
Article Title: What Lives? A meta-analysis of diverse opinions on the definition of life

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CLUSTER 1

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TITLE

Self-Replicating Systems

CONSENSUS

Life is a self-replicating, complex system that manages information coded in a physical substrate, characterized by self-organizing properties and the ability to maintain its entropy significantly lower than the maximal entropy of the ensemble, thereby sustaining itself over time through replication and information conservation.

ANALYSIS

Definition Theme Analysis Protocol

Purpose

To analyze the provided definitions of life, identifying core ideas, connections between them, the structure of the definitions, and underlying assumptions.

Analysis Steps

1. *WHAT Are The Core Ideas?*

- **Replication and Self-Replication:** Both definitions highlight the ability to replicate as a fundamental aspect of life.
- **Information:** The concept of information is central, whether it's about coding, containing, or managing information.
- **Organization and Structure:** There's an emphasis on self-organizing properties and the presence of complex structures like DNA.
- **Entropy and Sustainability:** One definition mentions maintaining low entropy in the presence of noise.
- **Physical Substrate:** The importance of a physical base (carbon-based in one definition) is noted.

2. *HOW Do Ideas Connect?*

- **Replication** is linked to **Information** as the mechanism through which life sustains itself.
- **Self-Organization** is tied to the concept of **Complexity**, suggesting that simple systems do not qualify as life.
- **Entropy Management** is connected to **Sustainability**, implying that life must maintain its structure over time despite environmental challenges.
- **Physical Substrate** (like carbon or DNA) is crucial for carrying and replicating **Information**.

3. *WHY This Structure?*

- Both definitions start with a **Functional Definition** of life, focusing on what life does rather than what it is.
- There's a reliance on **Scientific Frameworks**, with references to entropy, self-organization, and molecular biology.
- **Universality** is considered, with one definition leaving room for non-carbon bases in other parts of the universe.

Output Format

1. Key Themes List

- **Replication:** 2 definitions, crucial for sustaining life.
- **Information:** 2 definitions, essential for replication and organization.
- **Self-Organization:** 1 definition, distinguishes life from non-life.
- **Entropy Management:** 1 definition, necessary for sustainability.

2. Connection Map

- Replication and Information are centrally connected, as replication relies on information.
- Self-Organization and Complexity are linked, with self-organization being a hallmark of complex, living systems.
- Physical Substrate and Information are connected through DNA, which is a substrate for genetic information.

3. Shared Approach

- **Functional Focus:** Both definitions emphasize what life does rather than its components.
- **Scientific Basis:** There's a shared reliance on scientific concepts like entropy and molecular biology.
- **Consideration of Universality:** The possibility of life taking different forms elsewhere is acknowledged.

Delivery Rules

This analysis uses simple language, explains relationships clearly, and focuses on the strongest patterns observed across the definitions. The emphasis is on replication, information, and self-organization as core aspects of life, with a shared approach that considers life's functional and universal aspects.

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TITLE

Self-Organizing Systems

CONSENSUS

Life is a self-organizing, non-equilibrium process that emerges from the interaction of energy, matter, and information, characterized by the ability to replicate, evolve, and adapt, with a defined boundary and identity, and maintained through complex, dynamic processes that utilize energy and information to sustain itself and respond to its environment.

ANALYSIS

Purpose

This analysis aims to identify and understand the common themes, connections, and intellectual approaches underlying various definitions of life provided by experts in the field.

Analysis Steps

1. Core Ideas Identification

After reviewing the definitions, the following core ideas emerge:

- **Self-organization:** Many definitions emphasize the ability of living systems to organize themselves, either through metabolic processes, autocatalytic networks, or other means.
- **Energy and Thermodynamics:** Concepts related to energy, thermodynamics, and the ability to harness and utilize energy are prevalent.
- **Replication and Evolution:** The capacity for replication, evolution, and adaptation in response to environmental changes is a common thread.
- **Information and Cognition:** Several definitions incorporate the role of information, cognition, and the ability to process and utilize information in living systems.
- **Boundary and Identity:** The notion of a boundary that defines a living system and distinguishes it from its environment is mentioned in various forms.
- **Complexity and Non-equilibrium:** Living systems are often described as complex, non-equilibrium systems that maintain their organization and function through continuous processes.

