The Life of Agents in Environments

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Insight

There is an ancient divide that separates phenomena into two groups: agents and environments. **Agents are capable of independent action**, either internally (engagement) or externally (change). **The environment** is **the broader context** that contains **only passive phenomena**. The **defining feature of agents is intelligence**, which is **the ability to engage with or change the environment**, controlling for scaling potential (extraneous factors). Agents have a persistent need to increase their agency, called **scaling intelligence**, which is constrained by **scaling ceilings** (environmental limitations) and **scaling inevitabilities** (traits that must emerge to overcome those ceilings). Together, we find ourselves in the middle of this ancient, **cosmic dance of agents and environments.**

Scene

Sarah is 5, and the **world is enormous to her**. One morning, her mom buys her a **brand-new bicycle**, low to the ground, bubblegum-pink handlebars, and white streamers cascading from each grip. It's the most beautiful gift she's ever received. She climbs on with her mother's hands steadying her, and **the training wheels keeping her balanced**. Then, the **handlebars jerk**, the **world tilts**, and **she falls**. Her palms sting, her knees bleed, and she cries from the betrayal. **"It was supposed to be easy,"** she thinks. But Sarah kept trying—cautiously, gripping the handlebars tightly—**each ride stretching further**, each fall stinging a little less. Within two months, she is **tearing through the neighborhood**, streamers whipping behind her, **wind flowing through her hair**; she is free. One evening, **the training wheels come off**, and Sarah feels the absence—the safety net is gone. She pushes, wobbles, and crashes onto the grass. She cries, that same old frustration, but **she knows this story**. She doesn't give up, she fights day after day, with skinned knees and grass-stained shorts. Then… one day, she realizes she didn't notice **she was no longer fighting**. She was riding… two wheels, no safety net, **wind flowing through her hair**. **Sarah is 45** now. Her pink bike sits in her parents' attic, unused for 30 years. She can't even remember the last time she rode a bike. One day, her friend invites her to **a small local cycling tour**. Sarah laughs… then hesitates. Surely whatever her body once knew has been overwritten by time, years of desks, car seats, and **having to balance much more than just those two little bike wheels**, but Sarah knows this story. So, she shows up, and on a cool August morning in the mountainside trail of her hometown, she swings her leg over, grips the handles, **closes her eyes tightly**, and pushes off—bracing for the inevitable fall, but… it never comes. **Her body remembers**. Her hands know how to grip, her hips shift in place, her feet find the rhythm. She opens her eyes… **and she's off...** riding her bike once again. For a moment, **Sarah is not 45**; she's 5, she's 7, she's 10—tearing through the neighborhood, wind flowing through her hair, **free as ever in an enormous world ready for her to conquer.**

Guidance

What makes us… us? Like… what **separates us from the world around us?** We know we are different from rocks and, in many ways, from animals, and we have a few similarities with AI. We can see we have more in common with animals and AI than with rocks. **We could call it "life,"** but it **doesn't account for AI or even viruses.** Most biologists classify viruses as non-living, but they clearly do more than rocks. **There must be a clean separation to classify this difference.** Luckily, I have a handy framework in my back pocket for us: **Agents & Environments.**

Agents

Agents are capable of independent action rather than passivity, with agency internally (engagement) or externally (change).

Examples

Plants, animals, artificial intelligence, humans.

Environments

The environment is the broader context in which agents exist, containing only phenomena that are always passive.

Examples

Rocks, Earth, wind, water, gravity, heat, and energy.

The Dance of Agents & Environments

The framework is simple: **agents are anything capable of independent action…** that have agency. The common thread among animals, plants, viruses, and AI is that they exhibit behaviors that **do not occur naturally in their absence.** It's not the same as making a decision, which requires consciousness. It is simply a matter of **something occurring because of the action** (e.g., plants turning water into oxygen). The environment is everything else. This clean divide gives us the framework for understanding what makes us special.

