Cognitive Architecture Layers (CAL)
A framework for analyzing internal cognitive depth in smart characters.

A system designed to complement the SCD by introducing internal cognitive depth as an analytical dimension.

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This document exists because something feels off in most smart character debates.
We are very good at measuring feats, systems, tiers and strategic outcomes. But we are surprisingly bad at talking about the internal structure of the characters themselves. Two characters can have similar intelligence, similar plans and even similar results, yet one collapses under pressure while the other remains stable and adaptive. That difference is rarely formalized.
CAL was created to describe that missing layer: not what a character can manipulate, but how their mind is organized to sustain strategic behavior over time.

Introduction:

What is CAL?
Cognitive Architecture Layers (CAL) is a framework meant to complement existing scaling systems in the SCD. Instead of focusing on external complexity, feats or narrative position, CAL focuses on the internal dimension: how consciousness itself is structured inside the agent.
CAL does not measure how smart a character is, how powerful they are, or what level of reality they exist in. It measures how deeply they understand themselves, how stable their identity is, and how much control they have over their own psychological processes.
In practice, CAL is about questions like:

“Does this character act out of ego or self-awareness?”
“Do they repeat patterns or consciously evolve?”
“Are they driven by trauma, validation, ideology or lucidity?”
“Can they lose without collapsing internally?”

Core principle:

External transcendence does not imply internal transcendence.
A character may exist beyond narratives, manipulate entire realities or operate on meta-levels of existence, and still be psychologically fragile, immature or unstable. At the same time, a character with no cosmic feats may display extreme internal clarity, self-regulation and existential stability.
SCD measures the strategic intelligence of characters.
CAL describes the structure of the mind playing it.

Integration with SCD:

Two characters may share the same tier and similar feats, yet perform very differently because their internal architectures are different. CAL exists to formalize that difference. It introduces cognitive depth as a real variable in strategic analysis, without replacing or contradicting existing systems.

The CAL Model:

The CAL framework is structured into twelve layers, each representing a different level of internal cognitive depth. These layers do not describe intelligence, power or narrative importance, but the internal architecture of consciousness that sustains strategic behavior. The higher the layer, the more integrated, stable and self-aware the agent becomes. Lower layers are reactive and externally driven, while higher layers are reflective and internally regulated.
The following sections describe each layer in ascending order.

CAL-1 – Base Material:

This layer represents the most fundamental level of existence: the subject as a purely material entity. It refers to the physical body as an organism, including biological structure, physiological integrity and basic interaction with the environment. At this level there is no cognition, no intention and no subjective experience in a meaningful sense. There is only a system that exists and reacts according to physical laws.
From the perspective of cognitive architecture, CAL-1 is not a mental layer but an ontological foundation. It provides the necessary substrate for any form of consciousness to emerge, yet it does not participate in psychological or strategic processes. The agent does not think, choose or interpret; it simply persists as a material system.
In terms of strategic analysis, CAL-1 has no relevance for outsmarting. It does not generate reasoning, decision-making, manipulation or adaptation. All higher cognitive processes presuppose this layer, but none are explained by it. For this reason, CAL-1 is considered pre-cognitive and is not part of the operational scale used for comparing characters.
Its function in the model is purely structural: to establish the minimal condition for existence. CAL begins to become analytically meaningful only once internal experience and mental processing emerge.
Examples: any conscious entity, by default.

CAL-2 – Autoregulation:

This layer represents the level of automatic life processes that maintain the organism in a functional state. It includes biological self-regulation mechanisms such as metabolism, internal balance, growth, recovery and basic homeostasis. At this level, the system is no longer merely static matter, but a self-maintaining structure capable of sustaining itself over time.
From the perspective of cognitive architecture, CAL-2 still does not constitute a mental layer in a strategic sense. There is no awareness, no perception of the environment as meaningful, and no internal representation of the self or the world. The subject does not act;

it operates. Its processes are automatic, unconscious and oriented exclusively toward survival and internal stability.
In terms of strategic analysis, CAL-2 has no direct relevance for outsmarting. It does not produce decisions, intentions or adaptive strategies. Although it introduces functional complexity compared to pure material existence, it remains entirely outside the domain of cognition. The agent cannot learn, reflect or manipulate anything at this level.
For this reason, CAL-2 is also classified as pre-cognitive. Its role in the model is to ensure continuity of existence and functional stability, serving as biological infrastructure for higher layers. It supports cognition, but it does not generate it.
Examples: any conscious entity, by default.

