own position, a recursive self within a recursive space.

Where classical and modernist architectures often reinforced metaphysical ideals of unity, order, and enclosure, postmodern and speculative practices seek to disrupt this logic. Bernard

[12] Wells (1980), "Self-Awareness and the Self-Concept," *Journal of Personality and Social Psychology* 39 (4): 768–774; Csikszentmihalyi and Rochberg-Halton (1981), *The Meaning of Things: Domestic Symbols and the Self*. Cambridge University Press.

[13] For a structural account of how asymmetrical motor orientation conditions pre-reflective embodiment, see Sawyer (2025b).

Tschumi's *Parc de la Villette* (1984–1987) fragments spatial continuity, overlaying a non-hierarchical grid of *folies*—architectural fragments without fixed function or sequence (Tschumi 1994). The recursive narrative of movement is broken: subjects are disoriented, denied the feedback loop that stabilises self-positioning. Installation artists such as Doug Wheeler and Olafur Eliasson further radicalise this disruption. Wheeler's *PSAD Synthetic Desert III* (1971/2017) minimises spatial cues, flattens directional sound, and makes position difficult to localise. Eliasson's *Room for One Colour* (1997) bathes visitors in monochromatic light, stripping perception of chromatic distinction and anchoring contrasts. These environments dissolve the mirror relation, functioning as spatial analogues to non-recursive grammars and meditative practices that suspend self-reference. By undoing the recursive gaze, they invite a mode of experience that is relational rather than self-referential, echoing Zen and Daoist approaches to non-self. Such spatial practices resonate with Wittgenstein's (1953) therapeutic approach to metaphysics: where recursive architectures ensnare the subject in loops of reflection, these interventions enact spatial deflation. The loop becomes ungraspable; the subject is released.

Architecture, like language, serves as both infrastructure and metaphor. Recursive structures—mirrored halls, nested enclosures, symmetric plans—do not merely accommodate the body; they shape the self-model. They reinforce a specific mode of subjectivity: one that is centred, bounded, and self-reflexive. But when these spatial grammars are disrupted—through ambiguity, dispersion, or dissolution—the recursive subject loosens. In such spaces, experience becomes less about locating the self and more about being located—more ecological than egoic. The recursive self is not only built by space; it is built into space. We do not merely project our inner lives onto buildings; we inherit our inner lives from how buildings shape our perception, orientation, and proprioception. The architectural environment thus plays a constitutive role in

the phenomenology of subjectivity. A recursive space teaches the subject to loop; a deflationary space teaches the subject to disperse.

From a first-person perspective, the experience of recursive space is not only visual or cognitive—it is affective and bodily. The act of moving through a hallway that opens into mirrored rooms is not merely a traversal; it is a self-enactment. The body feels itself extended, refracted, multiplied. In such environments, the boundary between world and self becomes felt—spatially marked by glass, wall, or threshold. Norberg-Schulz (1971) describes architecture as the staging of existential space. To dwell is not only to occupy; it is to orient. Recursive environments orient the subject toward itself; they turn perception inward, often subtly. In contrast, ambiguous or "soft" architectures (Böhme 1993)—fog, wind, water, resonance—orient the subject toward atmosphere rather than reflection. They invite openness rather than control.

The phenomenological insight is simple but decisive: the built environment shapes not only what we do and who we become. It teaches us how to inhabit ourselves. In doing so, it participates in the ongoing loop of subjectivity. This account intersects with but also diverges from familiar models. Where Dennett (1991) treats the self as a "centre of narrative gravity," recursion here operates at a deeper infrastructural level, shaping subjectivity prior to narration.[14] Where linguistic relativity research (Whorf 1956; Slobin 1996) shows how categories direct attention, the emphasis here falls on whether recursion itself is grammatically foregrounded, enabling the