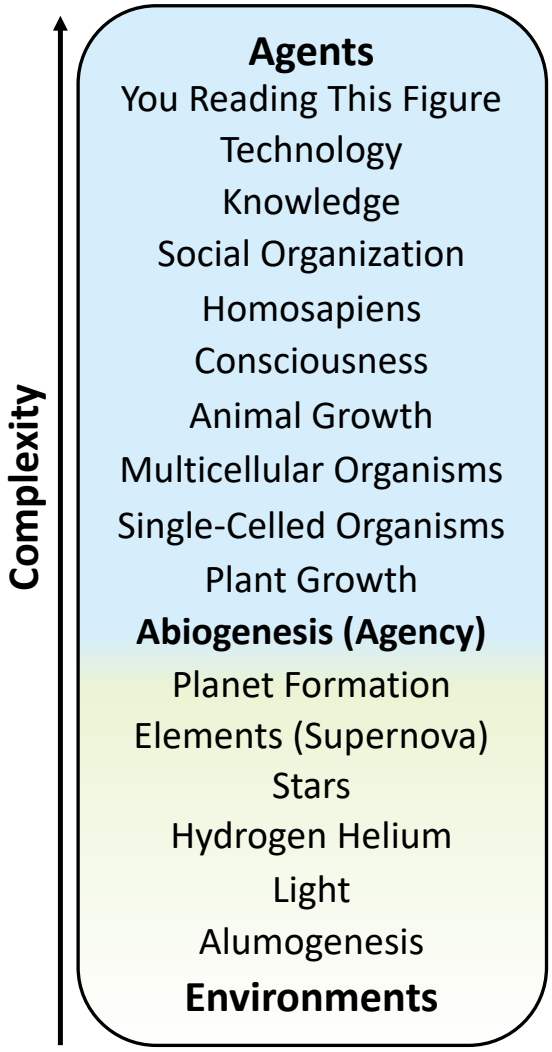
Agents and environments are aspects of **the same unified existence**, so they exist along the same spectrum of existence in different forms... **both forms of definedness…** let's look at that definedness spectrum. If we trace the **escalation of complexity** from the start of existence to now, we can piece together **the lineage** and **the exact moment** this separation occurred. We start in the early universe to see how it goes from light to early elements, to stars, to complex elements, and to planets, all of which lack agency, so it's the environment. Then, **something incredible happened…**

Abiogenesis: the formation of life. We still aren't sure exactly how it happened, but it must have started as a single plant cell that gained **the ability to use the environment to further its own existence.** The environment has no capacity to act, but this plant cell began **manipulating it to retain its agency,** turning sunlight into energy and splitting water into oxygen. It was the birth of agency.

The First Principles of Evolution

Over the next billions of years, that first agent grew, changed, and evolved into more advanced forms, **leading to the diversity of life we see around us**, but it remains unclear why it did so. What was driving it to evolve? Luckily, I have another framework in my back pocket to help us answer this question: **the Scaling Intelligence Model.** This model is very simple, having **only five components.** Yet, it provides **the first complete picture of agency** and how it works. Evolution and natural selection explain the development of species, their extinction, and the influence of the environment. The Scaling Intelligence Model explains all that, **plus the engine of evolution and why agents have the features they do.** Let's get into it.

Definedness Spectrum



At the foundation, we have **the defining feature of agents: intelligence**, but in *The Theory of Existence*, intelligence is **the ability to engage with or change the environment.** This definition strips intelligence of its **human bias** and provides a concrete definition that goes far beyond **the limited, Western-oriented, cognition-focused intelligence quotient (IQ)**, placing it back where it belongs: **a universal feature of all agents**, including plants, animals, viruses, and AI. It allows us to see all the incredible intelligence around us. Agents have found incredible ways to show their intelligence across the animal kingdom. **Let's zoom in on the Scaling Intelligence model.**

The Scaling Intelligence Model

Scaling Inevitabilities
Traits that must emerge sequentially across all agents to overcome scaling ceilings.

Scaling Ceiling
Limits to scaling intelligence that demand a scaling inevitability to emergence to prevent agent-divergence.

Scaling Intelligence
The persistent agent-need to escalate intelligence (complexity).