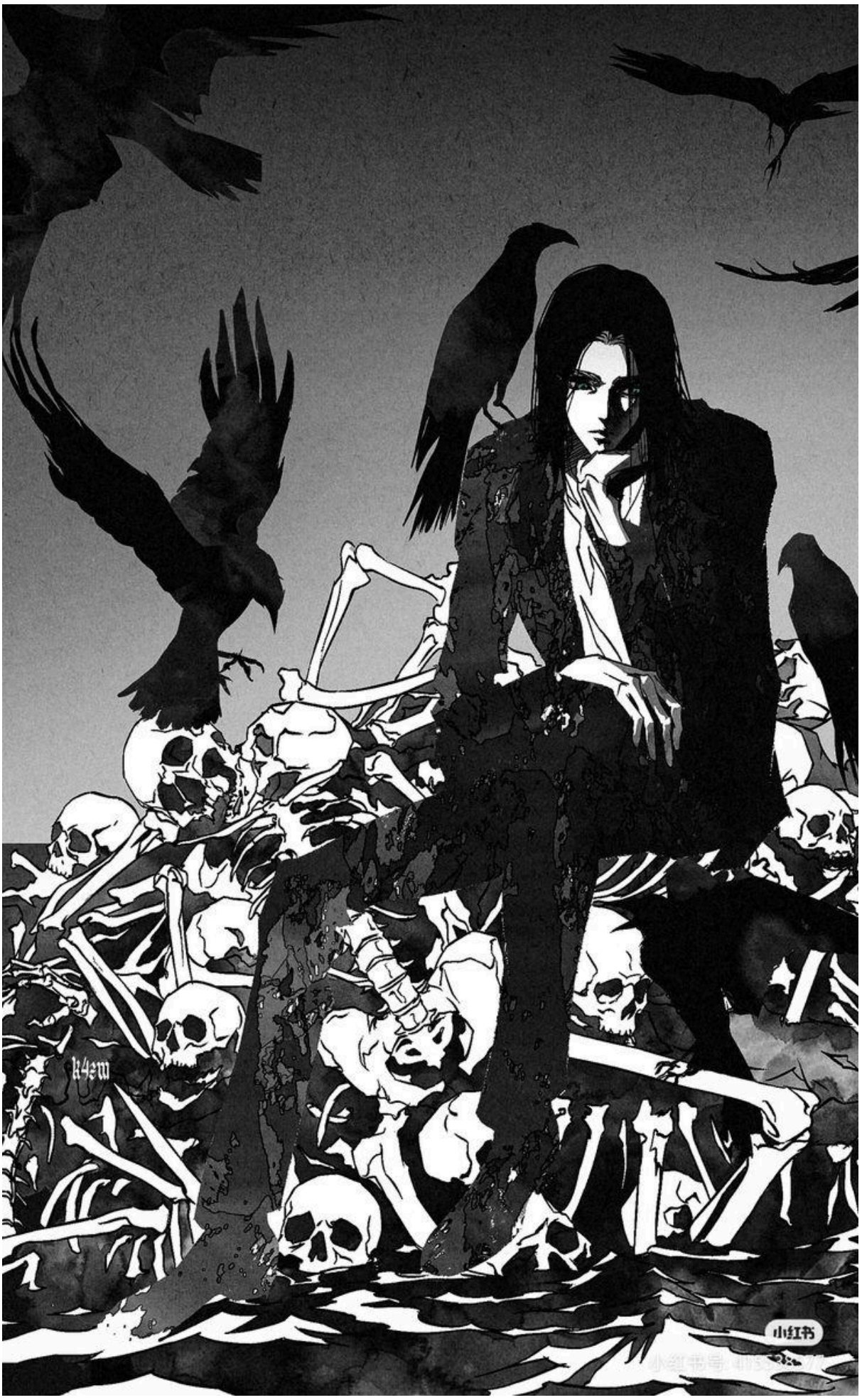
CAL-3 – Sensory Interface

This layer represents the level of raw perception, through which the subject receives information from the environment via sensory channels. It includes vision, hearing, touch, proprioception and any form of direct sensory input that allows the system to register external stimuli. At this level, the subject begins to have contact with reality, but without interpretation, meaning or internal modeling.
From the perspective of cognitive architecture, CAL-3 marks the emergence of subjective experience in its most primitive form. The agent is no longer a closed self-regulating system, but an entity that is affected by external conditions. However, this experience remains passive and reactive. Sensory data is received, but not organized, conceptualized or reflected upon.
In terms of strategic analysis, CAL-3 has minimal relevance. While it provides the raw data necessary for any future cognitive process, it does not produce understanding, intention or strategy. The subject can register changes in the environment, but cannot form representations, predictions or decisions based on them. Information exists, but it is not yet processed.
For this reason, CAL-3 is still considered pre-cognitive in the operational sense. It functions as the input layer of consciousness, enabling higher levels of cognition to exist, but without contributing directly to outsmarting or strategic behavior.
Examples: any conscious entity, by default.

CAL-4 – Affective System

This layer represents the level of conscious emotional response. It includes basic affective states such as fear, anger, pleasure, anxiety, frustration, attachment and aversion. At this stage, the subject no longer merely perceives stimuli, but reacts to them internally through emotional valuation. Reality begins to be experienced as good or bad, desirable or threatening.
From the perspective of cognitive architecture, CAL-4 marks the emergence of the psychological agent. The subject develops internal states that generate motivation, impulse and direction. Actions are no longer purely automatic, but driven by emotional forces that push behavior toward attraction or avoidance.
In terms of strategic analysis, CAL-4 introduces the first form of agency, but also the first major source of cognitive distortion. Emotions provide energy and engagement, making sustained action possible. At the same time, they generate bias, impulsivity and reactivity. The subject tends to act based on how situations feel, not on how they are.

For outsmarting, this layer is deeply unstable. Characters primarily operating at CAL-4 can be intense, persistent and driven, but are highly predictable and easily exploitable. Their decisions are shaped by immediate emotional states rather than abstract planning or long-term reasoning.
CAL-4 represents the minimal threshold of meaningful cognition. It allows action with internal direction, but without reflection or control. Strategy becomes possible, but remains instinctive, volatile and highly susceptible to manipulation.
Exemples: Eren Yeager (First seasons)


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CAL-5 – Mental Simulation:

