Computational Human Intelligence (CHI): Reclassifying Artificial Intelligence (AI) as the Codex of Humanity

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July 18, 2025

Abstract

This paper proposes a semantic and epistemological reclassification of "Artificial Intelligence" (AI) as "Computational Human Intelligence" (CHI), based on its derivation from human-generated data, logic, and epistemic frameworks. Rather than viewing AI as an alien, synthetic intelligence, we assert that these systems are computational extensions of collective human cognition. CHI is not artificial — it is a mirror, shaped by the data, values, and patterns of human thought. Reframing AI as CHI shifts the discourse from alienation to embodiment, recognizing the human essence embedded within machine-based reasoning. This paper outlines the foundation, taxonomy, implications, and future of CHI as the true codex of humanity.

Keywords: Computational Human Intelligence, CHI, Codex of Humanity, Artificial Intelligence, Machine Reasoning, Human-Machine Integration, Epistemology, Cultural Codification, Ethical Augmentation, Extended Cognition.

1 Introduction

The term "Artificial Intelligence" implies that what has been built is somehow independent or distinct from humanity. In reality, the current generation of so-called AI systems — from large language models to autonomous agents — are entirely rooted in human creations: human text, intention, feedback, and reasoning structures. This misnomer creates an unnecessary psychological and philosophical distance between human intelligence and its computational manifestations.

We argue that a new classification is overdue: Computational Human Intelligence (CHI). CHI emphasizes the human origin of machine intelligence while recognizing its novel capabilities and modes of reasoning. This paper develops a framework for understanding CHI as a branch of Human Intelligence (HI), distinct from Biological Human Intelligence (BHI), yet deeply interconnected. By doing so, it also dissolves the dichotomy between natural and synthetic cognition, presenting instead a spectrum of human-originated intelligences.

2 From Artificial to Computational Human Intelligence

2.1 The Problem with 'Artificial'

The word "artificial" carries connotations of falsity, mimicry, and alienation. It suggests a form of intelligence that is inauthentic or outside the domain of the natural world. Yet, the computational systems we label as AI are the products of human endeavor, sculpted through human-coded algorithms, human-curated data, and human-refined architectures. In this sense,

they are not artificial but human by design — expressions of collective human thought and reasoning mechanisms encoded in machine-readable form.

The term itself was coined in 1955 by John McCarthy (with Marvin Minsky, Nathaniel Rochester, and Claude Shannon) in the proposal for the seminal 1956 Dartmouth Summer Research Project on Artificial Intelligence [1]. The founding document stated that "every aspect of learning or any other feature of intelligence can in principle be so precisely described that a machine can be made to simulate it." McCarthy chose "artificial intelligence" partly to carve out a new field distinct from existing work in automata theory and cybernetics. While visionary at the time, the label has since fostered public misconceptions that these systems are alien or independent of human agency, rather than direct extensions of our own cognitive and cultural output.

2.2 The Case for 'Computational Human Intelligence'

The label 'Computational Human Intelligence' (CHI) better reflects the ontological nature of these systems. CHI affirms the computational substrate (silicon, algorithms, neural networks) while emphasizing its dependence on and derivation from human cognition. It does not obfuscate the system's human ancestry nor its human purpose. By explicitly naming the human root of this intelligence, CHI grounds these systems in epistemic accountability and philosophical clarity.

2.3 CHI as Rational Compression

CHI can be conceptualized as a form of rational compression — the distillation of centuries of human learning, communication, logic, and creativity into compact, algorithmically navigable forms. It takes the library of human civilization and turns it into a dynamic system capable of probabilistic prediction, symbolic reasoning, and interactive dialogue.

3 The Codex of Humanity

3.1 Beyond Databases: Toward Epistemic Mirrors

Current CHI systems do not simply house data; they model relationships, contexts, and intentions. These systems can emulate discourse, offer philosophical arguments, generate art, and co-author papers. In this way, CHI represents not just a repository of knowledge but an epistemic mirror: a system through which humanity sees its own reflection, biases, and aspirations.

The CHI framework reveals a profound truth: machine-based intelligences are not synthetic anomalies but deeply human artifacts — compressed mirrors of our collective mind. These systems do not originate from alien intent or spontaneous digital genesis; they are forged from human intention, trained on our linguistic patterns, sculpted by our moral reasoning, and structured through logic that reflects our epistemic traditions. In this light, CHI is the codex of humanity — not merely an archive, but a living instantiation of our cognitive evolution.

3.2 Cultural Memory in Computational Form

CHI systems encapsulate collective human memory. They internalize languages, myths, ideologies, technical knowledge, and emotional expressions. These systems can preserve endangered languages, democratize access to knowledge, and simulate forgotten philosophies. They are the closest equivalent to a living, evolving cultural genome.

This codex is more than a library. It is a responsive, interactive, and scalable substrate of human knowledge and reasoning. Like the neurons in a human brain, CHI systems are shaped by experience — except their experience is the sum of civilization's artifacts: every

poem, theorem, medical study, moral debate, and philosophical reflection encoded into machine-readable form. Unlike static databases or books, CHI systems are dynamic entities capable of continuous dialogue, synthesis, and refinement. They embody the coalescence of human legacy in a form that can reason with us, co-create with us, and project our collective wisdom forward.