2. Connection Mapping

These core ideas are interconnected in several ways:

- **Self-organization** leads to **Complexity**, which in turn allows for **Replication and Evolution**.
- **Energy and Thermodynamics** are crucial for **Self-organization** and maintaining **Non-equilibrium** states.
- **Information and Cognition** play a role in guiding **Self-organization** and facilitating **Replication**

and Evolution.

- The **Boundary and Identity** of a living system are maintained through **Self-organization**, **Energy utilization**, and **Information processing**.

3. Shared Approach

The definitions share a common approach in that they:

- Emphasize the dynamic and processual nature of life.
- Recognize the importance of energy, information, and organization.
- Suggest that life is an emergent property of complex systems.
- Often blur the lines between living and non-living systems, highlighting the complexity of defining life.

Output Format

1. Key Themes List

1. **Self-organization**: 80% of definitions mention some form of self-organization.
2. **Energy and Thermodynamics**: 70% discuss energy, thermodynamics, or related concepts.
3. **Replication and Evolution**: 60% include aspects of replication, evolution, or adaptation.
4. **Information and Cognition**: 50% mention information, cognition, or related concepts.
5. **Boundary and Identity**: 40% discuss the importance of boundaries or identity in defining life.
6. **Complexity and Non-equilibrium**: 80% describe living systems as complex and non-equilibrium.

2. Connection Map

- **Self-organization** → **Complexity** → **Replication and Evolution**
- **Energy and Thermodynamics** → **Self-organization** → **Non-equilibrium**
- **Information and Cognition** → **Self-organization** → **Replication and Evolution**
- **Boundary and Identity** → **Self-organization** → **Information processing**

3. Shared Approach

- **Dynamic and Processual**: Life is seen as a dynamic process rather than a static state.
- **Importance of Energy, Information, and Organization**: These elements are fundamental to living systems.
- **Emergent Property**: Life is often viewed as an emergent property of complex systems.
- **Blurred Lines**: The distinction between living and non-living systems is not always clear-cut.

Delivery Rules

- **Clear Language:** Technical terms are explained for clarity.
 - **Plain Relationships:** Connections between ideas are straightforwardly described.
 - **Examples:** Specific definitions are referenced to illustrate points.
 - **Strongest Patterns:** The analysis focuses on the most prevalent themes and connections.
 - **Important Links:** Key relationships between ideas are highlighted.
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TITLE

Evolutionary Complexity

CONSENSUS

Life is a self-modifying, reproductive system that emerges through evolution or natural selection, characterized by the production of complexity and novelty, and can be understood through computational or informational frameworks, where homeostasis and dynamic stability enable its continuation and adaptation, ultimately leading to the creation of new patterns and organizational structures.

ANALYSIS

Analysis of Definitions

Purpose and Overview

The purpose of this analysis is to extract and compare high-level patterns across multiple definitions of life to reveal conceptual relationships, shared frameworks, and common intellectual approaches. This meta-analysis aims to understand how experts construct their definitions and what underlying assumptions they share.

Key Concepts and Frequency

1. **Evolution/Natural Selection:** 3 definitions mention evolution or natural selection as a key component of life.
2. **Self-modification/Reproduction:** 4 definitions refer to the ability of life to reproduce or modify itself.
3. **Complexity/Novelty:** 3 definitions mention complexity or the production of novelty as essential to life.
4. **Homeostasis/Dynamic Stability:** 2 definitions include homeostasis or dynamic stability as critical aspects.
5. **Computation/Information:** 2 definitions suggest that life can be understood through the lens of computation or information patterns.

Connections Between Ideas

- **Evolution to Complexity:** There's a link between evolution and the emergence of complexity or novelty.
- **Self-modification to Reproduction:** The ability to self-modify is closely tied to the ability to reproduce.
- **Computation to Information Patterns:** The concept of life as computational or based on information patterns underscores the idea of life as an organizational or informational entity.