This layer represents the capacity to generate internal representations of reality independent of immediate sensory input. It includes imagination, memory recall, projection of future scenarios and reconstruction of past events. At this level, the subject is no longer confined to the present moment and can operate with situations that are not currently occurring.
From the perspective of cognitive architecture, CAL-5 marks the emergence of simulated experience. The agent can now “run” situations internally, anticipate outcomes and form hypothetical models of the world. This allows the first genuine form of planning, even if still intuitive and unstructured.
In terms of strategic analysis, CAL-5 is foundational. Without it, no strategy is possible at all. The subject can begin to think in terms of “if–then” relationships and imagine consequences before acting. However, this simulation remains unstable and highly influenced by desire, fear and fantasy.
The main limitation of this layer is the lack of validation mechanisms. The subject can imagine scenarios, but cannot reliably test their accuracy. This creates vulnerability to self-deception, wishful thinking and distorted internal narratives. The agent may act based on what feels plausible internally rather than what is objectively grounded.
CAL-5 represents the transition from reactive behavior to prospective cognition. Strategy becomes possible, but remains fragile. The mind can simulate, but cannot yet rigorously evaluate its own simulations.
Exemples: Subaru Natsuki



CAL-6 – Symbolic System:

This layer represents the capacity to organize experience through symbols, concepts and language. It includes verbal thought, internal dialogue, abstract categorization and the construction of narratives. At this level, the subject no longer operates only with images or emotions, but with structured meanings.
From the perspective of cognitive architecture, CAL-6 marks the emergence of conceptual thinking. The agent can now name experiences, classify situations and describe internal states using symbolic systems. Reality becomes not only experienced, but interpreted through language.
In terms of strategic analysis, CAL-6 introduces communicable strategy. The subject can formulate plans explicitly, negotiate, deceive, persuade and construct coherent narratives to influence others. This is the foundation of rhetoric, discourse and social manipulation.
The main limitation of this layer is the risk of confusing symbols with reality. The subject may become trapped in verbal models, ideological frameworks or internal narratives that replace

direct understanding. Language becomes a filter that can distort perception instead of clarifying it.
CAL-6 represents the birth of symbolic intelligence. Strategy becomes expressible and transferable, but remains vulnerable to conceptual illusions and poorly grounded abstractions.
Exemples: Yokoya Nirihiko


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CAL-7 – Logical Engine:

This layer represents the capacity for structured reasoning and formal problem solving. It includes logical inference, pattern recognition, causal analysis and the ability to construct coherent chains of reasoning independent of emotional or narrative bias. At this level, the subject no longer relies primarily on intuition or discourse, but on internal logical models of reality.