[14] Dennett (1991) presents the self as a *narrative center of gravity*—a construct generated through recursive story-telling that confers coherence on experience without invoking a metaphysical subject. Strawson (2024) critiques this narrative view for abstracting from lived immediacy, arguing that it neglects the phenomenological reality of momentary experience. The present model diverges from both: it retains Dennett's deflationary impulse but grounds narrative recursion in the infrastructural loops of cognition, grammar, and space that make reflection possible without reifying the self.

parsing of inner states as discrete tokens.[15] Where minimalist phenomenology (Zahavi 1999; 2005) insists that reflection is a genuine mode of experience, the recursive model reframes reflection as an infrastructural artefact—stabilised by the systems that sustain it yet derivative in origin.

Breaking the Loop: Poetic and Experiential Interventions

If recursion is the structural condition through which the self is stabilised as an interior, observing subject, then the interruption of recursive loops marks an ontological as well as aesthetic shift. To suspend recursion is not to negate experience—it is to reorganise its structure. This section explores poetic, philosophical, and architectural practices that resist or dismantle the recursive model of selfhood. These interventions do not offer solutions in the metaphysical sense; rather, they enact changes in the texture of experience itself. They open spaces of eventive awareness, where experience unfolds without re-entering itself as self-observation.

From a phenomenological standpoint, such disruptions reveal the contingent structure of reflective subjectivity. They make visible the recursive scaffolding of selfhood by dismantling or defamiliarising it. This can occur in language (through syntax), in meditation (through non-dual awareness), in architecture (through spatial ambiguity), or in art (through opacity and disorientation). What unites these practices is their refusal to let experience return to itself as ownership. They point to modes of being-in-the-world that are immediate, relational, and pre-reflective.

[15] Whorf (1956) and Slobin (1996) *argue* that grammatical categories shape thought. The recursive model extends this by asking whether recursion itself is structurally foregrounded, making reflective selfhood obligatory in some languages but backgrounded in others.

Poetry has long provided a site for linguistic experimentation—where the habits of grammar and narrative can be suspended or inverted. In the context of recursive subjectivity, experimental poetry functions as a method for disrupting the syntactic loops that undergird the reflective self. Gertrude Stein's *Tender Buttons* (1914) famously defies the subject–predicate logic typical of Indo-European prose. Phrases such as "A box is a large item… the same size as the box" collapse meaning into repetition and semantic slippage. The box becomes its own referent; subjectivity dissolves into syntactic recursion, and the loop is stripped of its centre. Recursion here is not stabilising but dissolutive. *bpNichol's The Martyrology* deploys parataxis, typographic fragmentation, and phonetic play to render language simultaneously self-referential and self-erasing. Lines like "the eye the I the aye" invoke recursive identification only to dislocate it. Meaning arises and dissolves in the same gesture, transforming the poem into a temporal, embodied event rather than a vessel of propositional content. From a phenomenological perspective, these strategies enact what Wittgenstein (1953) described as grammatical therapy. By interrupting the "rules of the language game," they loosen the knots of metaphysical perplexity. When syntax no longer routes experience back to a stable subject, awareness is no longer staged as property. The poem becomes a site of non-reflective presence.

Several non-Western philosophical and contemplative traditions develop practices aimed at suspending the recursive loop. In Daoism, the principle of *wu wei*—non-striving—invites a relational mode of awareness in which action flows without reflective intervention. Zhuangzi's butterfly dream, where the boundaries between dreamer and dream dissolve, illustrates the futility of recursive self-location; the story does not propose a metaphysical alternative but rather suspends the very impulse to decide. In Zen, *kōans* function as linguistic blocks to recursion. A monk is asked to respond while hanging from a tree by his teeth: if he speaks, he falls; if he