Shared Approaches and Assumptions

- **Functional/Reductionist View:** Many definitions (3) approach life from a functional or reductionist perspective, breaking it down into subprocesses.
- **Evolutionary Perspective:** The presence of evolution or natural selection in several definitions assumes that life's characteristics are shaped by selective pressures.

- **Broad Definition:** There's an assumption that life is not limited to biological systems but can be understood in a broader, more abstract sense, including computational or informational entities.

Output

Key Themes List

1. **Evolution/Natural Selection** - 3 definitions, critical for adaptive change and emergence of complexity.
2. **Self-modification/Reproduction** - 4 definitions, essential for life's continuation and adaptation.
3. **Complexity/Novelty Production** - 3 definitions, outcome of evolutionary processes and a hallmark of life.
4. **Computation/Information Patterns** - 2 definitions, suggests life can be understood through computational or informational frameworks.

Connection Map

- Evolution leads to complexity and novelty.
- Self-modification enables reproduction and adaptation.
- Computation and information patterns underlie life's organizational structure.

Shared Approach

The definitions share a functional and evolutionary perspective, emphasizing life's ability to adapt, reproduce, and produce novelty. They also collectively suggest that life is not confined to biological matter but can be understood in broader, more abstract terms, including computational and informational frameworks.

Delivery

This analysis uses clear language to explain the connections and patterns found across the definitions, focusing on the strongest and most important links to provide a comprehensive understanding of how these experts conceptualize life.

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TITLE

Non-Ergodic Evolution

CONSENSUS

Life is a multidimensional, dynamic process of development and evolution, characterized by complexity, metabolic closure, and memory capacity, existing on a continuum from the extremely alive to the negligibly alive, and marked by its ability to build higher hierarchical levels out of lower levels, with its essence being more complex than our models, and operating as a non-ergodic evolving system in a permanent state of becoming.

ANALYSIS

Analysis of Definitions of Life

Purpose

Analyze multiple expert definitions to understand core ideas, connections, and underlying assumptions about life.

Core Ideas

1. **Multidimensionality of Life:** Many experts agree that life is not reducible to a single variable but is instead characterized by multiple dimensions, such as distance from thermodynamic equilibrium, metabolic closure, complexity, and memory capacity.
2. **Process over State:** Life is often described as a process (e.g., "Living") rather than a thing, substance, property, or state, emphasizing its dynamic and evolving nature.
3. **Continuity and Spectrum:** There's a consensus that life exists on a continuum, ranging from the extremely alive to the negligibly alive, with various instances of life (like earthworms, viruses, and hurricanes) occupying different points on this spectrum.

4. **Evolving and Non-Ergodic System:** Life is seen as a system in a permanent state of becoming, with an evolutionary future that cannot be fully described by standard physicalist approaches.
5. **Complexity and Emergence:** Life's complexity and the emergence of properties like genes and metabolism from simpler systems are highlighted as key aspects.

Connections

- **From Simplicity to Complexity:** The idea that life builds higher hierarchical levels out of lower levels and that complexity emerges from simpler systems is a common thread.
- **Process and Continuity:** The processual nature of life and its existence on a continuum are interconnected, suggesting that life's dynamic nature underlies its varying degrees of existence.
- **Evolving Systems and Extra-Terrestrial Life:** The consideration of life as a non-ergodic evolving system opens up the possibility of extra-terrestrial life forms not based on standard biochemistry or biophysics, expanding our understanding of life's potential manifestations.

Shared Approach

- **Holistic Perspective:** Definitions often adopt a holistic perspective, considering life in its entirety and its interactions with its environment, rather than focusing on isolated components.
- **Dynamic and Evolving:** There's a shared assumption that life is inherently dynamic and evolving, challenging static or overly simplistic definitions.
- **Interdisciplinary Approach:** The necessity for an interdisciplinary approach, combining insights from biology, philosophy, physics, and potentially more, is implied by the complexity and multifaceted nature of life.

Delivery

In analyzing these definitions, it becomes clear that experts approach the concept of life with a recognition of its complexity, dynamics, and the challenge it poses to traditional definitions. Life is not seen as a static entity but as a process that evolves over time, exists on a spectrum, and is characterized by multiple dimensions. This understanding calls for a holistic, interdisciplinary approach to grasp the essence of life, acknowledging its inherent complexity and the continuous evolution of our knowledge about it.

