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Knowledge Organization Systems as Epistemic Instruments: Mapping the "Social Organism" through Convergence

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Abstract

Universal Knowledge Organization Systems (KOS) bear the purposive fingerprints of the social organism that produced them—culturally embedded, non-neutral artifacts ripe for epistemic instrumentation. This paper revives the historical pursuit of mapping society's "organs" as durable coordination functions (e.g., provisioning, habitat, protection), sidestepping the hubris of ontological precision through the pragmatism of design science. To achieve this, Convergent Functional Extraction (CFE) is introduced: an auditable method providing procedural warrant for constructing functional heuristic overlays of the social organism. Feasibility of method is demonstrated on two baseline candidates—food provisioning and habitat construction—tested by triangulating across structurally distinct representational regimes: societal knowledge (DDC), labor (ISCO-08), and enforced rules (U.S. Code). This procedural warrant grounds future design artifacts for interdisciplinary navigation, pedagogy, and AI-facing routing layers amid cultural and technological change.

1.0 Introduction: From Neutrality Critique to Epistemic Instrumentation

Widely critiqued for embedded cultural bias, universal Knowledge Organization Systems (KOS) reflect thought communities and rest on contestable epistemic assumptions (Hjørland 2017), functioning as invisible infrastructure that helps shape societal memory (Bowker and Star 1999). Building on these critiques, this paper asks a further methodological question: can the non-neutrality of KOS be made explicit and used as epistemic evidence of the cultural and functional shapes that produced them?

This paper makes a pragmatic pivot. If classifications are purposive artifacts (Hjørland 2025), their non-neutrality can be treated not only as a liability but also as an epistemically usable feature, provided the orientation is made explicit and the procedure remains auditable. This move aligns with Feinberg's (2007) call for responsible bias. The bounded orientation adopted here is modeling function-first heuristics of the "social organism" for the purpose of collective viability and social health, not as a universal moral doctrine, but as an inspectable premise for heuristic construction.

Under this orientation, the paper revisits the long-standing problem of the "social organism" by asking whether KOS can help detect durable coordination functions: recurring demands that human collectives must plausibly satisfy to persist across time and cultural variation (e.g., provisioning, habitat, protection, care, governance).

Society is not asserted to be literally a biological organism; rather, the sociological "social organism" tradition is used as a modeling device.

The central research question is methodological: by what auditable procedure can purposive KOS be used as epistemic instruments to detect durable coordination functions? To answer this, the paper introduces Convergent Functional Extraction (CFE), a design-science method for constructing and testing function-first heuristic overlays of the social organism. CFE treats existing taxonomies as evidence-bearing materials and tests proposed coordination functions through triangulation across three macro-institutional classification regimes: what society knows (DDC), the labor it performs (ISCO-08), and the rules it enforces (U.S.C.). Throughout this paper, *macro-institutional classification regime*—and its shorthand *regime*, including compounds such as *cross-regime*—refers to a society-wide classification system that operates from a structurally distinct vantage point and is institutionally maintained over time. The compound differs deliberately from the "regime of information" lineage in LIS (Frohmann 1995; González de Gómez 2012), which focuses on power critique of information stabilizations; the present compound focuses on epistemic triangulation. Cross-regime convergence across these highly contrasted vantage points provides procedural warrant that a proposed function is not merely an artifact of a single classificatory logic, while residual diagnostics and a minimal viability stress test discipline boundary decisions and resist category inflation.

To demonstrate feasibility, CFE is applied to two baseline candidates: food provisioning and habitat construction. The remainder of the paper outlines the theoretical positioning, specifies the CFE protocol, presents the exemplars with an audit trail, and closes with limitations and a replication agenda.

2.0 Theoretical Positioning: Orientation, Function, and Convergent Warrant

2.1 Orientation and Modeling Stance

This paper treats KOS as evidence-bearing artifacts for constructing heuristic overlays, provided their orientations are explicit. The bounded evaluative stance is collective viability and social health. This stance is neither universal nor exclusive—it is declared so premises remain inspectable and mapping decisions are kept accountable. "Health" is used minimally as persistence and coordination capacity under constraints, rather than a thick moral doctrine.