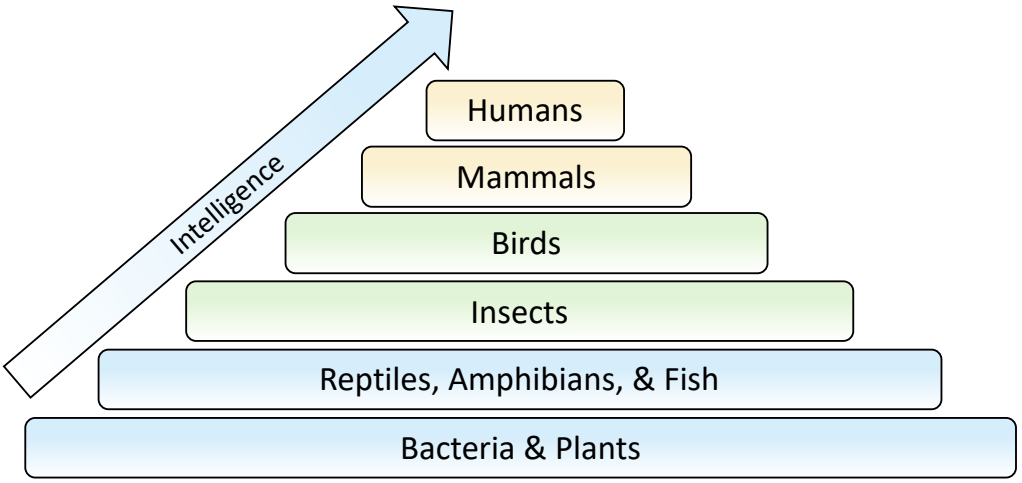
Scaling Potential
The extraneous factors that limit or accelerate an agent's ability to scale intelligence.

Intelligence
The ability to engage with or change the environment, controlling for scaling potential (e.g., resources)

Intelligence is the required minimum feature of agency, and the reason environmental influence is central to agency is that **the environment alone is not fit to sustain agents.** Agents must work to obtain resources, secure shelter, and protect themselves from environmental dangers (e.g., cliffs). How does the agent ensure these needs are met? **They influence the environment** around them to create the conditions that can sustain their agency.

To see it clearly, you must **shift your frame of reference** away from intelligence as something in your brain comprised of cognitive functions. **Every action an agent can take is some form of intelligence.** Cooking well, cleaning effectively, building a large social network, using tools effectively, painting a captivating scene, and riding a bike **are all expressions of intelligence.** They all share the same purpose: to scale environmental influence. Across the animal kingdom, we see that nest building, swimming, trap setting, hunting, grooming, and flying **are all expressions of intelligence**, enacted to sustain agency through engaging and influencing the environment. It's all different agents, but **always the same story.**