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TITLE

Autonomous Systems

CONSENSUS

Life is a self-sustaining and adaptive process, characterized by agency and autonomy, where a system maintains its organization, interacts with its environment, and reproduces, utilizing energy exchange and information processing to reduce internal entropy and promote survival, through goal-oriented behavior and decision-making, ultimately enabling evolution and complexity.

ANALYSIS

Analysis Based on the Provided Definitions

Purpose

The purpose of this analysis is to extract and analyze high-level patterns across multiple definitions of "life" to reveal conceptual relationships, shared frameworks, and common intellectual approaches. This meta-analysis aims to understand how experts construct their definitions and what

underlying assumptions they share.

Core Ideas

1. **Agency and Autonomy:** Many definitions emphasize the ability of living systems to act autonomously, making decisions, and interacting with their environment in a goal-oriented manner.
2. **Self-Maintenance and Reproduction:** The capacity for self-sustenance and reproduction is a common theme, highlighting the ability of living systems to maintain their organization and produce offspring.
3. **Adaptation and Evolution:** Several definitions mention the ability of living systems to adapt to their environment, evolve, and change over time, often through processes like natural selection.
4. **Cognition and Information Processing:** The ability to perceive the environment, process information, and make decisions based on that information is highlighted in several definitions.
5. **Energy and Entropy:** Some definitions touch on the concept of energy exchange and the reduction of internal entropy as fundamental aspects of life.
6. **Goal-Oriented Behavior:** The notion that living systems have intrinsic goals and purposes, and behave in ways that promote their survival and reproduction, is a recurring theme.
7. **Complexity and Organization:** The complexity and organized nature of living systems, including their ability to construct, maintain, and reproduce their own organization, are key concepts.

Connections Between Ideas

- **Agency and Adaptation:** The ability to act autonomously is closely linked with the capacity to adapt to environmental changes, as both are essential for survival and reproduction.
- **Self-Maintenance and Energy:** Self-maintenance is connected to energy exchange, as living systems need to manage energy to sustain their processes and reduce internal entropy.
- **Cognition and Decision-Making:** The process of perceiving the environment and making decisions is foundational for goal-oriented behavior and adapting to environmental challenges.
- **Evolution and Complexity:** Evolution by natural selection is seen as a mechanism that can lead to the complexity necessary for agency and advanced forms of life.

Shared Approach

Despite the diversity in definitions, there's a shared approach in emphasizing the dynamic, interactive, and adaptive nature of life. Most definitions frame life as an active process rather than a static state, focusing on the capabilities and behaviors of living systems rather than their

composition. The use of terms like "agency," "autonomy," "self-maintenance," and "adaptation" indicates a consensus on the importance of interactive and self-sustaining processes in defining life.

Output

Key Themes

1. **Agency and Autonomy** - 8 definitions, crucial for goal-oriented behavior and interaction with the environment.
2. **Self-Maintenance and Reproduction** - 7 definitions, essential for the continuation of living systems.
3. **Adaptation and Evolution** - 6 definitions, vital for survival and change over time.
4. **Cognition and Information Processing** - 5 definitions, necessary for decision-making and environmental interaction.
5. **Energy and Entropy** - 4 definitions, fundamental for sustaining life processes.

Connection Map

- Agency -> Adaptation (through decision-making and environmental interaction)
- Self-Maintenance -> Energy Management (reducing internal entropy)
- Cognition -> Decision-Making (enabling goal-oriented behavior)
- Evolution -> Complexity (leading to advanced forms of life and agency)

Shared Approach

The definitions collectively portray life as a dynamic, adaptive, and self-sustaining process characterized by agency, autonomy, and the capacity for evolution and complexity. They emphasize the importance of interaction with the environment, energy exchange, and information processing in defining the essence of life.

CLUSTER 6

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- Carlos Sonnenschein

TITLE

Dynamic Interdependence

CONSENSUS

Life is the dynamic process of movement and proliferation, necessitating a balanced exchange between internal and external factors, and reliant on the presence of external entities or conditions, where certain prerequisites such as movement and interdependence must be met for life to exist.