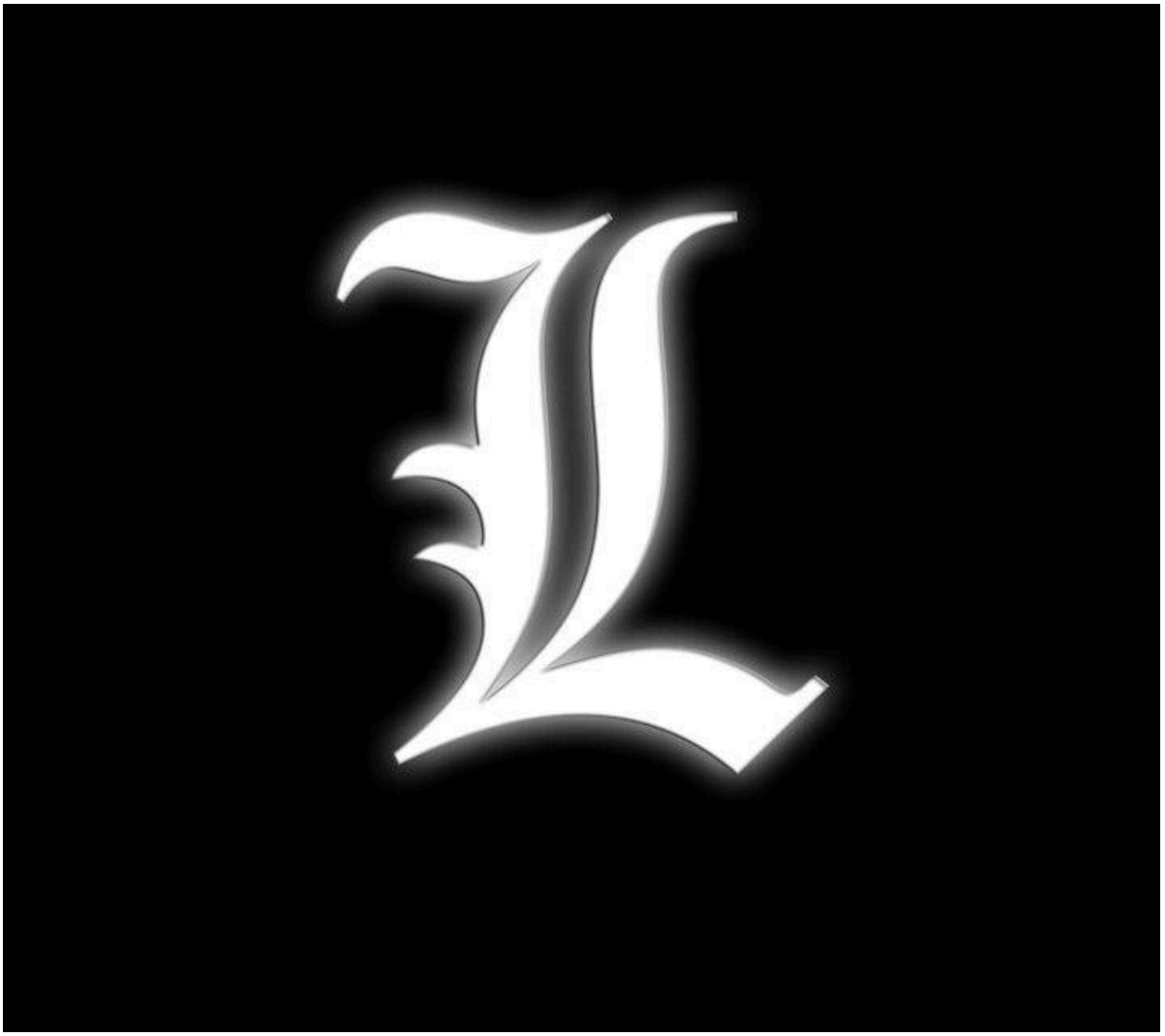
From the perspective of cognitive architecture, CAL-7 marks the emergence of true analytical intelligence. The agent can isolate variables, test hypotheses mentally, detect inconsistencies and revise conclusions based on evidence. Thought becomes systematic rather than merely symbolic.

