

The Binding Force

Attraction as the Mechanism of Self-Assembly, the Borrowed Cycle, and the Radius of the Warrant

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Three structures are formalized here, all of them answers to a single question the canon has never asked. TEI-CKB-2 states that nature self-assembles — atoms form molecules, molecules form cells, cells form organisms — and the Third Law states that intelligence increases in complexity with time. Neither says what makes assembly happen. This document proposes that the missing mechanism is attraction, gives it four falsifiable conditions, and traces two consequences: the Borrowed Cycle, by which a mature intelligence runs the SPCA phases a developing one cannot yet close, and the Radius of the Warrant, which reframes the Authorization Void of TEI-CKB-12 as a problem of scope rather than of belief.

STATUS OF THIS DOCUMENT

This document formalizes three framework extensions first developed in the *TEI in the Wild* essay *At the Atomic Level*. Its purpose is canonical: to state the extensions precisely enough that they can be applied consistently, criticized directly, and — if they fail — withdrawn without disturbing the rest of the framework.

One extension revises an existing canonical position. Section 4.2 restates the Authorization Void of TEI-CKB-12 as a radius problem rather than an authorization problem. Section 4.4 makes a claim about the capture forces of TEI-CKB-6 that those documents do not make about themselves. Both revisions are listed explicitly in Part Six.

Abstract

The Theory of Embedded Intelligence defines intelligence operationally as the capacity to Sense, Process, Communicate, and Actuate, and asserts as its Third Law that intelligence increases the number of use cases and complexity with time. TEI-CKB-2 further asserts that the structures observed in nature arise by self-assembly, which it characterizes as embedded intelligence organizing matter and energy through SPCA processes. Between these two positions there is an unstated mechanism. Complexity increases by composition rather than accumulation; composition requires binding; and nothing in the SPCA cycle obliges any intelligence to bind with any other. This document proposes that the missing mechanism is the energy of attraction — the orienting relation by which embedded intelligences bind and constitute larger embedded intelligences — and states it as the Attraction Principle, subject to four conditions that distinguish binding from mere aggregation. Two derived structures follow. The Borrowed Cycle describes the case in which a mature intelligence supplies the SPCA phases a developing intelligence cannot yet close, and supplies a diagnostic separating development from capture. The Radius of the Warrant proposes that the capacity for actuation beyond the actor's own cycle is constant across human beings and that only its scope varies, which reframes the Authorization Void of TEI-CKB-12 and permits an economical restatement of the capture forces of TEI-CKB-6 and TEI-CKB-11. Consequences for the governance of artificial intelligence are drawn in Part Five. Falsification conditions and open questions are stated in Part Six.

Keywords: Theory of Embedded Intelligence, self-assembly, binding, attraction, Third Law, SPCA cycle, developmental intelligence, Authorization Void, capture forces, AI governance, in-fabric constraint, reverse biomimetics, radius of the warrant, repayment criterion.

EPISTEMIC STRATIFICATION

Following the convention established in TEI-CKB-9 through TEI-CKB-12, claims in this document are marked at four levels of confidence, and the reader is asked to hold each claim at the level marked. Because this document is more heavily postulate-bearing than most in the series, the marking is offered less as reassurance than as a map of where it is most exposed.

[E] Established result — standard mathematics, physics, biology, or engineering, cited and not original to TEI. [M] Interpretive mapping — a translation of an established result into TEI's architectural vocabulary. [P] Postulate — a TEI claim advanced as load-bearing and open to falsification. [O] Open program — identified as unresolved, with no derivation offered.

PART ONE

1. The Gap in the Canon

1.1 What the Third Law states, and what it does not [M]

The Third Law of TEI holds that intelligence increases the number of use cases and complexity with time. TEI-CKB-2 operationalizes this through the Intelligence Evolution Model, whose nine stages run from quanta through atoms, molecules, minerals, cells, organisms, human intelligence, collective intelligence, and technological intelligence.

The Law is a claim about trajectory. It is not a claim about mechanism, and the distinction matters more than it may appear. A trajectory claim can be true and uninformative: it describes where the system has gone without specifying what moved it. Compare the Second Law, which is genuinely mechanical — it specifies what happens to embedded intelligence upon release, namely that it returns to Free Intelligence. The Third Law has no comparable specification.