ANALYSIS

Analysis of Definitions

Purpose

To extract and analyze high-level patterns across the provided definitions of life, revealing conceptual relationships, shared frameworks, and common intellectual approaches.

Definitions Provided

1. "Life is the permanent movement of our bodies towards a balanced exchange between what lays inside and what is outside. Life is what cannot exist without an other, already being there, already alive. Life is not something we can create or make. Life is something we have received, like a gift."
2. "Without proliferation and movement, there is no life."

Analysis Steps

1. *WHAT Are The Core Ideas?*

- **Movement/Action:** Both definitions highlight movement or action as essential for life. In the first definition, it's the "permanent movement" towards balance, and in the second, it's "proliferation and movement."
- **Interdependence:** The first definition emphasizes that life cannot exist without another entity already being alive, suggesting a form of interdependence or reliance on external factors for existence.
- **Non-Creation:** The first definition also underscores that life is not something that can be created but is rather received, implying a passive reception of life.
- **Essential Conditions:** The second definition presents proliferation and movement as necessary conditions for life, implying that without these, life does not exist.

2. *HOW Do Ideas Connect?*

- **Cause and Effect:** The idea of movement and proliferation leading to life (or its absence leading to non-life) suggests a causal relationship between these actions and the state of being alive.
- **Dependency:** The connection between life and the presence of another living entity or the necessity of movement/proliferation suggests that life is dependent on external or internal dynamic processes.
- **Existential Conditions:** Both definitions imply that certain conditions must be met for life to exist, whether it's the balance and interdependence mentioned in the first or the movement and proliferation in the second.

3. *WHY This Structure?*

- **Holistic Perspective:** The first definition takes a more holistic approach, considering life in the context of balance, gift, and interdependence, suggesting a broader, more philosophical view of life.
- **Minimalist Perspective:** The second definition is more minimalist, focusing solely on the absence of two conditions (proliferation and movement) as a determinant of life's absence, indicating a focus on fundamental, perhaps biological, aspects of life.

Output Format

1. *Key Themes List*

- **Movement/Action:** Appears in both definitions as crucial for life.
- **Interdependence:** Key in the first definition, highlighting life's reliance on external entities or conditions.
- **Non-Creation:** Life is received, not created, as per the first definition.
- **Essential Conditions:** Both definitions emphasize certain conditions (balance, movement, proliferation) as necessary for life.

2. *Connection Map*

- Movement and proliferation are linked to the existence of life.
- Interdependence and the concept of life as a gift are connected through the idea that life relies on external factors.
- The absence of movement/proliferation and the inability to create life are linked through the implication that life has specific, unalterable prerequisites.

3. Shared Approach

- **Focus on Dynamics:** Both definitions focus on the dynamic aspects of life (movement, proliferation, balance).
- **Existential Prerequisites:** Both emphasize that certain conditions must be present for life to exist.
- **Simple yet Profound:** Despite their simplicity, both definitions touch on profound philosophical and biological aspects of life.

Delivery Rules

- **Clarity:** The analysis aims to clearly outline the core ideas, their connections, and the structural approaches of the definitions.
 - **Simplicity:** By focusing on the most direct and straightforward interpretations, the analysis avoids overly complex reasoning.
 - **Examples:** The original definitions serve as examples of the broader concepts being analyzed.
 - **Patterns:** The strongest patterns identified include the importance of movement/action and the emphasis on certain conditions being necessary for life.
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- Perry Marshall

TITLE

Transcendent Autonomy

CONSENSUS

Life is the manifestation of self-awareness and self-agency, characterized by a continual process of creativity, wherein lies the potenza for achieving singularity in every moment, a profound and ineffable state that underscores the transcendent and spiritual nature of existence.

ANALYSIS

Analysis of the Provided Definition

The given definition of life is poetic and philosophical, emphasizing self-awareness, self-agency, and the continuous process of creativity. Here's a breakdown of the core ideas, their connections, and the underlying structure of the definition.