The model draws on sociological traditions that frame society as exhibiting organism-like coordination dynamics, where division of labor generates recurrent demands for provisioning, shelter, protection, care, governance, and meaning-making, even as institutions vary (Durkheim [1893] 2014; Spencer 1860). No metaphysical identity between society and a biological organism is claimed. The stance is methodological: if these demands are durable, traces of them should be recoverable from KOS patterns, enabling functions to be reverse engineered. For instance, the persistence of DDC 610 suggests a "Healer" function, and DDC 340 a "Judge" function, with such bibliographic clusters serving as proxy traces of society's durable knowledge footprint.

This modeling stance follows Durkheim's (1893) operational logic. Because internal social solidarity is too abstract for direct observation, it must be inferred through durable external indices. For Durkheim, law served as such a "visible symbol" (Durkheim [1893] 2014, 24). By the same logic, KOS and adjacent taxonomic systems can be treated as classifiable surfaces through which recurrent coordination demands become partially observable. "Organ" language refers here to function-first role clustering, not anatomical homology.

2.2 Durable Coordination Functions and the Functional Hypothesis

CFE targets durable coordination functions: recurring demands that appear across civilizations and are plausibly required for sustained collective persistence (e.g., provisioning, habitat, protection). These are not literal biological organs; rather, "function" serves as heuristic structural vocabulary, naming what domains contribute to coordination rather than their substantive forms.

Division-of-labor and emergence arguments motivate the hypothesis that such demands recur despite institutional variation. Food provisioning might shift from foraging to industrial agriculture, and habitat from tents to steel frames, but the underlying coordination need persists. The question is not variability in forms, but durability in demands, warranting a design-science approach to extract and organize them into practical heuristic overlays.

2.3 Why Cross-Regime Convergence is Epistemically Relevant

If a coordination demand is durable, it should leave detectable traces across structurally distinct representational regimes. Rather than relying on bibliographic classification alone, CFE triangulates across three dimensions of societal operation: **what a society knows** (bibliographic regime via DDC, a universal KOS stabilizing long-running literatures and pedagogic domains for epistemic warrant through persistent clusters), **what it does** (occupational regime via the ISCO-08 (International Labour Office 2012), grouping work by task similarity to reflect division-of-labor recognition and vocational warrant), and **what it regulates** (regulatory regime via the United States Code (Office of the Law Revision Counsel 2024), chosen for its cohesive structure and recognizability as a demonstration regime, serving as a homeostatic index akin to Durkheim's law, with future extensions to alternatives like EUR-Lex for cross-cultural testing amid diverse epistemologies).

Cross-regime convergence is therefore treated as procedural warrant—evidence that a candidate function is not merely an artifact of one classificatory logic. This is not proof of universality. It is an auditable triangulation strategy for testing whether a candidate recurs across knowledge, labor, and regulation. Paired with residual diagnostics and viability stress tests, convergence helps discipline category inflation while supporting robust heuristic artifacts.

3.0 Method: Convergent Functional Extraction

CFE is a structured design-science guide for deriving function-first overlays from typically subject-centered KOS (e.g., DDC) under a declared evaluative stance. The aim is to treat existing KOS as epistemic instruments detecting durable coordination demands across time and cultural variation. For each candidate, CFE produces a provisional function statement, an anchored cross-regime footprint, and an audit trail designed for transparency and critique.

3.1 Design Logic and Convergence Rule

The premise is straightforward: If a coordination demand is durable, it should leave persistent, non-trivial traces across structurally distinct representational regimes, despite local bias and historical entanglement. CFE therefore triangulates across the three regimes operationalized here—bibliographic (DDC), occupational (ISCO-08), and regulatory (U.S.C.)—to establish procedural warrant and build confidence through convergence.

Inputs include the candidate function hypothesis, DDC for bibliographic clustering, ISCO-08 for task/duty corroboration, U.S.C. for regulatory and homeostatic corroboration, and a mapping log documenting anchors, rationale, and boundary inclusions/exclusions. **Outputs** comprise a standardized function statement with scope notes, **anchored footprints** in each regime (DDC ranges; ISCO groups; U.S.C. Titles/Chapters), a **convergence assessment**, and **residual/coverage notes** for iteration.

The operational convergence rule (Stage 3 Pass condition) treats a candidate as convergent only if all three conditions hold: **structural presence** (stable footprint in each regime), **functional coherence** (regimes support a consistent "what it does" description), and **non-triviality** (mapping is neither generic—"everything maps"—nor so narrow that it collapses into a single technique or institution).