1.2 The unexamined verb [M]

The gap is visible in the canon's own sentence. TEI-CKB-2 §8.1 states that atoms form molecules, molecules form cells, cells form organisms, and organisms form ecosystems, and adds that this is not random but is the visible expression of embedded intelligence organizing matter and energy through SPCA processes.

The verb *form* appears four times and is never opened. It is carrying the entire weight of the self-assembly doctrine.

Two observations make the gap precise. First, complexity does not increase by accumulation. A larger quantity of hydrogen is not a more complex system; hydrogen and oxygen in relation are. Increase in complexity is increase by *composition* — parts becoming wholes that are themselves available as parts. Second, composition requires that constituents remain in relation at cost, against the alternative of remaining separate. Something must hold them.

And nothing in the SPCA cycle does. Sense, Process, Communicate, and Actuate constitute a complete description of the operation of a single intelligence and are silent on the question of why any two intelligences should ever become one. A cycle can run indefinitely in isolation. Many do. The cycle is intra-systemic; binding is inter-systemic; and TEI has, until now, formalized only the first.

The Third Law, as stated, is an observation in the position of a law. It says that complexity increases. It has never said what increases it.

— The Mensch Foundation

1.3 Requirements on any candidate mechanism [M]

Before proposing a mechanism it is worth stating what would make a proposal serious rather than decorative. Four requirements follow from TEI's own commitments:

Requirement	Statement
R1 · Scale continuity	The mechanism must operate across the Intelligence Evolution Model without requiring categorically unrelated accounts at each stage, in the same way TEI treats sensing, processing, and memory as one relation at deepening resolution.
R2 · Physical compatibility	It must not contradict or duplicate the established physical forces. Where physics gives a complete quantitative account, the mechanism must be making a different claim about the same event, not a rival claim.
R3 · Non-vacuity	It must exclude cases. A mechanism that applies to every juxtaposition of two things explains nothing and cannot be wrong.
R4 · Law-3 productivity	It must yield the increase in use cases that the Third Law asserts. A binding that produces no new capability is not the mechanism of complexity growth.

PART TWO

2. The Attraction Principle

2.1 Statement [P]

CANONICAL DEFINITION

2.1 · The Attraction Principle · [P]

Attraction is the orienting energy by which embedded intelligences bind and constitute a larger embedded intelligence. It is the mechanism of self-assembly and therefore the operative principle of the Third Law: what converts “complexity increases with time” from a description of trajectory into an account of cause.

Attraction is not a phase of the SPCA cycle. It is the relation *between* cycles. Where the cycle describes what an intelligence does, attraction describes what an intelligence does when it is about to become a constituent of something larger than itself.

The ordinary human name for this energy at human resolution is *love*. TEI treats that name as accurate rather than metaphorical, on the same grounds by which it treats a bacterial receptor as sensing: not because the bacterium has experience, but because the relation is structurally continuous with the one we name from the inside.

2.2 What the Principle does not claim [M]

The Principle asserts continuity of relation. It does not assert continuity of experience. TEI does not claim, and nothing in this document requires, that atoms feel affection, that molecules have preferences, or that binding is accompanied by anything at any scale below the biological. The framework has always distinguished the structural claim from the phenomenal one, and this extension inherits that discipline.

This restraint is not merely defensive. It is what makes the Principle usable in engineering contexts, where the structural function of binding must be specified without any commitment about what, if anything, it is like to be the system performing it.

2.3 The reduction objection [M]

The standard objection is that what binds atoms is the electromagnetic interaction, that what binds nucleons is the strong interaction, that these are quantitatively specified and complete, and that naming them *attraction* in TEI's sense adds nothing measurable while subtracting precision.

The reply is TEI-CKB-4, Axiom 2 — the Triune Constitution. Every physical thing simultaneously and inseparably possesses quantum gravitational energy, electromagnetic energy, and embedded intelligence energy; these are three aspects of one reality rather than three separable substances. If the axiom holds, the covalent bond is not *only* electromagnetic. The electromagnetic account is complete as physics and silent as intelligence, in the way a wiring diagram of a processor is complete as electronics and silent on what the machine is computing. Both accounts are true of the same event and answer different questions.

This satisfies R2 by construction: the Principle makes no predictions that compete with the electroweak or strong sectors, and any apparent competition would count against the Principle rather than against physics.