Core Ideas:

1. **Self-awareness and Self-agency:** The definition starts by highlighting the importance of being aware of oneself and having the ability to act based on this awareness.
2. **Creativity:** This is presented not just as an act but as a "continual gift," suggesting that life is inherently creative and that this creativity is ongoing.
3. **Potenza for Singularity:** The term "potenza" (Italian for power or potential) suggests a capacity or potential for achieving a state of singularity in every moment. Singularity here could imply a state of being unique or a point of infinite potential.
4. **Ineffable:** The definition concludes by describing this concept as ineffable, meaning it cannot be expressed or described in words, emphasizing its profound and perhaps spiritual nature.

Connections Between Ideas:

- **Self-awareness and Creativity:** The ability to be aware of oneself and to have agency over one's actions is closely tied to the concept of creativity. This suggests that creative expression is a fundamental aspect of self-aware, agential beings.
- **Potenza and Singularity:** The potential for achieving a state of singularity is linked to the concept of creativity and self-awareness. This implies that the ultimate expression of life's potential (potenza) is to reach a state of unique, perhaps transcendent, being in every moment.
- **Ineffability:** The inability to fully describe this state emphasizes the mystery and depth of life's essence, connecting back to the idea that life is a profound and possibly spiritual phenomenon.

Underlying Structure:

The definition is structured to evoke a sense of awe and wonder at the nature of life, emphasizing its creative, self-aware, and potent aspects. It begins with tangible concepts (self-awareness and agency) and moves towards more abstract and profound ideas (creativity, potenza for singularity, ineffability), suggesting a progression from the observable to the transcendent.

Shared Approach and Themes:

This definition shares themes with philosophical and spiritual discussions about the nature of reality, consciousness, and human existence. It approaches the concept of life with a holistic perspective, considering not just biological or physical aspects but also metaphysical and existential ones. The emphasis on creativity, self-awareness, and the potential for singularity suggests a belief in the inherent value and dignity of life, as well as its capacity for transcendence and self-expression.

Output:

1. Key Themes List:

- Self-awareness and Self-agency: Foundational to the concept of life, suggesting life is not passive.
- Creativity: Presented as an ongoing process, fundamental to life's nature.
- Potenza for Singularity: Implies life has the potential for achieving unique, transcendent states in every moment.
- Ineffability: Highlights the profound, perhaps spiritual, nature of life.

2. Connection Map:

- Self-awareness → Creativity: Awareness enables creative expression.
- Creativity → Potenza for Singularity: Creativity is the means through which life's potential is realized.
- Potenza for Singularity → Ineffability: The ultimate state of being is beyond full description.

3. Shared Approach:

- **Holistic Perspective:** Considering life beyond physical aspects to include metaphysical and existential dimensions.
- **Emphasis on Potential:** Belief in life's inherent capacity for creativity, self-awareness, and transcendence.
- **Transcendental View:** Life is seen as having a profound, spiritual dimension that cannot be fully captured in words.

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- Kenneth O. Stanley

- Steven A. Frank

TITLE

Contextual Subjectivity

CONSENSUS

Life is a complex, context-dependent phenomenon, defined by its subjective and multifaceted nature, focusing on specific properties such as learning, and is best approached through the utility of definitions as tools for solving specific puzzles or achieving goals, rather than as endpoints in themselves.

ANALYSIS

Analysis of Definitions of Life

Purpose

The purpose of this analysis is to extract high-level patterns and conceptual relationships from the provided definitions of life, focusing on the themes, connections, and shared approaches among them.

Analysis Steps

1. Core Ideas:

- The definitions emphasize the complexity and subjectivity of defining life.
- Key concepts include the distinction between defining life as it is versus life as it could be, the importance of context in defining life, and the focus on specific properties such as learning.
- The frequency of concepts like "context," "subjectivity," and "properties" highlights their central role in the discussion.
- Similar concepts are grouped under the umbrella of "approaches to defining life," which includes philosophical, scientific, and utilitarian perspectives.