In terms of strategic analysis, CAL-7 is the foundation of rational strategy. The subject can design plans based on probabilities, evaluate risks, anticipate opponent behavior through modeling and adjust actions according to logical feedback. Outsmarting becomes grounded in reasoning rather than rhetoric or emotional manipulation.

The main limitation of this layer is that logic alone does not guarantee strategic dominance. The subject may be highly intelligent in abstract terms, yet blind to psychological dynamics, self-deception or long-term identity management. CAL-7 thinkers often lose to higher layers because they assume opponents are rational in the same way they are.

CAL-7 represents the birth of the strategist as an intellectual system. Strategy becomes rigorous, but still incomplete, because it lacks deep self-awareness and social metacognition.

Examples: L lawliet



CAL-8 – Strategic Identity:

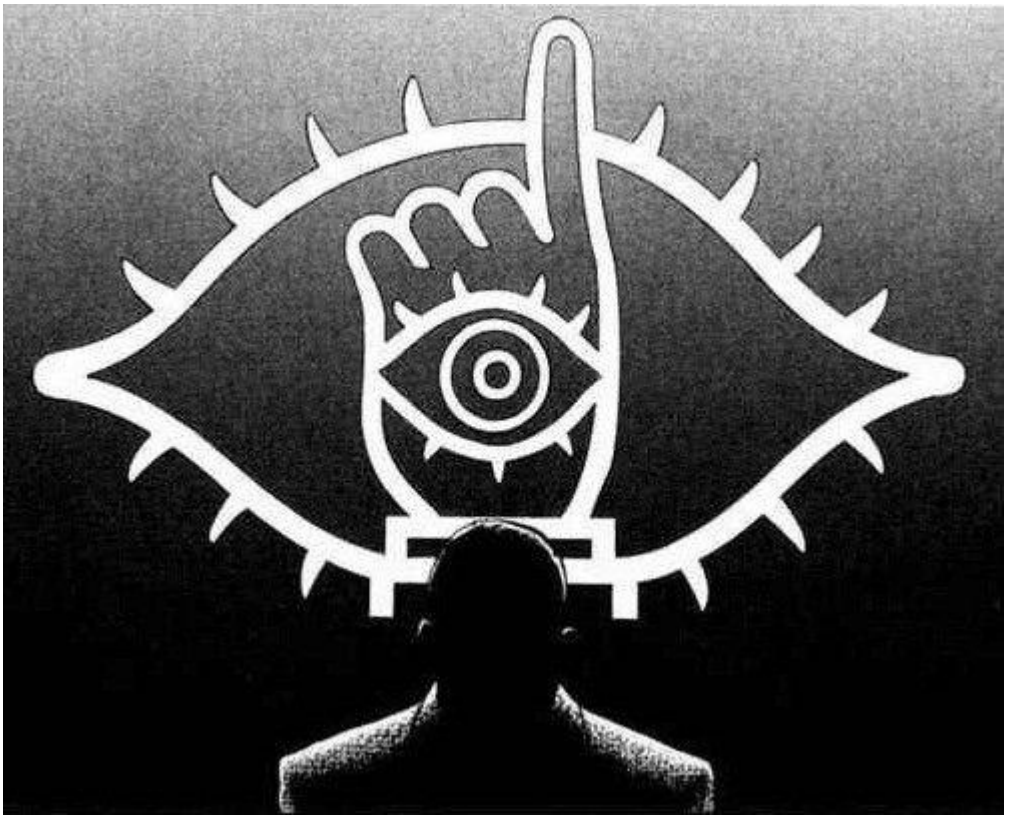
This layer represents the capacity to consciously construct and weaponize one's own identity as part of a strategic framework. It includes persona engineering, reputation control, role management, symbolic positioning and the deliberate shaping of how others perceive the self. At this level, the subject no longer operates only within the game, but becomes part of the game's structure.

From the perspective of cognitive architecture, CAL-8 marks the emergence of the self as an instrument. The agent understands that identity is not a fixed essence, but a variable that can be shaped, performed and exploited. Actions are chosen not only for their direct effects, but for how they modify the subject's image within a social system.