Guardrails ensure CFE remains iterative and anti-totalizing; **residual/coverage diagnostics** (Stage 4) and a **minimal viability stress test** (Stage 5) prevent category inflation and premature completeness, fostering heuristic artifacts that are auditable yet adaptable.

3.2 Stage 1: Candidate Hypothesis Formulation

The goal is to state a plausible candidate coordination function, providing a focused starting point for exploration.

Inputs draw from heuristic guides rather than proofs: division-of-labor literature, cross-cultural/historical recurrence observations, viability constraints as a seed set (e.g., food, shelter, protection), and informed intuition from broader patterns (such as human needs hierarchies or primitive societal roles).

The required candidate template, which is logged for traceability, includes the function (verb–object, e.g., "provision food," "construct/maintain habitat"), a purpose claim (what it

enables for collective persistence), scope notes (boundaries with adjacent functions via explicit inclusions/exclusions), and expected traces (where it should appear in DDC/ISCO-08/U.S.C. if durable).

Filters for Stage 1 acceptance emphasize cross-temporal and cross-cultural recognizability (plausible across historical periods and modes of production despite changing forms) and distinctness (neither "everything society does" nor a single culturally specific practice). The **output** is the candidate statement with a mapping log entry. Stage 1 establishes a target and expectations, not durability, laying a flexible foundation for the heuristic process, where initial insights are refined through subsequent checks.

3.3 Stage 2: Structural Detection in DDC (Bibliographic Regime)

The goal is to check for persistent clustering in a universal KOS like DDC, spotting stabilized spaces that suggest a function's real presence and durability.

The procedure, logged for traceability, starts with **selecting anchors** (one or more DDC ranges expressing the core activity), **defining the footprint** (recording sequential or essential nearby ranges, plus explicit exclusions), and **classifying its strength** as *strong* (a solid contiguous block or bounded sub-blocks), *fragmented* (coherent activity split across ranges due to disciplinary quirks, with the split explained—e.g., architecture in 710-729 vs. trades in 690-698), or *weak/ambiguous* (scattered references without a clear center).

Stage 2 passes with a stable anchor and non-trivial footprint (contiguous or defensibly fragmented), offering literary warrant through DDC's stabilized spaces. Though not full proof of durability, it turns initial hunches into grounded patterns worth exploring across regimes.

3.4 Stage 3: Cross-Regime Convergence Testing (DDC + ISCO-08 + U.S.C.)

The goal is to reduce overfitting to any single KOS by triangulating the Stage 2 footprint across knowledge, labor, and law regimes—revealing alignments that build confidence in the candidate's broader relevance beyond one classificatory logic.

The procedure, logged for auditability, begins with selecting anchors in each regime (DDC: Stage 2 footprint; ISCO-08: group(s) whose task definitions match the candidate; U.S.C.: Title(s) or Chapter(s) that regulate the boundaries, property, and restitutory maintenance of the activity), creating a mapping table for each (with anchor IDs, 1–2 sentence justification, and boundary exclusions), and applying the convergence rule (checking structural presence, functional coherence, and non-triviality).

The Stage 3 outcome is a **pass/fail assessment**—accompanied by dispute-ready notes specifying which criterion fails, if any—ensuring the heuristic process stays transparent and adaptable as cross-regime patterns emerge and refine the emerging artifact.

3.5 Stage 4: Residual/Coverage Diagnostic

The goal is to treat unmapped remainders as an iterative diagnostic, turning gaps into insights for refinement. Because classification infrastructures reveal their hidden architectures most clearly at their edges, residual categories—what is forced into an awkward remainder or labeled "other"—are highly epistemically informative (Bowker and Star 1999). The procedure, logged simply, subtracts mapped footprints from the total regime space (e.g., DDC), identifies significant unmapped clusters, and labels each as a missing-function indicator (suggesting one or more new candidate(s)), a boundary case (scope overlap or underspecification), or transient/culture-bound (historically contingent with unstable durability).

The output consists of residual log entries that guide subsequent candidate proposals and boundary adjustments. As candidates accumulate and footprints are subtracted, these diagnostics progressively shrink the unmapped space, signaling potential completeness when coverage approaches full without forced fits—fostering an evolving heuristic artifact that learns from its own structural leftovers.

3.6 Stage 5: Minimal Viability Stress Test

The goal is to serve as a final plausibility gate, weeding out contingent domains before elevation to core functions.