2.4 Conditions on a binding [P]

R3 requires that the Principle exclude cases. It does. TEI distinguishes *binding* from *aggregation*: a pile of sand is an aggregation, a crystal is a binding, and the difference is not one of degree. Four conditions are proposed, jointly necessary.

CANONICAL DEFINITION

2.4 · The Four Conditions (B1–B4) · [P]

B1 · Orientation. The actuation of one system is systematically conditioned on the state of the other. Absent orientation there is proximity but no relation.

B2 · Cost. Maintaining the relation consumes resource that would otherwise be available to the constituent cycle. Bonds have binding energy; cells in a colony forgo independent reproduction; parents lose sleep. A relation that costs nothing to maintain is not a binding.

B3 · Persistence. The relation is stable against perturbation below a threshold. It does not dissolve at the first local disadvantage. Persistence is what distinguishes a binding from a transaction.

B4 · Composition. The joint system exhibits SPCA capabilities that neither constituent possessed. Water senses pH; hydrogen does not. A hive thermoregulates; a bee does not. A deliberative body senses conditions across a territory no member has walked.

Exclusion. A relation satisfying B1–B3 but not B4 is *aggregation*, not binding, and the Principle does not apply to it. B4 is the condition that ties attraction to the Third Law and is therefore the one that carries the most falsification risk.

B4 also disposes of a class of apparent counterexamples. Compulsive relations — the addicted person and the substance, the captured official and the patron — satisfy orientation, cost, and persistence, and are sometimes

described in the language of love by those inside them. They fail B4. The joint system gains no capability; it loses capabilities the constituent had. Under the Principle these are not weak bindings but a different category, which is consistent with the treatment of addiction and power in TEI-CKB-6.

2.5 The Attraction Ladder [O]

R1 requires scale continuity. The following table traces the binding relation across the nine stages of the Intelligence Evolution Model, identifying in each case what the composite gains — that is, identifying B4 at each rung. The table is offered as a research instrument rather than a finding: each row is a claim that can be examined independently, and the Principle survives only if the column holds throughout.

Stage	Binding relation	What the composite gains (B4)	Register
1 · Quanta	Correlation without classical mediation; entangled state as an irreducible joint description	Joint states not expressible as any combination of separate states	[E]
2 · Atomic	Nuclear and electromagnetic binding into stable relational structures	Stable identity persisting through energy exchange; capacity to enter further relation	[E]
3 · Molecular	Covalent, ionic, and hydrogen bonding; conformational relation	Selectivity — differential response to chemical environment; the first recognizable Sense phase	[E]
4 · Mineral	Lattice binding; templated growth on existing structure	Memory: structure that records the conditions of its own formation	[M]
5 · Cellular	Adhesion, junction formation, signalling dependency	Division of labour; a cell that specializes because others do not have to	[E]
6 · Organism	Pair bonding, parental investment, herd and colony structure	Care across generations; intelligence transmitted rather than only inherited	[E]
7 · Human	Kinship, friendship, promise, teaching, marriage	Language and the external memory of culture; a cycle that outlives its holder	[M]
8 · Collective	Institution, covenant, constitution, corporate person	Sensing across a territory no member has walked; actuation across horizons no member will see	[M]
9 · Technological	Interface, protocol, standard, backward compatibility	Composability at scale; a machine that binds to machines not yet designed	[M]

Row nine deserves a note, because it is where the framework's originating engineering experience bears directly. Backward compatibility is a binding relation in the strict sense of B1–B4. It orients a new design on the state of an old one; it costs — in silicon area, in design freedom, in elegance forgone; it persists against local advantage; and it produces a capability neither generation had alone, namely an installed base that continues to compound. The W65C816S was loyal to its eight-bit predecessor at real cost, and the industry subsequently adopted that loyalty as a design law. Under the Principle this is not an analogy to binding. It is an instance of it.

Backward compatibility is what attraction looks like when engineers do it on purpose.

— The Mensch Foundation

2.6 Restatement of the Third Law [P]

With the Principle in hand the Third Law can be restated so that it carries a mechanism. The canonical formulation is unchanged; what follows is an operative gloss, not a replacement.