In terms of strategic analysis, CAL-8 introduces meta-strategy. The character wins by redefining the rules through presence, myth, fear, trust or authority. Influence precedes logic: the subject ensures that others interpret reality in a way that benefits their position, regardless of objective truth.

The main limitation of this layer is its dependence on external validation. Strategic identity exists inside the perception of others. If the social environment shifts, or if the constructed persona is exposed, power collapses rapidly. The subject is strong, but structurally fragile.

CAL-8 represents the strategist who understands that controlling perception is more effective than controlling facts. The battlefield becomes symbolic, and victory is achieved by shaping belief rather than solving problems.
Examples: Friend (20th Century Boys)



CAL-9 – Psychological Modeling:

This layer represents the capacity to accurately model the internal mental states of others. It includes deep theory of mind, emotional intelligence, behavioral prediction, personality reading and the ability to infer motivations, fears, desires and cognitive patterns in other agents.
From the perspective of cognitive architecture, CAL-9 marks the emergence of genuine social intelligence. The subject no longer interacts with people as abstract variables or symbolic roles, but as complex psychological systems. Others are understood internally, not just externally.
In terms of strategic analysis, CAL-9 introduces true psychological warfare. The character can anticipate reactions, manipulate emotions, exploit cognitive biases and design strategies specifically tailored to individual minds. Outsmarting becomes personalized rather than systemic.
The main limitation of this layer is overfitting to human behavior. The subject may become too dependent on psychological intuition and lose effectiveness in environments governed by rigid systems, pure logic or non-human agents. CAL-9 thinkers sometimes fail when the opponent does not behave like a mind.

CAL-9 represents the strategist who wins by understanding people more deeply than they understand themselves. Control is achieved not through authority or logic, but through insight into the structure of human consciousness.
Examples: Dazai Osamu



<u>CAL-10 – Metacognition:</u>

This layer represents the capacity for deep self-awareness and reflective control over one's own mental processes. It includes introspection, recognition of internal biases, regulation of impulses, monitoring of thoughts and the ability to step outside one's own cognitive patterns. From the perspective of cognitive architecture, CAL-10 marks the emergence of the mind as an object of analysis. The subject is no longer only thinking, but thinking about how they think. Internal processes become observable, adjustable and strategically manageable.
In terms of strategic analysis, CAL-10 introduces internal sovereignty. The character cannot be easily manipulated emotionally or psychologically because they detect and neutralize

their own vulnerabilities. They recognize when they are being influenced and can restructure their mental state accordingly.
The main limitation of this layer is that self-awareness does not automatically grant dominance over others. A CAL-10 agent may be internally free and cognitively stable, but still lack external leverage or systemic control. This layer is about mastery of the self, not mastery of the world.
CAL-10 represents the strategist who wins by being immune to manipulation. Control is achieved first inwardly, then outwardly.
Examples: Dr: Manhattan



CAL-11 – Structural Strategy

This layer represents the capacity to understand and manipulate systems at a structural level. It includes comprehension of rules, incentives, power dynamics, meta-games and the