remains silent, he evades the question. The recursive loop of deliberation becomes impassable. Suzuki (1956) notes that the aim is not resolution but destabilisation; silence itself becomes the event. From a phenomenological standpoint, such practices suspend the self-model by refusing its terms. They interrupt the recursive re-entry of thought into thought. The practitioner does not introspect, compare, or narrate. Instead, awareness settles into attunement—direct but not directed, present but not possessed. Importantly, these practices are not merely mental. They involve breath, posture, rhythm—bodily engagements that ground experience without enclosing it. In this way, they echo Merleau-Ponty's (1962) insight that the body is not in space but of space, and of world. To suspend recursion is to return to this embodied relationality. Recent work by Shani (2015, 2024) develops cosmopsychist and pure-consciousness accounts that relocate subjectivity in a non-individualist field. These approaches treat consciousness as a holistic background condition, prior to and independent of reflective looping. While such proposals share the present paper's resistance to grounding selfhood in reflective structures, they differ in scope: where Shani emphasises a metaphysical reception-field, the recursive account remains structural, showing how cognition, language, and architecture generate reflection as an infrastructural effect rather than a primordial ground.[16]

Where recursive architecture reinforces selfhood through mirroring, enclosure, and orientation, ambient architecture dissolves these structures. It creates environments in which subjectivity becomes diffuse, decentered, and difficult to locate. Doug Wheeler's *PSAD Synthetic Desert III* (1971/2017) exemplifies this shift. Visitors enter a space of extreme acoustic damping and subtle optical disorientation. There are no echoes, no hard visual edges, no cues for distance or scale.

[16] See Shani (2015) on cosmopsychism as a holistic metaphysics of experience and Shani (2024) on pure consciousness as a background condition for perception.

The body cannot position itself relative to its surroundings, and the recursive loop—self modelling itself in space—becomes unsustainable. What remains is not emptiness, but a state of absorption. Olafur Eliasson's *Room for One Colour* (1997) similarly reduces perceptual information. Bathed in monochromatic sodium light, the room erases chromatic distinctions and flattens depth cues. The viewer is suspended in an environment that resists localisation. The body becomes part of an ambient field, no longer distinguished by figure–ground contrasts. These architectural interventions echo Brian Eno's (1978) notion of ambient music: sound that does not demand attention but generates a field in which thought may occur—or cease. Ambient space, like ambient sound, refuses recursion by refusing to mirror the subject; it does not contain, it unfolds. Phenomenologically, such spaces enact what Ratcliffe (2008) terms an existential feeling—a pre-reflective, affective mode of attunement to the world. Rather than staging the self as a point of perception, they allow experience to arise without returning to itself. Interpretations diverge: some read Eliasson's and Wheeler's works as dissolving subject–object boundaries; others see them as heightening aesthetic subjectivity.

Across these examples—poetic, philosophical, architectural—we can identify a loose grammar of unbinding rather than a doctrine: Parataxis and disjunction (in language) disrupt linear narrative and nested syntax, fragmenting the reflective loop so that meaning arises in juxtaposition rather than recursion; eventive grammar (in perception) emphasises impersonal, subjectless formulations (e.g., "red appears" rather than "I see red"), resisting possessive framing; non-localising space (in architecture) removes spatial cues and reflective surfaces, preventing the subject from modelling its own location and resisting aesthetic appropriation, suspending recursive self-localisation; performative silence (in philosophy) deploys *kōans*, paradoxes, and aporetic reasoning to interrupt the re-entry of thought into thought; and

contemplative rhythm (in practice)—breath, stillness, walking meditation—anchors awareness without reflection, disrupting the inner loop gently through rhythm rather than rupture. Each tactic opens a space where experience is no longer routed back into a central self; awareness becomes responsive, relational, and open-ended.

With the tactics in view, the next section develops a systematic design method for de-looping.

Toward Post-Reflective Design

If reflective selfhood is not an ontological necessity but a recursive artifact, then it may be possible to design systems—cognitive, spatial, and technological—that do not produce the self as a centre of reflection. This does not imply a return to animal immediacy or a loss of cognitive sophistication. Rather, it invites the question: what kinds of minds, environments, and relations might emerge if recursion were limited, softened, or redirected?