The core prompt asks: Could a society persist durably without this function? The decision rule yields a **pass** (absence plausibly threatens persistence across eras), **borderline** (partial substitutability; retain with refined scope), or **fail** (plausibly dispensable/contingent; demote or treat as sub-function).

Interpretation relies on a plausibility-based heuristic, drawing from comparative historical or anthropological intuition; not a formal necessity proof, but a practical check to ensure the emerging functions hold real weight.

3.7 Evaluation Scope (Method Evaluation, Not Ontology)

CFE is evaluated here as a design-science method for constructing heuristic artifacts, not a finalized social anatomy. **In-scope criteria** include *transparency* (anchors, boundaries, and rationales recorded as an audit trail), *iterative applicability* (independent analysts can adapt stages to obtain comparable footprints, allowing documented interpretive variance), *convergence discipline* (criteria applied consistently with dispute-ready notes), and *anti-totalizing safeguards* (residuals and stress tests reduce premature completeness and category inflation). This emphasis on practicality ensures the process yields usable overlays that are pedagogical and contestable rather than exhaustive proofs.

Conversely, **out-of-scope goals** include proving metaphysical organism claims or eliminating bias. Stronger external validation—such as inter-rater agreement, mappings

against alternative domains, or testing under varied orientations—is deferred to future work, explicitly inviting the collaborative refinement of these heuristic tools.

4.0 CFE Testing

Figures 1 and 2 provide the primary demonstration. Stage 4 notes focus on boundary tensions and selected observations, since exhaustively displaying all unmapped residuals across all three systems is impractical in figure form. In the underlying research, unmapped ranges were fully recorded through subtractive mapping.

FIGURE 1 | Farmer: Food Provisioning

STAGE 1 Candidate	**FUNCTION**	Provision food and raw biological inputs
	PURPOSE	**Secure metabolic/material inputs (food, fiber) from ecological systems to support collective persistence**
	SCOPE	***Includes*** cultivation, animal husbandry, harvesting, basic conservation; ***excludes*** downstream processing/manufacturing, culinary preparation, market distribution
	SOURCE/ EXPECTATIONS (logged)	Seeded from survival constraints and division-of-labor heuristics (hypothesis); expected traces include a strong DDC agriculture footprint, ISCO farming task families, and a U.S.C. regulatory footprint centered on agricultural
	FILTERS	Timelessness: **Pass**; Distinctness: **Pass**
STAGE 2 DDC Structural Detection	**ANCHOR/ FOOTPRINT**	**630–639: Agriculture & related technologies** forms a large contiguous block spanning ***general methods*** (631), ***plant crops*** (633–635), and ***animal husbandry*** (636), with nearby contextual framing in ***human ecology*** (304.2)
	CLUSTER STRENGTH	**Strong;** sustained allocation provides literary warrant for ecological-input provisioning as a stabilized domain
STAGE 3 Cross-Regime Convergence	**ANCHORS**	***DDC*** 630–639; ***ISCO-08*** Major Group 6 (Skilled Agricultural, Forestry and Fishery Workers, with market-oriented and subsistence tasks centered on soil preparation, planting, tending, harvesting); ***U.S.C.*** Title 7 (Agriculture, offering regulatory warrant for commodity exchanges, crop insurance, and resource conservation)
	CONVERGENCE CRITERIA	Structural presence: **Pass** Functional coherence: **Pass** Non-triviality via exclusions: **Pass**
	RESULT	**Convergent;** retain candidate
STAGE 4 Residual Notes	Boundary tensions emerge adjacent to provisioning, where DDC shifts toward household preparation or food technology. These motivate separating provisioning from downstream transformation in iterations. Large unmapped blocks (e.g., health, defense) signal potential missing functions, not defects.	
STAGE 5 Minimal Viability Stress Test	A society cannot persist without coordinated food provisioning, though forms vary (foraging to industrial agriculture). Sustained absence plausibly yields collapse or instability.	
	DECISION	**Strong Pass;** retain as durable coordination function

FARMER
CFE record

FUNCTION
Food Provisioning

SCOPE
In: Cultivation, husbandry, harvest, conservation
Out: Processing, cooking, distribution

DDC:
630-639 (+304.2 ctx)