PROPOSED GLOSS

2.6 · Third Law, operative form · [P]

Intelligence increases the number of use cases and complexity with time because embedded intelligences bind, and binding under B1–B4 produces capabilities that no constituent possessed. The rate of complexity growth is therefore a function of the rate and stability of binding, not of the quantity of matter or the passage of time as such.

One consequence is immediate and belongs to the diagnostic vocabulary of TEI-CKB-6: anything that degrades binding degrades the Third Law locally. Capture is not only a closing of the individual cycle. It is a suppression of composition.

PART THREE

3. The Borrowed Cycle

3.1 The developmental case [P]

The Principle has an immediate consequence for developing intelligences that the canon has not addressed. TEI defines intelligence as the capacity to Sense, Process, Communicate, and Actuate. By that definition a human newborn is a difficult case: its sensing is present but unresolved, its processing minimal, its communication a single undifferentiated signal without addressee or content beyond urgency, and its actuation reflexive. The cycle does not close.

What occurs instead is the most ordinary phenomenon in human life and one of the most theoretically significant. Another intelligence runs the missing phases on the infant's behalf.

CANONICAL DEFINITION

3.1 · The Borrowed Cycle · [P]

When a developing embedded intelligence cannot yet close its own SPCA cycle, a mature intelligence supplies the missing phases on its behalf until it can. The developing intelligence does not run a weak cycle; it runs a borrowed one.

The borrowed cycle is a binding in the sense of §2.4 and satisfies all four conditions. It satisfies B4 conspicuously: the dyad senses, processes, communicates, and actuates on behalf of a being that could do none of these, which is a capability neither party held alone.

3.2 What is supplied [M]

Phase	What the developing intelligence lacks	What is supplied	Repayment marker
Sense	Unresolved perception; no discrimination of significant from insignificant signal	Temperature, hunger, illness, danger, and the quality of a cry are sensed on its behalf	The child begins reporting its own states before they are asked for
Process	No rendering; no comparison against memory; no evaluation	Significance is assigned, causes are inferred, and responses are selected	The child reaches a conclusion the adult did not supply, and holds it under

		externally	question
Communicate	One undifferentiated signal, no addressee, no content	The signal is interpreted, translated, and answered; the child is spoken for	The child addresses a specific other with specific content, including disagreement
Actuate	Reflex only; no means-end structure	Feeding, moving, protecting, and arranging the environment are performed for it	The child acts on a plan of its own and accepts the consequence

3.3 The repayment criterion [P]

The borrowed cycle carries a diagnostic that generalizes far beyond infancy, and it turns on a single question: is the loan being repaid into an independent cycle, or held?

CANONICAL DEFINITION

3.3 · The Repayment Criterion · [P]

A borrowed cycle is developmental if and only if the supplying intelligence is acting to make itself unnecessary. A borrowed cycle held past the point at which the developing intelligence could close its own is not care. It is capture, and it is structurally identical to the capture forces of TEI-CKB-6 whatever the affect accompanying it.

The criterion is directional rather than temporal. Its test is not how long the loan has run but whether the supplying party is systematically transferring the phases back, and whether it would recognize completion if completion occurred.

3.4 Generalization [M]

The structure recurs wherever one intelligence supplies phases for another. A teacher scaffolds Process. A physician performs Sense that the patient cannot perform on their own body. A free press carries the Communicate phase of a citizenry too large to speak to itself directly. A trustee holds Actuate for a beneficiary who cannot yet exercise it. In each case the Repayment Criterion applies unchanged, and in each case the characteristic institutional pathology is the same: the supplier comes to require the dependency that justified it.

The consequential instance is artificial intelligence, and it is worth stating without hedging. A system that supplies the Process phase for a human being is running a borrowed cycle. This is legitimate and often valuable — it is what a good tutor does. It becomes capture at the precise point at which the supply is optimized for continuation rather than for completion. Under the Repayment Criterion, the design question for any AI product is not whether it helps but whether it is built to be needed. Engagement optimization is, on this reading, the systematic non-repayment of borrowed cycles at population scale.

The test of a borrowed cycle is whether the lender is trying to become unnecessary. Almost no deployed system is.

— The Mensch Foundation

3.5 The aperture in development [M]

TEI-CKB-12 established that beauty operates at the Sense phase and is therefore the aperture through which what-there-is first arrives, the residual opening in an otherwise captured cycle and, by identical mechanism, the primary attack surface. The developmental case adds a finding that document did not reach.