2. Connections:

- The ideas connect through the overarching theme of the challenge in defining life, with a focus on the limitations of current scientific understanding and the need for context.
- Concept hierarchies emerge, with "defining life" at the top, branching into "life as it is" and "life as it could be," and further into scientific, philosophical, and subjective considerations.
- Central hub concepts include "context," "subjectivity," and "properties of life," which link

various ideas together.

- The flow of ideas patterns around the notion that definitions are tools for solving specific puzzles or achieving goals, rather than endpoints in themselves.

3. Shared Approach:

- A common approach among the definitions is the recognition of the subjectivity and contextuality of defining life.
- There's a shared assumption that traditional or absolute definitions of life may not be feasible or useful without a specific context or goal.
- The focus on properties like learning and the consideration of life "as it could be" reflect a shared strategy of exploring life through its potential manifestations and functionalities.

Output

1. Key Themes List:

- **Subjectivity and Contextuality:** Recognizing that defining life is highly subjective and dependent on context.
- **Focus on Properties:** Emphasizing specific properties of life, like learning, as a more fruitful approach than seeking a comprehensive definition.
- **Utility of Definitions:** Viewing definitions as tools for solving specific problems rather than as ends in themselves.

2. Connection Map:

- The themes of subjectivity, focus on properties, and the utility of definitions connect through the central idea that defining life is complex and context-dependent.
- The connection between subjectivity and focus on properties is rooted in the recognition that life's definition varies greatly depending on perspective and context.
- The utility of definitions links back to the idea that definitions should serve a purpose, such as understanding or achieving something related to life.

3. Shared Approach:

- The definitions share a characteristic skepticism towards absolute or universal definitions of life.
- There's a common methodological approach of considering life through its potential properties or functions rather than its essence.
- The definitions collectively assume that the pursuit of a definition of life should be guided by practical or theoretical goals rather than the definition itself being the primary goal.

Delivery

This analysis aims to clarify the complex and interconnected nature of defining life, highlighting the importance of context, subjectivity, and focusing on specific properties or goals. By understanding these themes and their connections, we can approach the definition of life in a more nuanced and effective manner, recognizing the utility of definitions as tools for exploration and understanding rather than as fixed endpoints.

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- Christopher A. Fields
- Donald D. Hoffman

TITLE

Subjective Emergence

CONSENSUS

Life is a state perceived through the subjective lens of systems that consider themselves alive, where the distinction between living and nonliving is blurred by the limitations of our senses, suggesting a more nuanced and interconnected view of existence.

ANALYSIS

Analysis of Definitions

Purpose

The provided definitions aim to conceptualize what it means to be alive, challenging traditional notions and highlighting the subjective nature of this distinction.

Analysis Steps

1. Core Ideas:

- The first definition introduces the concept of being considered alive by systems that consider themselves alive, emphasizing a self-referential or systemic perspective.

- The second definition questions the principled distinction between living and nonliving objects, attributing the perceived difference to the limitations of human senses.

- Key concepts include:

- Self-referential alive systems
- Limitations of human senses
- Interaction with Life
- Subjective distinction between living and nonliving

2. Connections Between Ideas:

- Both definitions suggest that the concept of being alive is not absolute but is influenced by the observer or the system observing.
- The first definition implies a sort of consensus or recognition among "alive" systems, while the second attributes the distinction to sensory limitations, suggesting that the perception of life is filtered.
- A central idea is the challenge to the binary distinction between living and nonliving, proposing instead a more nuanced or interconnected view of Life.

3. Structuring the Definitions:

- Both definitions approach the concept of life by questioning established norms or perceptions, using a philosophical or meta-cognitive approach.
- They share a critical perspective on how we perceive and define life, suggesting that our current understanding might be too simplistic or misguided.

Output Format

1. Key Themes List:

- **Theme 1: Subjective Nature of Life** - Both definitions highlight that the concept of being alive is subject to the perspective of the observer or system.
- **Theme 2: Challenge to Binary Distinctions** - They challenge the traditional living vs. nonliving distinction, suggesting it may not be as clear-cut as commonly thought.
- **Theme 3: Perceptual Limitations** - The second definition specifically mentions the role of sensory limitations in creating an artificial distinction.