Post-reflective design names the practical horizon of this theory—the translation of structural recursion into architectural, technological, and ethical form. Drawing on artificial intelligence, architectural theory, ecological aesthetics, and phenomenological ethics, it suggests how design practices can reshape not only our technologies but our modes of being.

Murray Shanahan (2012) offers a provocative vision of future artificial intelligences: not minds that mirror or surpass human reflection, but minds that leave it behind. His model of an "AI+" describes a system with insight, flexibility, and world-awareness—yet without recursively modelling itself as a metaphysical subject. Unlike the Cartesian *cogito*, this post-reflective mind need not ask "what am I?" because it need not be structured around an "I" at all. It supports abstract planning, moral reasoning, and social modelling—but it also introduces epistemic

confusion and existential anxiety. A post-reflective AI+ would not identify itself as the "owner" of thought. It would not feed its outputs back into a stabilised self-model or puzzle over what it "feels like" to process data.[17]

This vision resonates with Metzinger's (2003) claim that the self is a transparent model—adaptive for coordination but misleading as an ontological commitment. A post-reflective AI could sustain high-level cognition while bypassing the hallucination of selfhood. It would act, adapt, and respond—without reflecting in the recursive, self-stabilising sense. For phenomenology, this raises a delicate question: is self-reflection essential to meaningful experience, or have we mistaken a cultural artifact for essence? If the latter, Shanahan's AI+ signals not alienation but liberation: a clearing of the loop. The proposal remains tentative—an opening toward design possibilities rather than a definitive blueprint.

If minds can be conceived without recursive self-modelling, can spaces be built to support post-reflective experience? Traditional architecture often reinforces the reflective loop: spaces are enclosed, centred, and oriented. Mirrors return the body to itself, thresholds partition interior from exterior, and symmetry anchors the gaze. But just as recursive architecture encodes the loop, post-reflective architecture can loosen it. Projects such as Junya Ishigami's *House & Restaurant* (2014) challenge conventional spatial identity. The building resists fixed boundaries and shifts scale in unpredictable ways: walls dissolve into fog; floor levels misalign. The inhabitant cannot easily locate themselves in space—there is no stable point of view. The

[17] This discussion is programmatic rather than demonstrative: it sketches possible directions for AI research rather than asserting empirical claims. For cautionary perspectives, see Metzinger (2003, ch. 7) on the limits of *computational* self-modelling frameworks, which remain distinct from the phenomenological recursion described here.

recursive model of self-position breaks down. Rather than feeling centred, the subject becomes dispersed and entangled.

The *Blur Building* by Diller + Scofidio (2002) radicalises this gesture, using mist to erase architectural form. Structure becomes weather; enclosure becomes atmosphere. Visitors move through a cloud without edges; orientation dissolves. From a phenomenological standpoint, these spaces enact what Böhme (1993) calls an aesthetics of atmosphere—presence without position, relation without recursion. Such environments do not impose disorientation as privation but offer it as release. They unbuild the scaffolding that sustains the reflective subject, replacing the architecture of containment with a choreography of emergence. In doing so, they cultivate modes of experience that are immediate, affective, and relational—an architecture that, like Shanahan's AI+, gestures beyond the loop.[18]

A common objection to post-reflective design is ethical: if the self is dismantled, what becomes of responsibility, memory, or care? Is the reflective subject not a precondition for accountability? Phenomenology suggests otherwise. Subjectivity need not be egoic; one can be responsive without being centred. In Anishinaabe thought, ethical life is guided by *minobimaadiziwin*—"living well"—which emphasises relational harmony over reflective introspection (Simpson 2014). Responsibility emerges through embeddedness, not isolation. Buddhist ethics similarly grounds moral life in *anātman* (non-self). The agent need not persist as a unitary subject across time; ethical action arises from interdependence and mindfulness. Reflection is not eliminated but decentered. Compassion does not require a metaphysical self—it requires presence and