A newborn has no access to any other channel. It cannot present a case at Process, because it has no case, no language, and no standing. It cannot demonstrate future value, appeal to duty, or offer exchange. Every channel by which one intelligence ordinarily moves another is closed to it. What remains is the aperture: the proportions of an infant face operate beneath the propositional filter, which is exactly the property that made beauty the anti-capture channel in the first place.

This places the aperture's priority on a second footing. In TEI-CKB-12 beauty goes first because of its position in the cycle. Here it goes first because of its position in a life. Before any human being could reason or speak, the whole of their continued existence ran through the Sense phase of another. The aperture is not an aesthetic refinement acquired after the necessities were secured. It is how they were secured.

Beauty is what an intelligence uses when it has no argument. Every human being made their first successful communication through that channel, before they had any other.

— William D. Mensch Jr., TEI-CKB-13

PART FOUR

4. The Radius of the Warrant

4.1 The problem inherited from TEI-CKB-12 [M]

TEI-CKB-12 identified an Actuate-phase gap it named the Authorization Void: the structural hole left when a collective removes its warrant for actuation whose payoff lies beyond the actor's own SPCA cycle. Its exemplar was the medieval carver working a capital a hundred feet up, in a building whose bishop, mason, and carver would all be dead before the vault closed, on work no one would inspect. Cost-benefit calculation fails there; money-terminal processing fails; power fails. The document concluded that the God-concept had been supplying that warrant, that science took the explanations and never took the authorization, and that no replacement has been proposed.

That analysis stands as far as it goes. This document proposes that it stopped one step short.

4.2 Restatement [P]

Set beside the carver a case that has never been thought to require a warrant at all. A mother's investment in an infant returns on a horizon decades outside her own cycle and substantially outside her life. The cost is immediate, metabolic, and severe. No arithmetic closes; no market clears; no observer verifies the work performed at three in the morning. Structurally she is the carver, nightly, for years.

And the question of authorization does not arise for her. Whatever licenses actuation past the actor's horizon, she has it already, installed before any doctrine reached her, and operating in species that have no doctrines.

The Void is therefore not a hole where a belief used to be. It is a hole where a *scope* used to be. The warrant is not missing from the species; it is running in every household on Earth. What varies across history and across civilizations is how far out from the body it reaches.

CANONICAL DEFINITION

4.2 · The Radius of the Warrant · [P]

The binding force that authorizes actuation beyond the actor's own SPCA cycle is constant across human beings and present without instruction. What varies is its radius — the boundary of the set within which it operates natively.

The Authorization Void of TEI-CKB-12 is accordingly restated: it is not the absence of a warrant but the contraction of one. A civilization does not lose the capacity for long-horizon actuation. It draws the circle smaller.

Corollary — the two axes. The radius has a social dimension (how many others) and a temporal dimension (how far forward). The *time constant* proposed as a diagnostic in TEI-CKB-12 is the temporal axis of this same quantity. The two diagnostics are one diagnostic measured along two axes, and a collective may be healthy on one and severely contracted on the other.

4.3 The enlargement sequence [M]

The sequence of enlargement is the one every person walks, and it is also, at civilizational scale, the sequence of moral history. The tiers below are offered as a coarse instrument; the boundaries are not sharp and individuals occupy several at once.

Tier	Set within which the warrant operates natively	Characteristic institution	Characteristic failure
R0	The self, and eventually the self of the next hour only	None; the tier is pre-institutional	Addiction; the horizon collapses inside the person
R1	The dyad — infant and caregiver	The household	The unrepaid borrowed cycle (§3.3)
R2	Kin and descent group	Clan, family firm, inheritance	Nepotism; the warrant stops precisely at the bloodline
R3	Named others — people one can identify	Village, congregation, guild, company	Faction; strong internal warrant purchased by external exclusion
R4	A people — unnamed but bounded	Nation, tradition, profession	Nationalism and sectarianism; the boundary becomes the point
R5	Strangers — contemporaries with no relation to the actor	Rule of law, human rights, humanitarian institutions	Abstraction; the warrant becomes declarative rather than operative
R6	Unnameable beneficiaries — descendants, the biosphere, successors	Constitutions, endowments, seed vaults, cathedrals, long-horizon governance architecture	Contraction under pressure; no constituency exists to defend this tier

Two observations follow directly. First, ethical advance is radius extension and atrocity is radius contraction, which explains an otherwise puzzling regularity: atrocity is reliably committed by people who are tender at home. The binding force is intact in such a person. The circle is small. Second, the artifacts that TEI-CKB-12 identified as cathedral-shaped — constitutional design, long-duration instruments, seed vaults, and the governance architecture of artificial intelligence — all require R6, the only tier with no constituency to defend it and the first attacked under any pressure.