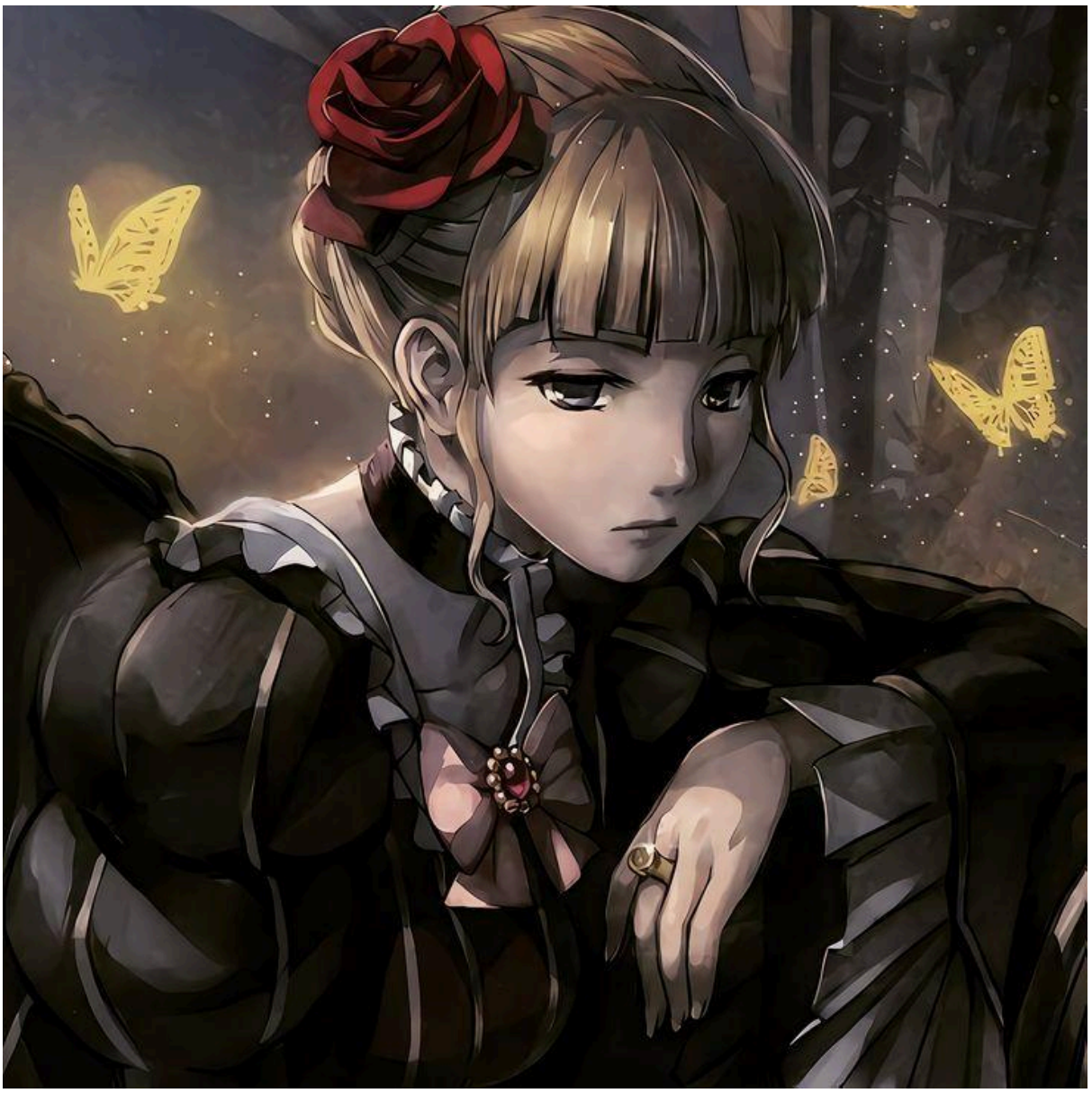
architecture of environments themselves. At this level, the subject does not merely act within a system, but treats the system as a strategic object.
From the perspective of cognitive architecture, CAL-11 marks the emergence of systemic intelligence. The agent no longer focuses primarily on people, identities or internal states, but on the invisible frameworks that shape behavior: institutions, rulesets, social structures, economic logics, metaphysical laws.
In terms of strategic analysis, CAL-11 introduces structural dominance. The character wins not by outplaying opponents directly, but by positioning themselves in a way that forces opponents into losing configurations regardless of their individual intelligence. Victory becomes a property of the system, not of isolated moves.
The main limitation of this layer is abstraction overload. The subject may become so focused on structures that they underestimate chaos, randomness or singular human variables. CAL-11 thinkers can lose to unpredictable events or to agents who operate completely outside expected frameworks.
CAL-11 represents the strategist who designs the battlefield itself. Control is achieved not through tactics or psychology, but through architecture.
Examples: Fang Yuan



CAL-12 – Ontological Agency

This layer represents the capacity to operate at the level of meaning, reality and existence itself. It includes the ability to redefine frameworks, transcend given systems, manipulate

narratives as ontological objects and treat reality not as a fixed structure, but as a mutable construct.
From the perspective of cognitive architecture, CAL-12 marks the emergence of the agent as a meta-entity. The subject no longer treats systems as external objects to be optimized (CAL-11), but recognizes that systems, rules and meanings are contingent and can be rewritten, abandoned or inverted.
In terms of strategic analysis, CAL-12 introduces ontological control. The character does not win by dominating people, identities or structures, but by altering the very layer in which those things exist. Victory becomes a matter of redefining what “victory” means.
The main limitation of this layer is instability. CAL-12 agents operate so far above conventional frameworks that coherence itself becomes fragile. Strategy risks dissolving into abstraction, symbolism or metaphysical games detached from concrete causality.
CAL-12 represents the strategist who is no longer bound by the game, the board or even the concept of a game. Control is achieved by rewriting reality’s rules, not by playing within them.
Examples: Beatrice Ushiromiya