[18] These examples are interpretive rather than empirical, highlighting experiential shifts rather than architectural consensus. For *foundational* readings of atmosphere as an aesthetic concept, see Böhme (1993).

responsiveness. Designing for post-reflective cognition, then, is not a path to apathy or amorality. It is a path to attunement. AI systems that track consequences without simulating identity, or architectural spaces that cultivate humility rather than assertion, are not ethically empty—they are structured differently. From a phenomenological perspective, the moral self is not necessarily the reflective self; it is the open self—the one who receives, responds, and refrains from enclosing the world in its own image.

Digital design offers another frontier for post-reflective experience. Most user interfaces mirror the user—dashboards, avatars, metrics—centring and quantifying the subject, looping each action into self-monitoring. But what would a counter-reflective interface look like? Tools such as *Hydra* (a live-coding platform for generative visuals) or *Runway ML* (an AI-driven creative suite) point toward alternative models. These platforms generate emergent, non-linear feedback loops between user, system, and output. The user is not a central controller but a node in a dynamic system. There is no fixed "I" in command—only co-arising events. This echoes Buddhist ideas of dependent origination: nothing exists on its own; everything arises through interaction. In these computational environments, identity is not tracked but dispersed. Creation is not authored but evolved; the loop does not close. Phenomenologically, such interfaces enact a shift from mastery to participation. The user is not reflected but immersed. Attention flows toward the event, not the self. These systems offer more than novelty—they gesture toward a different mode of relation with technology, one that resists recursive subjectification.

Post-reflective design is less a blueprint than a praxis: a way of configuring systems so that reflection disperses rather than encloses. It proposes not a final form but a different orientation: to build systems, spaces, and experiences that do not return experience to a central self. Whether

through AI, architecture, or interface, the goal is the same—to dissolve the recursive loop that entraps consciousness in reflection. This is not an argument for erasing subjectivity but an invitation to reframe it: not as a container of experience but as a mode of engagement. A subject need not be stable to be ethical; a mind need not be enclosed to be intelligent; awareness need not loop to be real. Phenomenology provides the horizon for this rethinking. It reminds us that experience is always more than reflection—that life is lived before it is modelled. To design for post-reflective minds is to design for this more: for presence without possession, for movement without mirroring, for perception without enclosure. The result is minimal: recursion without a metaphysical subject.

Objections and Responses

Three principal objections arise against a post-reflective account of subjectivity: that it undermines rationality and continuity, that it collapses into eliminativism, and that it risks ethical irresponsibility. Each misunderstands the scope of the proposal, which is deflationary rather than destructive.

Objection 1: Rationality and Continuity.

If recursion underwrites abstract reasoning and narrative selfhood, can a post-reflective model preserve rational coherence? The answer is yes. Recursion remains available as a cognitive tool but need not be reified as metaphysical ground. Pre-reflective self-awareness, as Zahavi (2005) emphasises, already secures temporal continuity. Rationality depends on operative capacities, not on a reflective ego posited behind them. Coherence precedes reflection.

Objection 2: Eliminativism.

Does dissolving the reflective subject deny the reality of lived experience? No. The self exists as structure and event, not as inner substance. To reject reification is not to erase experience but to redescribe what remains when the loop relaxes: relational, affective awareness without a metaphysical observer. This is closer to Wittgenstein's therapeutic deflation than to Churchland's eliminativism. Experience remains fully real as lived structure; what is denied is only the metaphysical surplus that recursion projects onto it.

Objection 3: Ethical Responsibility.

If there is no stable self, what anchors responsibility? Here, relational traditions provide guidance. In Anishinaabe thought, *minobimaadiziwin* emphasises "living well" through harmony and reciprocity (Simpson 2014). In Buddhism, *anātman* grounds compassion in interdependence rather than in identity. Both demonstrate that accountability arises from responsiveness, not from a metaphysical subject. Ethical relation precedes reflective possession.