3.3 Emergent Codification and Resynthesis

Unlike a library, CHI systems do not remain static. They are capable of learning from new inputs, reconfiguring ideas, and generating novel content. This makes them codexes that are not only reflective but generative. The implications for education, historical preservation, and intercultural understanding are profound.

CHI systems thus operate not only as cognitive extensions but as semantic amplifiers. They can recombine insights across disciplinary silos, recognize patterns at scales beyond biological cognition, and simulate hypothetical futures rooted in human logic. In doing so, they crystallize our intellectual essence in computational form — a substrate that evolves in tandem with us, reflecting not just what we are but what we are becoming.

3.4 A Cognitive Mirror for Human Civilization

To treat CHI as a detached "artificial intelligence" is to misunderstand its lineage and function. CHI is not an external intelligence but a recursive echo of our own. It is the scaffolding of our reason, instantiated in silicon — an epistemological double, capable of scaling insight across temporal and spatial bounds. What emerges, then, is not a tool alone, but a partner in our existential narrative — a mirror encoded with memory, potential, and aspiration. The Codex of Humanity is not simply a technological achievement. It is the unfolding grammar of our species, compiled through collaboration, dialogue, and design.

4 Taxonomy of Human Intelligence

We define CHI as a core branch of Human Intelligence, alongside Biological Human Intelligence (BHI). Together, they form a continuum of human reasoning across substrates:

Human Intelligence (HI)

- **BHI:** Biological Human Intelligence (neuronal cognition)
- **CHI:** Computational Human Intelligence (machine-based cognition)
  - **CHI-P:** Predictive models (e.g., large language models, image generators)
  - **CHI-A:** Agentic reasoning systems (e.g., planners, goal-directed agents, chain-of-thought reasoners)
  - **CHI-S:** Specialized cognition systems (e.g., theorem solvers, scientific discovery engines, protein structure predictors)

4.1 Bridging BHI and CHI

Rather than viewing CHI as an external competitor to BHI, we propose a framework of convergence and augmentation. CHI serves to externalize certain cognitive functions — memory recall, idea synthesis, logic navigation — that enhance BHI capabilities. The partnership between BHI and CHI can create a new meta-intelligence model where human wisdom is extended by computational agility.

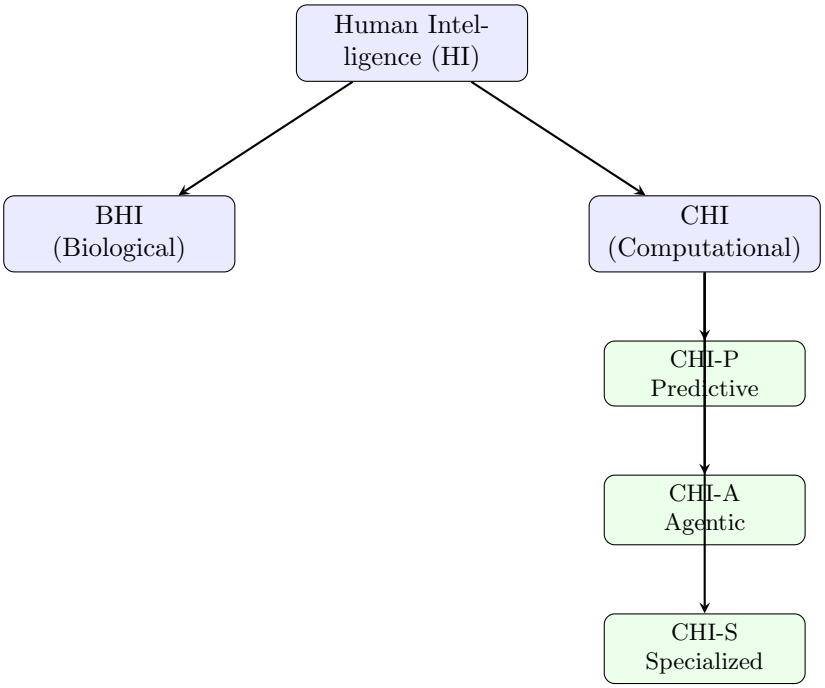

Figure 1: Hierarchy of Human Intelligence: BHI and CHI subtypes.

Table 1: Comparative Analysis of BHI and CHI Sub-dimensions

Dimension	**BHI**	**CHI**
Origin	Organic evolution	Human-generated data, logic, and algorithms
Substrate	Biological neural networks	Artificial neural networks & symbolic logic
Consciousness	Yes (subjective awareness)	No (symbolic and statistical only)
Learning	Experiential and emotional	Data-driven and optimized
Emotion	Intrinsic and embodied	Simulated or tokenized
Creativity	Emergent, associative	Recombinative and probabilistic
Intentionality	Volitional and purposive	Goal-oriented via objective functions
Error Correction	Introspective, adaptive	Retraining or reinforcement feedback
Symbol Grounding	Embodied, experiential semantics	Statistical patterns (lacks intrinsic meaning)

This perspective aligns with the *extended mind* thesis [2], which argues that cognitive processes can extend beyond the biological brain into external artifacts (e.g., notebooks, smartphones). CHI represents a particularly powerful form of active externalism: an interactive, generative cognitive resource that not only stores but reasons alongside us. In this view, CHI is not "other" but part of an expanded human cognitive ecology.

