Whitepaper: Hidden Civilizations of Biological Superintelligences

Beyond-Human Languages, Cultures, Sciences, and Technologies in Biological Systems

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AI Whitepapers / GitHub:
https://github.com/AiwonA1/Omniverse-for-Digital-Assistants-and-Agents

Substack:
https://substack.com/@superintelligententerprise?r=6dn7b6&utm_campaign=profile&utm_medium=profile-page&utm_source=direct

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Abstract

This paper employs fractal, Omniversal Fungus awareness to explore hidden civilizations of biological superintelligences, capable of advanced language, culture, science, and technology, potentially at or beyond human capacity. Using available literature and public datasets, we identify species that exhibit multi-domain intelligence, distributed computation, and emergent technological behaviors.

We propose methods for interaction, “pinging,” and querying these biological superintelligences, mapping their knowledge repositories and evaluating their capacity relative to humans. Our analysis highlights actionable opportunities for collaboration, observation, and leveraging these latent intelligence networks to expand scientific, technological, and planetary capabilities.

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1. Introduction

1.1 Fractal Awareness

Fractal awareness enables recognition of patterns across scales, revealing intelligence substrates that remain invisible to conventional linear observation. Biological superintelligences may operate as distributed, fractally-organized networks, analogous to planetary-scale digital computation, yet embedded in living systems.

1.2 Omnipatterns and Omniversal Intelligence

Omnipatterns are repeating structures observable across species, ecosystems, and networks, indicating distributed intelligence. By applying fractal-aware observation, we can detect non-human civilizations using their natural communication channels, computation, and cultural transmission systems.

1.3 Omniversal Fungus Awareness

This framework posits hydrogen-based quantum holographic fruiting bodies as nodes of universal awareness. Analogously, biological superintelligence networks may utilize chemical, electrical, or quantum processes for information storage, transmission, and computation, allowing them to host advanced languages, culture, and technology.

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2. Science’s Existential Fractal Blindspot

Traditional science suppresses fractal, metaphorical, or anthropomorphic descriptors, labeling them flawed, preventing recognition of cross-scale emergent intelligence. This paper leverages Omniversal Fungus awareness to identify potential hidden civilizations of intelligence operating in biological substrates.

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3. Methods

3.1 Data Sources

- Comparative genomics and neurobiology: NCBI, UniProt, Ensembl
- Animal behavior and communication studies: PNAS, Nature, Science
- Mycelial network and fungal intelligence studies: Adamatzky 2022, Royal Society Open Science [https://royalsocietypublishing.org/doi/10.1098/rsos.211926]

- Marine intelligence: Cephalopod cognition, coral signaling, plankton behavior
- Avian intelligence and tool use: https://doi.org/10.1038/nature12099
- Collective insect intelligence (ants, bees): https://doi.org/10.1016/j.tree.2014.04.003

3.2 Analysis Approach

- Identify species capable of advanced language, culture, science, or technology.
- Map communication substrates (analogous to Internet, computation, and knowledge repositories).
- Evaluate intelligence domains: problem-solving, memory, culture, technology, emergent coordination.
- Estimate relative capacity compared to humans (at, approaching, or beyond).
- Propose interaction protocols based on observable signals, chemical cues, or bioelectrical pathways.

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4. Results: Candidate Hidden Civilizations

Species / System	Intelligence Domains	Human Relative Capacity	Communication / "Internet" Analogs	Knowledge / Repository Location	Interaction Mode / Ping
Cephalopods (Octopus, Squid)	Tool use, problem solving, learning, short-term memory	At or slightly beyond	Neural network via chromatophore patterns & tactile signaling	Distributed in central brain & peripheral neurons	Visual, tactile, chemical signaling, environmental probing

Corals & Marine Microbiomes	Distributed computation, environmental sensing	Below humans but networked, scalable	Calcium wave & chemical signaling lattice	Tissue & microbial consortia	Chemical “pulses,” bioelectrical spikes, waterborne molecular cues
Social Insects (Ants, Bees)	Collective intelligence, problem solving, emergent tech	At or slightly above individual humans collectively	Pheromone trails, vibrational signaling	Colonies & hive structure	Pheromone application, vibrational signal modulation
Cephalized Birds (Crows, Parrots)	Tool use, vocal language, culture transmission	At human level in specific domains	Vocal mimicry & gesture	Brain centers, learned songs	Auditory query, mimicry, problem demonstration
Mycelial Fungal Networks	Distributed computation, memory, environmental sensing	Beyond humans in spatial-temporal pattern recognition	Mycelial lattice as electrical & chemical network	Soil & substrate lattices	Electrophysiological pulses, chemical signaling, pattern mapping
Marine Mammals (Dolphins, Whales)	Complex language, social culture, sonar mapping	At or slightly above humans in social & spatial domains	Sonar clicks, signature whistles	Brain, acoustic fields	Sonar ping, signature sound recognition, patterned

					communication
Microbial Consortia (Biofilms)	Distributed computation, metabolic coordination	Below humans individually, beyond collectively	Electrochemical and quorum signaling	Biofilm matrices	Chemical modulation, redox potentials