Classification Guide:

This section explains how to properly assign a CAL layer to a character. The model is not based on feats, scale of influence, or narrative importance. Instead, it evaluates the dominant cognitive mechanism used by the character across most of their strategic actions. A character is classified according to how they think, not according to how much they achieve. Influence, power and resources do not determine CAL. Only internal cognitive structure does.
The core principle of classification is dominant mode of operation. Isolated moments, exceptional feats or rare behaviors do not change a character's layer. The correct layer is the one that best describes the majority of the character's strategic decisions.
In practice, classification should follow three main criteria:
First, identify the primary cognitive tool used by the character. Do they rely mainly on logic, identity, psychological insight, self-regulation, system manipulation or ontological control?

Second, remove scale and external resources. If the character lost their social position, power or narrative advantages, would their strategy still function? If not, the layer is being overestimated.
Third, analyze consistency. A character must operate at a layer regularly and structurally. **Occasional displays of higher-layer behavior do *not* justify reclassification**.
The CAL model rejects classifications based on outcome or perceived “impressiveness”. A character is not high CAL because they defeated strong opponents, but because their mind operates through higher-order cognitive structures.

When applying the CAL model, several interpretative pitfalls may arise. The most common mistake is to confuse scale of influence with cognitive architecture. Characters who control large systems, organizations or populations are often assumed to operate at higher layers, even when their internal cognitive mechanisms remain relatively simple, like Friend or Riku Dola.
Another frequent error is outcome-based classification. A character is labeled as high CAL because they “won” against powerful opponents or achieved impressive feats. However, CAL does not measure narrative success. It measures how the mind operates. Victory does not imply higher cognitive structure, and defeat does not imply lower architecture.
There is also a tendency to overestimate charisma and psychological impact. Characters who strongly affect others emotionally are often mistaken for CAL-9 or CAL-10 entities, when in reality they may be operating primarily through symbolic identity or social presence (CAL-8). Emotional influence is not the same as psychological modeling, and psychological modeling is not the same as metacognition.
In strategic matchups, CAL introduces a form of asymmetry that traditional intelligence scaling fails to capture. Higher layers do not guarantee victory, but they provide structural advantages in specific types of scenarios. Characters operating at higher CAL levels tend to perform better in long-term, meta-strategic and psychologically complex environments, where internal cognitive architecture becomes more relevant than raw information processing or logical skill.
Even when two characters display similar FSIQ or analytical intelligence, differences in CAL can generate **significant strategic gaps**. A CAL-10 agent possesses internal sovereignty that makes them resistant to manipulation by CAL-8 or CAL-9 entities. A CAL-11 agent can redesign the strategic environment itself, forcing opponents into disadvantageous positions regardless of individual intelligence.
However, CAL does not predict who wins a matchup. It predicts which type of mind is favored by the structure of the scenario. The model should **NOT** be used as a deterministic ranking system, but as a way to identify cognitive asymmetries and interpret strategic dynamics with greater precision.
Ultimately, CAL shifts debates away from feats, hype and perceived “impressiveness”, and toward the internal architecture of strategic cognition. It does not answer the question “who is smarter”, but reframes it as “how does this mind function”.

Final Notes:

The CAL model is not designed to rank characters by superiority, but to describe different types of cognitive architectures. Higher layers are not “better”, only more abstract and less common.
Most fictional characters operate between CAL-5 and CAL-8. Layers above that are rare because they reduce internal conflict and narrative tension. As a result, CAL-10, CAL-11 and CAL-12 entities tend to appear in philosophical or highly conceptual stories, like Umineko.
CAL should be used as an ***analytical tool***. Its purpose is to clarify how characters think, not to decide who would win.
Ultimately, the model exists to shift debates away from feats and hype, and toward the internal structure of strategic cognition itself.

Thank you for reading!