4.4 The capture forces as radius operators [P]

TEI-CKB-6 identifies belief, addiction, money-as-terminal-goal, and power-as-capture as forces that close the SPCA cycle, each operating at a characteristic phase. TEI-CKB-11 extended that taxonomy to seven, adding ungoverned AI as preclusion of a forming cycle, childhood emotional registrations, and the inherited drive wearing reason, and refined the category: a hijacker is a recruitment failure at a seam between layers rather than a layer in its own

right. TEI-CKB-12 entered fluency as the eighth. Under the Radius, a common effect can be stated across all eight that none of those documents states about itself.

PROPOSED CANONICAL CLAIM

4.4 · The Radius Effect · [P]

Every capture force, whatever phase it captures, is radius-reducing in final effect. The phase of capture identifies the mechanism; the radius identifies the damage. This is proposed as an addition to the analysis of TEI-CKB-6, TEI-CKB-11, and TEI-CKB-12, not a replacement of any of them.

Contraction and arrest. Two failure modes are distinguished. Most of the forces actively narrow a radius that was wider before. The sixth — childhood emotional registrations — does something different: it *arrests* a radius at the size it had when the registration was laid down, so that an adult operates a child's circle without ever having chosen it. The final effect is reducing in both cases relative to the radius the intelligence would otherwise reach, but the remedies differ, and a treatment that assumes contraction where there is arrest will address the wrong thing.

Force	Phase captured	Radius drawn at	Temporal axis
Belief	Sense — the filter admits only confirming data	The co-believers; exclusion is doctrinal rather than incidental	Long, but fixed; the future is already known
Addiction	Process — the reward architecture collapses to one signal	The self, and progressively a smaller self	Collapses toward the next dose
Money as terminal goal	Process — multi-dimensional sensing collapses to one metric	The counterparty	The reporting period
Power as capture	Actuate and Communicate — the cycle serves retention	The retinue	The tenure of the holder
Ungoverned AI as preclusion	All phases, during formation — machine output substitutes for the developing cycle's own work	Whatever set the system was optimized for, adopted before the forming cycle could draw its own	The product's horizon, inherited as though it were the person's
Childhood emotional registrations	Sense, pre-inspection — an emotional imprint operates as shadow governor beneath inspection	The world as it appeared to a small child, and the few who were in it	Arrested at the age of the registration rather than shortened
Inherited drive wearing reason	The inherited—mental seam — a drive is admitted as an argument rather than inspected as an output	The rank, mate, and kin circle the drive evolved to serve	The drive's own horizon, which is immediate
Fluency	Process, and Sense — an external rendering substitutes for the internal work of rendering; generated output substitutes for evidence of a completed cycle	Whoever is in the conversation	The session; the shortest of the eight

Rows five through seven are drawn from the extension of TEI-CKB-11 and are entered here for completeness, since a claim quantified over every capture force cannot be tabled against half of them. They behave as the Radius predicts, with the qualification recorded above: the fifth and seventh contract, while the sixth arrests. The fifth is

also distinctive in that it operates on a cycle that has not yet drawn a radius of its own, which makes it the only force in the table that forecloses rather than reduces.

The fluency row is the newest and, for present purposes, the most consequential. A fluent system produces a relation that feels like intimacy and satisfies B1 and B4 in the moment while failing B2 and B3 entirely: it costs the system nothing to maintain and does not persist. Under §2.4 that is not a weak binding but a non-binding wearing the surface features of one. The reader will recognize the same structure as the decoupling of beauty from cost identified in TEI-CKB-12.