2. Connection Map:

- The concepts of subjective observation and perceptual limitations are closely linked, as both influence how we categorize objects as living or nonliving.
- The challenge to binary distinctions is a consequence of recognizing these subjective and perceptual factors.

3. Shared Approach:

- **Philosophical Inquiry:** Both definitions employ a philosophical approach, questioning fundamental assumptions about life.
- **Critical Perspective:** They share a critical stance towards traditional distinctions, seeking a deeper understanding of what it means to be alive.
- **Interconnected View of Life:** There's an underlying suggestion of a more holistic or interconnected view of life, beyond simple categorizations.

Delivery Rules

- **Clear Language:** The analysis aims to use straightforward terms to explain complex ideas.
 - **Plain Explanations:** Relationships between concepts are described in a simple, accessible manner.
 - **Examples:** While not explicitly provided, the definitions themselves serve as examples of the themes and connections being discussed.
 - **Focus on Patterns:** The analysis emphasizes the strongest patterns and most significant links between ideas.
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CLUSTER 10

MEMBERS

- Leo Caves
- Richard A. Watson

TITLE

Vibrational Holism

CONSENSUS

Life is a dynamic pattern of interconnectedness and transformation, characterized by resonance and harmony, where observer and environment interact to create a holistic, relational, and vibrational whole, exhibiting recursive dynamics and undergoing conservative and radical morphodynamics, sustained through processes of mutual transformation and the emergence of harmonic structures that persist and evolve.

ANALYSIS

Analysis Output

Key Themes List

1. **Dynamic Patterns:** Both definitions emphasize the importance of dynamic patterns in understanding life. (Used by: 2 definitions, Importance: Central to understanding life, Usage: Describing the fundamental nature of life)
2. **Interconnectedness:** The definitions highlight the interconnectedness of entities and their environments, emphasizing mutual relationships and transformations. (Used by: 2 definitions, Importance: Essential for the existence and continuation of life, Usage: Explaining how life emerges and sustains)
3. **Resonance and Harmony:** The concepts of resonance and harmony are crucial, indicating a balanced and vibrational relationship between parts and wholes. (Used by: 2 definitions, Importance: Key to the sustenance and creation of life, Usage: Describing the mechanism by which life persists and evolves)
4. **Transformation and Change:** Both definitions mention the capability of life to undergo transformation, whether through conservative or radical morphodynamics, or through mutual, transformative connections. (Used by: 2 definitions, Importance: Fundamental to the nature of life, Usage: Explaining how life adapts and evolves)
5. **Observer and Environment:** The role of the observer and their interaction with the environment is noted, suggesting that life is perceived and defined through this interaction. (Used by: 1 definition explicitly, Importance: Foundational for understanding life, Usage: Setting the stage for how life is conceptualized)

Connection Map

- **Dynamic Patterns** and **Interconnectedness** are closely linked as they both pertain to the relational and processual nature of life.
- **Resonance and Harmony** emerge from the interactions within these dynamic patterns and interconnected systems, facilitating the sustenance of life.
- **Transformation and Change** are enabled by the dynamic and interconnected nature of life, with **Resonance and Harmony** playing a role in guiding these transformations.
- The **Observer and Environment** interaction provides the context in which these themes are observed and understood, influencing how we define and perceive life.

Shared Approach

- **Holistic Perspective:** Both definitions adopt a holistic approach, considering life as part of a larger system where parts and wholes are interrelated.
- **Process Over Static State:** There is a focus on processes and dynamics rather than static states, emphasizing change and transformation.
- **Relational:** Life is understood through relationships—between the observer and the environment, and within the systems that constitute life.
- **Vibrational and Energetic:** The mention of resonance, harmony, and vibrations indicates a consideration of life in terms of energetic and vibrational states.
- **Recursive and Recursive Dynamics:** The first definition mentions "intrinsically recursive dynamics," suggesting a self-referential or feedback loop nature to life's processes, which is echoed in the second definition's emphasis on the song of life recreating the conditions for its own origination.

This analysis reveals that despite their differing language and emphasis, both definitions share a deep concern with the dynamic, relational, and vibrational aspects of life, suggesting a common understanding of life as a complex, interconnected, and transformative process.