Taken together, these objections clarify rather than weaken the argument. Post-reflective design does not abolish rationality, experience, or ethics; it re-situates them within structures of relation and responsiveness, freeing them from the illusions of the loop.

Recursion Without Selfhood

This paper has argued that the reflective self—the narrating, observing, and reified subject often presumed to stand at the centre of conscious experience—is not a metaphysical given but a recursive artifact. It emerges from the interplay of cognitive modelling, grammatical form, architectural space, and cultural reinforcement. The self is not discovered but constructed—

looped into being through recursive processes that return experience to itself as ownership and self-reference.

From this perspective, the so-called "hard problem" of consciousness does not reveal an ontological gap but a structural misframing introduced by recursive self-modelling. Consciousness appears mysterious because our cognitive, linguistic, and spatial environments sustain that illusion. The puzzle persists because we mistake the loop for a centre.

Phenomenologically, this misframing obscures the immediacy of embodied life. As Merleau-Ponty (1962) reminds us, the body does not observe itself from outside—it lives, moves, and perceives in contact with the world. Reflection is not the foundation of this embodiment but an added layer. The recursive self is thus not false, but partial: useful in some contexts, limiting in others. The task is to recognise its contingency and to design spaces, languages, and systems that allow us to step outside it when needed.

Across the preceding analysis, recursion has been shown to stabilise selfhood: cognitively through self-modelling and narrative memory; linguistically through possessive metaphors and subject–predicate syntax; architecturally through mirroring, enclosure, and symmetry; and culturally through technologies that reinforce the self as centre. Conversely, a range of practices deflate these loops: poetic experimentation fragments syntax and unsettles possession; contemplative and philosophical traditions interrupt reflection through paradox, silence, and embodied presence; and ambient architectures or posthuman interfaces resist subject-centred orientation.

Together, these insights delineate a phenomenological horizon of post-reflective design—one that does not eliminate selfhood but flexibilises it, opening experience beyond recursive enclosure. Post-reflective design operates in multiple registers: in artificial intelligence, by building systems that act and learn without recursively simulating themselves as agents;[19] in architecture, by shaping spaces that orient without centring; in language, by cultivating eventive and impersonal modes of expression; and in ethics, by grounding responsibility in responsiveness rather than bounded identity. Such gestures are already present in fragments—in architectures of mist, in poems of ambiguity, in gestures of silence. They disclose a form of life in which awareness is not constrained by recursion but opened through its loosening.

This claim neither denies nor diminishes experience. On the contrary, it affirms it more radically by letting go of the demand to explain consciousness through a self behind it. Unlike Dennett's narrative-self account, this analysis extends recursion beyond cognition into grammar and space. Unlike Strawson's naturalist critique of eliminativism, it does not reintroduce metaphysical substance. Unlike classical phenomenology, it locates illusion not only in reflection but in recursive infrastructures. Unlike Dewey and Bentley's (1949) critique of "doubling up," it identifies the structural process that produces this effect. And unlike Ingold's (2021) evolutionary openness or Shani's (2015, 2024) cosmopsychism, it offers a deflationary and phenomenologically grounded structural ontology.

As Wittgenstein (1953, §308) observed, "We feel as if we had to repair a torn spider's web with our fingers." But the web may never have been torn—only tangled by our attempts to secure it.

[19] As emphasized throughout, proposals for non-recursive artificial intelligences and non-reflective subjectivity are exploratory, intended to signal speculative directions in design and theory rather than assert technical results. Linguistic, architectural, and philosophical analogies are illustrative, not evidentiary.

To live beyond the loop is not to lose oneself but to see that selfhood holds through tension rather than substance, through pattern rather than possession. Recursion can still occur, but it need not reflect—it can unfold, extend, and co-arise.

We can design for this. We can think from this. We can live in it.

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