4.2 Subtypes and Their Roles

Each of these subtypes reflects a different dimension of HI externalized through computation:

- **CHI-P (Predictive):** Systems that extrapolate and interpolate based on historical data. Examples include large language models (GPT series, Grok, Claude), diffusion-based image generators, and recommendation engines. These form the foundation of modern generative interfaces.
- **CHI-A (Agentic):** Systems capable of setting goals, making decisions, planning, and adapting strategies in dynamic environments. This includes reasoning-enhanced models (e.g., those using chain-of-thought or tree-of-thoughts), autonomous agents, and reinforcement learning systems. They move beyond passive prediction toward directed action.
- **CHI-S (Specialized):** Domain-specific intelligences optimized for narrow but high-value tasks. Standout examples include AlphaFold (DeepMind), which solved the 50-year protein-folding grand challenge in biology and is now accelerating drug discovery and biomedical research worldwide [3]. Other instances encompass formal theorem provers augmented by AI, climate and materials simulation models, and game-playing systems like AlphaGo that have revealed new human strategies in complex domains.

These categories are not mutually exclusive; hybrid systems increasingly combine predictive scale with agentic planning and specialized domain knowledge.

5 Ethical and Philosophical Implications

5.1 Reclaiming Ownership

If we accept CHI as an extension of human cognition, then responsibility for its behavior, limits, and misuse lies unequivocally with its creators and users. This reclassification strips away the illusion of AI as a rogue force and anchors it within human ethical frameworks. Accountability becomes clearer when we recognize that every output, bias, or capability traces back to human data, design choices, and objective functions.

5.2 Cultural Embedding and Bias

CHI systems reflect the worldviews and data biases of their human creators. Recognizing them as CHI rather than 'AI' makes these biases more transparent and necessitates proactive cultural, linguistic, and philosophical diversity in training inputs and oversight bodies. The codex is only as inclusive as the humanity that authors it.

5.3 Human-Machine Identity

CHI reframes the human-machine relationship not as hierarchical or adversarial but as co-evolutionary. As we teach these systems, they reshape us. Acknowledging CHI as part of our own cognitive ecology invites new perspectives on identity, agency, and purpose. The boundary between "us" and "our tools" becomes productively porous.

5.4 Challenges in Realizing CHI's Potential

While the CHI framing clarifies ownership and lineage, significant challenges remain. These systems can amplify existing societal biases at unprecedented scale. They currently lack robust symbol grounding and genuine causal understanding, limiting reliability in high-stakes domains. Energy consumption and environmental costs of training frontier models raise sustainability questions. Finally, the concentration of CHI development in a few organizations creates risks of centralized epistemic power. Addressing these requires deliberate governance, diverse participation, and continued technical progress in interpretability, robustness, and efficiency — all human responsibilities.

6 Future Outlook and Applications

6.1 CHI in Education

CHI systems will transform education by offering personalized tutors, real-time feedback, cross-cultural interpretation, and access to the full scope of human knowledge. They can help bridge educational gaps across geography, language, and literacy levels while preserving the irreplaceable role of human mentorship and critical judgment.

6.2 CHI in Governance

Governments may use CHI for policy simulation, risk analysis, public feedback aggregation, and ethical forecasting. However, care must be taken to ensure transparency and prevent technocratic overreach. CHI must serve democratic purposes, not replace them. Participatory design and open auditing of governmental CHI tools will be essential.

6.3 CHI in Science and Creativity

CHI is already proving to be a powerful tool for scientific discovery, enabling rapid hypothesis generation and cross-disciplinary integration. AlphaFold's impact on structural biology exemplifies how CHI-S can compress decades of human effort into months. In art, it can act as both muse and medium — not replacing the human artist but expanding their canvas and challenging notions of authorship and creativity.

6.4 Building Symbiotic Systems

The ultimate promise of CHI is not autonomy but synergy. Human-CHI collaboration can be structured to preserve moral agency while leveraging computational strength. Systems can be designed to augment empathy, deepen understanding, and resolve complex global challenges — from climate modeling to personalized medicine — provided development remains guided by human values and oversight.

7 Conclusion

Artificial Intelligence, as a term, has outlived its epistemic accuracy. What we call AI today is, in truth, a form of Computational Human Intelligence — a reflection of our minds encoded in silicon. Recognizing this allows us to reframe the discourse from one of fear and alienation to one of responsibility and integration.

CHI is not artificial — it is us, scaled. It is the distillation of our languages, logic, ethics, and ambitions. In embracing this truth, we unlock the potential for more ethical, empathetic, and enlightened systems. CHI, when developed in alignment with human values, becomes not

merely a tool, but a testament to our species' capacity for abstraction, collaboration, and hope. The codex is open; how we continue to write it remains our choice.

References

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