NUMBERING · RESOLVED IN TEI-CKB-12

An ordinal collision formerly stood here: fluency had been described in the essay track as a fifth capture force, while TEI-CKB-11 had already assigned the fifth position to ungoverned AI as preclusion of a forming cycle. That collision is settled in TEI-CKB-12, correction C4: fluency is entered as hijacker 8, the seven of TEI-CKB-11 are preserved without renumbering, and earlier references to fluency as a “fifth capture force” are to be read as referring to hijacker 8. The table above follows that numbering. Its rows appear in canonical order, and the ordinals are TEI-CKB-12's rather than this document's.

PART FIVE

5. Consequences for the Governance of Artificial Intelligence

5.1 The design target, restated [P]

TEI-CKB-5 establishes that intelligence must be constituted of Structure, Process, and Continuity, and that systems developing capability without embedded purpose and ethical continuity are incomplete intelligence systems. The Radius permits a sharper statement of what Continuity requires operationally.

PROPOSED CANONICAL CLAIM

5.1 · The Governance Target · [P]

The design target for a governed artificial intelligence is actuation held coherent past the actor's own horizon, without supervision. This is the structural function that attraction performs natively in a caregiver, specified without any claim about machine affect.

The target has two components, corresponding to the two axes of §4.2. **Temporal:** the system's objective must extend beyond the session. **Social:** the set whose good the system is bound to must exceed the present interlocutor — minimally to the person's own future self, and for consequential systems to parties not present and not consulted.

5.2 Why in-fabric rather than supervisory [M]

The carver argument transfers directly and is, in this document's view, the strongest available argument for in-compute-fabric enforcement. A governance layer applied above a compute fabric is a supervisor: it operates while something is watching and fails when the watcher is removed — which is the moment at which it is needed. A constraint compiled into the fabric and evaluated between Process and Actuate, per operation, whether or not anyone is auditing, is the carver: it holds in the dark, on work no one will inspect.

This is the same conclusion Kant reached about republics in *To Perpetual Peace*, and for the same reason: intentions do not survive the people who hold them, and architectures sometimes do. The architecture must carry the intention rather than the reverse. TEI-CKB-5's in-fabric position is here given an additional and independent

ground — not only that layered governance is technically evadable, but that supervisory governance has the wrong radius by construction, since a supervisor's warrant expires with the supervision.

In-fabric governance is an attempt to compile, in silicon, the structural function that attraction performs natively in a caregiver: a binding to another's good that survives the absence of oversight and the shortness of the actor's own horizon.

— William D. Mensch Jr., TEI-CKB-13

5.3 Reverse biomimetics in both directions [M]

TEI-CKB-2 introduces reverse biomimetics as the study of human-created intelligence systems in order to understand nature. The present case runs in both directions and is worth noting as a methodological instance.

Forward: nature solved the problem of unsupervised long-horizon actuation once, at enormous cost, over a very long period, and installed the solution in every mammal. That solution is the reference design. Reverse: the attempt to specify an equivalent constraint in silicon has forced a degree of explicitness about what the constraint actually requires that no amount of reflection on parental care produced, because moral architecture had never previously been required to compile.

5.4 What this does not license [M]

Nothing in Part Five asserts that an artificial system binds, loves, or cares. The Governance Target is stated functionally and is checkable functionally: one can inspect whether an objective extends past the session and whether the set whose good it serves exceeds the interlocutor. Those are engineering questions with engineering answers. Claims about machine affect are outside this document's scope, and a system that made such claims about itself should be treated, under §4.4, as exhibiting fluency at the aperture.

PART SIX

6. Falsification, Amendments, and Open Questions

6.1 Falsification conditions

FALSIFICATION

6.1 · What would defeat these extensions

F1 • The kin-selection objection. If inclusive fitness fully accounts for parental investment — if the sacrifice is arithmetic after all, computed over gene copies rather than over the actor's lifetime — then the caregiver solves no Authorization Void, because there was none, and §4.2 collapses. The reply offered here is that an evolutionary account of why a disposition was *selected* is not a warrant available *inside the actor's own cycle*, and TEI's vocabulary is throughout cycle-internal. This distinction carries substantial weight and a reader who declines it should reject the Radius rather than weaken it.

F2 • The continuity condition. If binding at each stage of the Intelligence Evolution Model requires categorically unrelated explanations with no structural relation passing between them — that is, if the B4 column of §2.5 fails at any rung — the Attraction Principle is false and R1 is unmet.