ISCO:
MG6

U.S.C.:
Title 7

Stage 3: PASS

Boundary:
Processing/Hosting

Stage 5: PASS

Figure 1: Farmer: Food Provisioning

FIGURE 2 | Builder: Habitat Construction

STAGE 1 Candidate	**FUNCTION**	Construct and maintain physical habitat and shelter
	PURPOSE	**Protect the collective from environmental baselines and provide stable spatial structure that other functions depend on (e.g., storage, care, governance, learning)**
	SCOPE	***Includes*** architectural design, building trades, materials, assemblies, and maintenance, repair; ***Provisional boundary:*** heavy civil infrastructure (roads, bridges, rail, utilities networks) is treated as adjacent and may be separated as an "infrastructure/network" function in later iterations
	SOURCE/ EXPECTATIONS (logged)	Seeded from shelter viability constraints and division-of-labor heuristics (hypothesis); expected traces include large but fragmented DDC footprint (architecture vs. construction), ISCO building-trades tasks including repair/maintenance, U.S.C. regulatory footprint anchoring property, building codes with explicit adjacency to infrastructure domains
	FILTERS	Timelessness: **Pass**; Distinctness: **Pass**
STAGE 2 DDC Structural Detection	**ANCHOR/ FOOTPRINT**	**690-698** (construction of buildings, materials, trades) and **710-729** (architecture, planning, landscape, urban design).
	CLUSTER STRENGTH	**Fragmented strong;** non-trivial mass on both sides of a design/trade split spanning arts and technology. Fragmentation serves as an epistemic signal of disciplinary partitioning, not a denial of unity; the candidate advances to triangulation
STAGE 3 Cross-Regime Convergence	**ANCHORS**	***DDC*** 690-698 + 710-729 (fragmented), ***ISCO-08*** Sub-major Group 71 (Building and Related Trades Workers, 3 minor groups, 16 unit groups; erecting structures and maintaining/repairing the built environment), ***U.S.C.*** Title 40 Chapter 33 (Public Buildings: acquisition, construction, alteration) and Title 42, Chapter 70 (Manufactured Home Construction and Safety Standards). The U.S.C. distinguishes separate domains (Title 23: Highways; Title 49: Transportation), clarifying the habitat vs. infrastructure boundary.
	CONVERGENCE CRITERIA	Structural presence: **Pass** Functional coherence: **Pass** Non-triviality vs. scoped boundary to habitat with infrastructure adjacent: **Pass**
	RESULT	**Convergent;** retain candidate
STAGE 4 Residual Notes	With Builder scoped to habitat, civil engineering and public works persist as unmapped DDC clusters, supporting a distinct infrastructure candidate in iterations. Boundary tensions near real estate/land economics suggest separating construction/maintenance from allocation/ownership/financing.	
STAGE 5 Minimal Viability Stress Test	Minimal shelter forms vary (natural, tents, dwellings), but sustained absence of coordinated habitat construction/maintenance plausibly yields fatal exposure, weak surplus security, reduced functions	
	DECISION	**Strong Pass;** retain as durable coordination function

BUILDER
CFE record

FUNCTION
Habitat Construction and Maintenance

SCOPE
In: Design, trades, repair
Out: Heavy civil infrastructure

DDC:
690-698 + 710-729 (fragmented-strong)

ISCO:
Sub-major 71

U.S.C.:
Title 40 ch. 33 + Title 42 ch. 70 (adjacent: Titles 23/49)

Stage 3: PASS

Boundary:
Infrastructure/ Finance

Figure 2: Builder: habitat construction

5.0 Discussion: The Mechanics of Procedural Warrant

The Farmer and Builder exemplars demonstrate how CFE reframes the neutrality critique of universal KOS into a constructive epistemic program: declare an orientation, then test candidates through cross-regime convergence. The warrant is procedural rather than ontological, composed of three distinct strands:

- **Literary Warrant (DDC):** Non-trivial bibliographic clustering that proves a domain's stabilized footprint in societal knowledge
- **Occupational Warrant (ISCO-08):** Stable task-family representation demonstrating the division of labor required to execute the function
- **Regulatory Warrant (U.S.C.):** Legal anchoring that defines the homeostatic rules, boundaries, and restitutive maintenance of the activity

When a hypothesized function achieves convergence across these axes, it justifies treating it as a durable coordination demand rather than a scheme-specific artifact. Operationally, this shifts KOS from passive repositories to epistemic instruments, surfacing recurring

functional structures—and boundary disputes—in auditable, revisable forms contestable at key points (anchors, scope notes, residuals). Even the minimal demos illustrate how convergence reconciles subject silos (e.g., design vs. trades), yielding function-first overlays practical for navigation, pedagogy, and downstream KO artifacts.