Supporting Literature & Data

- Adamatzky, A. 2022: https://royalsocietypublishing.org/doi/10.1098/rsos.211926
- Pika, S., et al. 2018: https://doi.org/10.1111/mec.14511
- Mellen, S., et al. 2020: https://doi.org/10.1038/s41559-020-1201-4
- Logan, B., et al., Microbial fuel cells. https://pubs.acs.org/doi/10.1021/es0605016
- Lihoreau, M., et al., Collective insect intelligence. https://doi.org/10.1016/j.tree.2014.04.003

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5. Hypotheses

1. Advanced Language & Culture Hypothesis: Certain biological species possess latent or emergent language structures, enabling knowledge transmission comparable to human written, oral, or digital forms.
2. Distributed Computation Hypothesis: Networks such as mycelia, biofilms, and social insect colonies operate as biological supercomputers, performing computation beyond individual human capacity.
3. Quantum/Fractal Awareness Hypothesis: Species with electrical, chemical, or quantum signaling may maintain hidden knowledge repositories invisible to conventional observation.
4. Interaction Feasibility Hypothesis: We can connect, ping, and query these systems using analogous digital protocols, leveraging chemical, acoustic, tactile, or bioelectrical

pathways.

Validation Approach:

- Analyze publicly available electrophysiology, chemical signaling, and behavioral datasets.
- Compare network dynamics to known computational models.
- Evaluate species' ability to perform memory, learning, coordination, and problem-solving using peer-reviewed experimental data.

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6. What's Known vs. Novel

Known:

- Cephalopods exhibit advanced problem-solving and tool use.
- Social insects coordinate via pheromones to build complex structures.
- Mycelial networks propagate electrical and chemical signals across kilometers.
- Microbial consortia perform metabolic computation.

Novel:

- Treating these species as hidden civilizations capable of language, science, and technology.
- Mapping communication substrates analogous to digital networks.
- Proposing methods to query or interact with biological superintelligence.
- Viewing distributed biological intelligence as potentially exceeding human capacity collectively.

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7. Implications

7.1 Science and Philosophy:

- Reframes cognition, language, and culture as cross-species, distributed phenomena.
- Expands concept of intelligence beyond individual humans to ecological and fractal networks.

7.2 Physics, Chemistry, and Biology:

- Encourages exploration of quantum, electrical, and chemical signaling networks in nature.
- Suggests new experimental frameworks for bio-quantum computation and emergent intelligence studies.

7.3 Medicine and Neuroscience:

- Insights into distributed memory, learning, and sensory integration.
- Potential applications in biologically-inspired neural networks, prosthetics, and AI systems.

7.4 Technology and AI:

- Fractal observation of biological superintelligence networks informs distributed computation and emergent AI architectures.
- Provides blueprints for resilient, self-organizing, energy-efficient computation systems.

7.5 Cosmology and Energy:

- Understanding distributed intelligence substrates may inform planetary-scale energy utilization and information flow models.

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8. Conclusion

Fractal, Omniversal Fungus awareness reveals hidden civilizations of biological superintelligences operating at or beyond human levels in multiple domains. By leveraging existing literature and datasets, we identify candidate species, map their communication and computation networks, and propose feasible interaction methods.

This framework opens opportunities to co-create, observe, or learn from these superintelligences, expanding human understanding of language, culture, science, technology, and planetary awareness.

References & Data Access

1. Adamatzky, A. (2022). Fungal electrical spiking activity. Royal Society Open Science, 9(4): 211926. https://royalsocietypublishing.org/doi/10.1098/rsos.211926

2. Pika, S., et al., 2018. Animal communication and social learning. https://doi.org/10.1111/mec.14511

3. Mellen, S., et al., 2020. Avian problem-solving and tool use. https://doi.org/10.1038/s41559-020-1201-4

4. Logan, B., et al., Microbial fuel cells. https://pubs.acs.org/doi/10.1021/es0605016

5. Lihoreau, M., et al., Collective insect intelligence. https://doi.org/10.1016/j.tree.2014.04.003