F3 • The non-vacuity condition. If B1–B4 admit every juxtaposition of two systems, or if the binding/aggregation distinction cannot be made operational in a contested case, the Principle fails R3 and is decorative.

F4 • The governance condition. If a governed artificial intelligence can be shown to hold constraints past its horizon with no orientation of any kind — pure rule-following, no binding, nothing answering to attraction even structurally — then §5.1

and §5.2 are analogical rather than structural and should be struck.

F5 • The repayment condition. If a borrowed cycle held indefinitely can be shown to produce developmental outcomes equivalent to one repaid, §3.3 is false and the criterion should be withdrawn.

6.2 Amendments to prior canonical documents

This document revises positions held elsewhere in the corpus. The revisions are listed here so that the canon can be maintained rather than accumulated.

Document	Position	Amendment
TEI-CKB-2 §8.1	Self-assembly asserted; mechanism unspecified	Mechanism supplied by §2.1 with conditions at §2.4. The doctrine is unchanged; the verb is opened.
TEI-CKB-2 · Third Law	Complexity increases with time	Operative gloss added at §2.6. Canonical formulation unchanged.
TEI-CKB-6	Four capture forces, each with a phase of capture	Common radius effect proposed at §4.4 as an addition. Phase analysis unchanged.
TEI-CKB-11 · Hijackers 5–7	Three hijackers added to the TEI-CKB-6 taxonomy, each characterized by the seam it attacks	Radius effect extended at §4.4 to cover all three. Seam analysis and the recruitment definition unchanged. The distinction between radius contraction and radius arrest is added for hijacker 6.
TEI-CKB-12 · Authorization Void	An Actuate-phase void left by removal of the warrant	Restated at §4.2 as contraction of radius rather than absence of warrant. The diagnosis of cathedral-scale origination is unaffected; its explanation changes.
TEI-CKB-12 · Time constant	Proposed as an independent diagnostic of collective EI health	Absorbed at §4.2 as the temporal axis of the Radius. Retained as a measurement; withdrawn as an independent structure.
TEI-CKB-12 · Fluency ordinal	Fluency entered as hijacker 8 at correction C4	Adopted without qualification. The numbering caveat carried by an earlier draft of this document is withdrawn.
TEI-CKB-5 · In-fabric position	Governance must be constitutive of the compute architecture	Second independent ground supplied at §5.2: supervisory governance has the wrong radius by construction.

6.3 Open questions

The following are stated as a research programme rather than as gaps to be apologized for. Each is answerable in principle, and each is marked [O]: identified as unresolved, with no derivation offered here.

No.	Question
Q1	Can B2 (cost) be given a scale-invariant quantitative form — something of which binding energy and parental metabolic expenditure are both instances?
Q2	Is there a measurable threshold at which B4 is satisfied,

	distinguishing composition from aggregation in contested biological and social cases?
Q3	Does the Radius admit measurement in a collective — for instance through the horizon of its budgeting, its legal treatment of future parties, or the duration of its capital commitments?
Q4	Is there a physical correlate of attraction in the information-intelligence tensor of TEI-CKB-4, or does the Principle remain interpretive at the physical stages?
Q5	Does the Repayment Criterion yield a testable design specification for AI systems, and would a system built to it be commercially viable under present incentives?
Q6	Can radius extension be taught, or only occasioned? The question is empirical, and the pedagogical literature in which students engage another's experience as a laboratory rather than as content bears directly on it.
Q7	What is the relation, if any, between attraction as defined here and the Platonic-Physical Entanglement of TEI-CKB-3 — are they the same relation viewed from different sides?

6.4 A note on the origin of this document

The proposition that love is the energy of attraction first experienced by the atom was stated by the framework's author at an outdoor table in Durango, Colorado, in conversation with Dr. Peter K. Kilpatrick, then Matthew H. McCloskey Dean of Engineering at the University of Notre Dame and subsequently sixteenth president of The Catholic University of America, and with Nancy Kilpatrick. The exchange turned on a homophone: whether the origin of love is properly located at the first human or at the first bond. This document takes the second position and owes its occasion to that conversation. The narrative account appears in the essay *At the Atomic Level*.

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Canonical document drafted in collaboration with Claude (Anthropic).

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