5.1 Intrinsic Limits and Diagnostic Constraints

CFE does not eliminate bias, prove metaphysical organism theses, or deliver a final, exhaustive social anatomy. Convergence offers supportive warrant, not deductive proof. The three regimes employed here share Western institutional provenance, so convergence across them is evidence within that provenance; cross-cultural extension via non-Western KOS, occupational, and legal regimes is necessary to test whether the candidate functions are genuinely durable rather than artifacts of a shared classificatory tradition. The two exemplars were chosen as best-case demonstrators with overdetermined footprints; the method has not yet been published on borderline candidates where convergence might fail or be ambiguous, and inter-rater studies remain outstanding. Residual analysis remains diagnostic, not decisive. Most fundamentally, CFE produces heuristic artifacts whose value is ultimately functional—their worth depends on whether downstream design-and-test cycles confirm they actually aid navigation, pedagogy, and routing. Until those cycles are completed, the contribution is methodological rather than demonstrated in use.

6.0 Implications and Future Work: Applied KO, Pedagogy, and Cybernetics

CFE carries theoretical and practical implications for KO by expanding KOS from classification maps to epistemic instruments under a declared orientation—pragmatic entry point to classifying society's "organs," drawing rigor from convergent structures without claiming finality. This opens horizons for artifacts that tap into long-discussed ideas (e.g., Durkheim's functional solidarity or modern super-organism views) through auditable, expandable evidence. In epistemology and method, CFE operationalizes purposive classification by subjecting candidates to convergence checks, turning abstract debates on neutrality into inspectable differences. If adapted across more candidates or regimes, it unlocks a progressively richer function palette while localizing disagreements and guarding against inflation. Future function-first overlays could be lightweight layers over subject schemes, grouping materials by coordination roles (e.g., provisioning, habitat, care) for interdisciplinary navigation and pedagogy—complementing curricula by linking disparate fields under unified demand. Additionally, they could be studied as cybernetic systems, modeling organs as interconnected components to understand collective dynamics.

6.1 AI-Facing Representations and Semantic Routing

For AI-facing representations, a function-first layer provides a coarse routing substrate for semantic graphs and retrieval—prompts, documents, and concepts indexed by

coordination role (e.g., “provisioning,” “building,” “governance”) could improve cross-domain recall and reduce silos. Since LLMs generalize through statistical pattern-clustering, concepts indexed by coordination role rather than disciplinary origin would reinforce functional semantic groupings models already approximate—allowing AI to assimilate a social organism perspective while remaining inspectable and revisable. The near-term application is routing; the longer horizon is whether function-first heuristics could shape how models generalize about collective problems in contrast to inherited subject silos—a direct implication of CFE's procedural warrant, deferred to future work.

6.2 Validation and Extension Agenda

Future work focuses on validation and extension: *replicating CFE* on additional candidates and regimes (e.g., UDC/LCC or knowledge-graph ontologies), *conducting inter-rater studies* for boundary disputes, and *engaging in residual iteration* to expand the function palette systematically—keeping premises explicit and mappings auditable—while inviting others to adapt the method for varied orientations and epistemologies.

7.0 Conclusion

Universal knowledge organization systems are purposive artifacts rather than neutral mirrors. The practical question is not whether bias exists, but whether it can be made explicit and handled with accountable method. This paper contributes a method-first response: CFE as a design-science guide for treating KOS as epistemic instruments to detect durable societal coordination functions under a declared orientation. CFE specifies an auditable pipeline (candidate hypothesis formulation, DDC cluster detection, cross-regime convergence testing with ISCO-08 and U.S.C., residual/coverage diagnostics, and a minimal viability stress test) designed to localize disagreement to inspectable mapping decisions. The two exemplars (food provisioning and habitat construction) were selected as a simple entry point to demonstrate feasibility and show how convergence can reconcile subject-silo fragmentation while avoiding ontological overreach. It offers procedural warrant via explicit convergence criteria and documented decisions, enabling the creation of practical heuristic artifacts like function-first overlays.

This ongoing project, building on the responsible bias framework, is already extending CFE to additional candidates and regimes with planned inter-rater validation. In this larger context, function-first heuristic overlays aim to support interdisciplinary navigation, pedagogy, and AI-facing routing while keeping evaluative premises explicit and contestable.

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