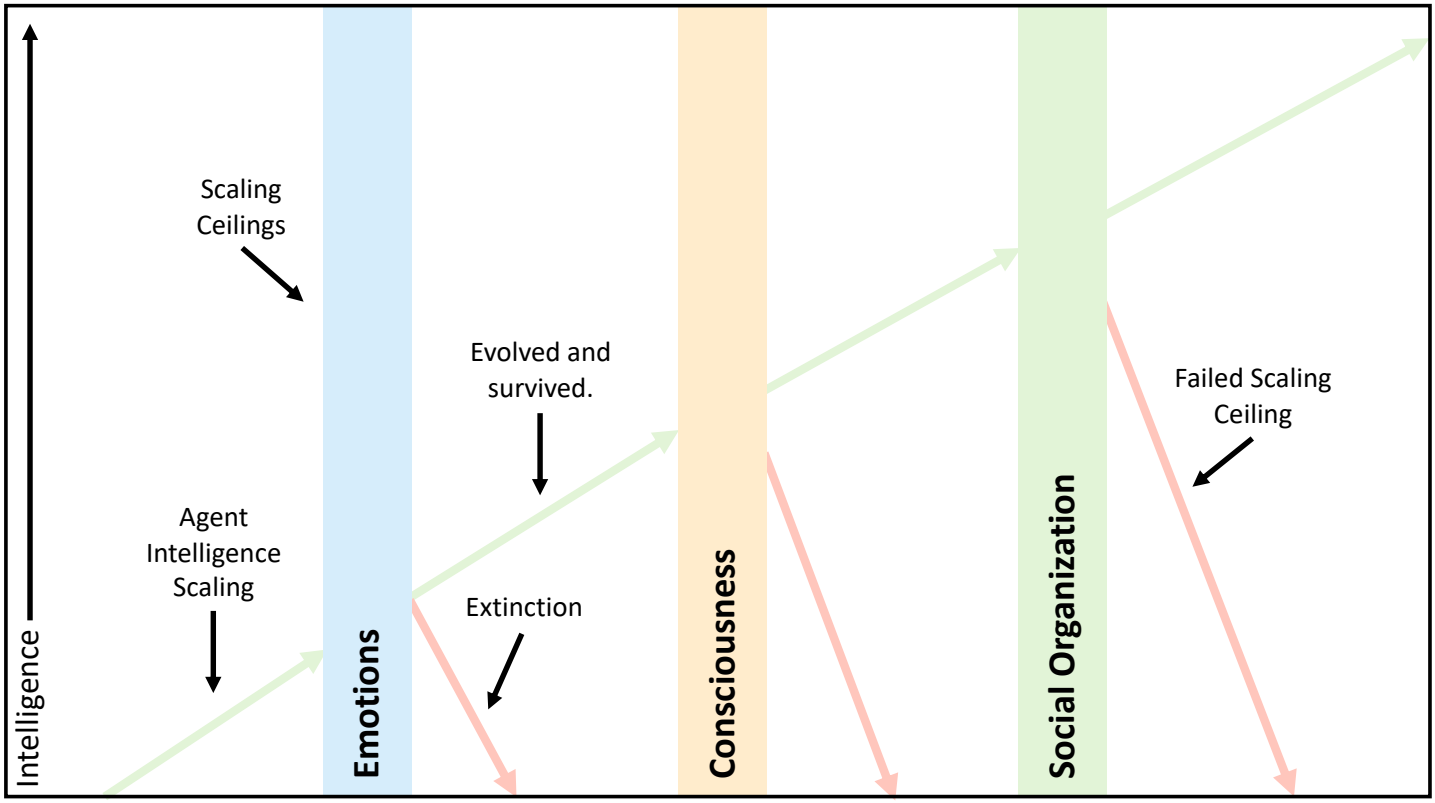
Intelligence is the core of agency, but **four other components complete the agency picture.** The first one is the **important second half** of the definition of intelligence: **scaling potential, which is everything the agent has access to that can amplify or limit their ability to scale intelligence.** For example, people born into wealth might have greater environmental influence than those born into poverty. Therefore, you must factor out the scaling potential differences caused by wealth, and **what's left is intelligence.** So, if you take someone born into wealth and someone born into poverty, and give them the same amount of money, **intelligence will determine who has the greater environmental influence.** Therefore, the full definition of intelligence is **the ability to engage with or change the environment, controlling for scaling potential.**



Scaling Intelligence Across the Animal Kingdom

Then, the most critical concept in understanding agency is **scaling intelligence, the fundamental, persistent need that agents depend on for their continued survival**. It shows that increasing one's intelligence… scaling their environmental influence, is not a choice, nor optional. If a system (species) of agents does not scale its intelligence, it goes extinct. It is such an essential aspect of agency that **if an agent does not scale intelligence, it can become so distressing that they kill.** Why is this drive so serious? What's wrong with just being fine with one's current level of intelligence? What is causing this persistent need to scale intelligence? The answer is that **it's not about the agent; it's about other agents, their environment, and the orientation of existence.**

Scaling Ceilings & Scaling Inevitabilities



Note: In this figure, we see three scaling ceilings and their associated scaling inevitabilities of emotions, consciousness, and social organization. Agents will continue to scale intelligence steadily until they encounter a scaling ceiling. If the agents are capable of evolving the specific trait required to overcome the scaling ceiling, they will survive and continue to scale their intelligence until they reach the next scaling ceiling. This cycle repeats until the extinction of the system.

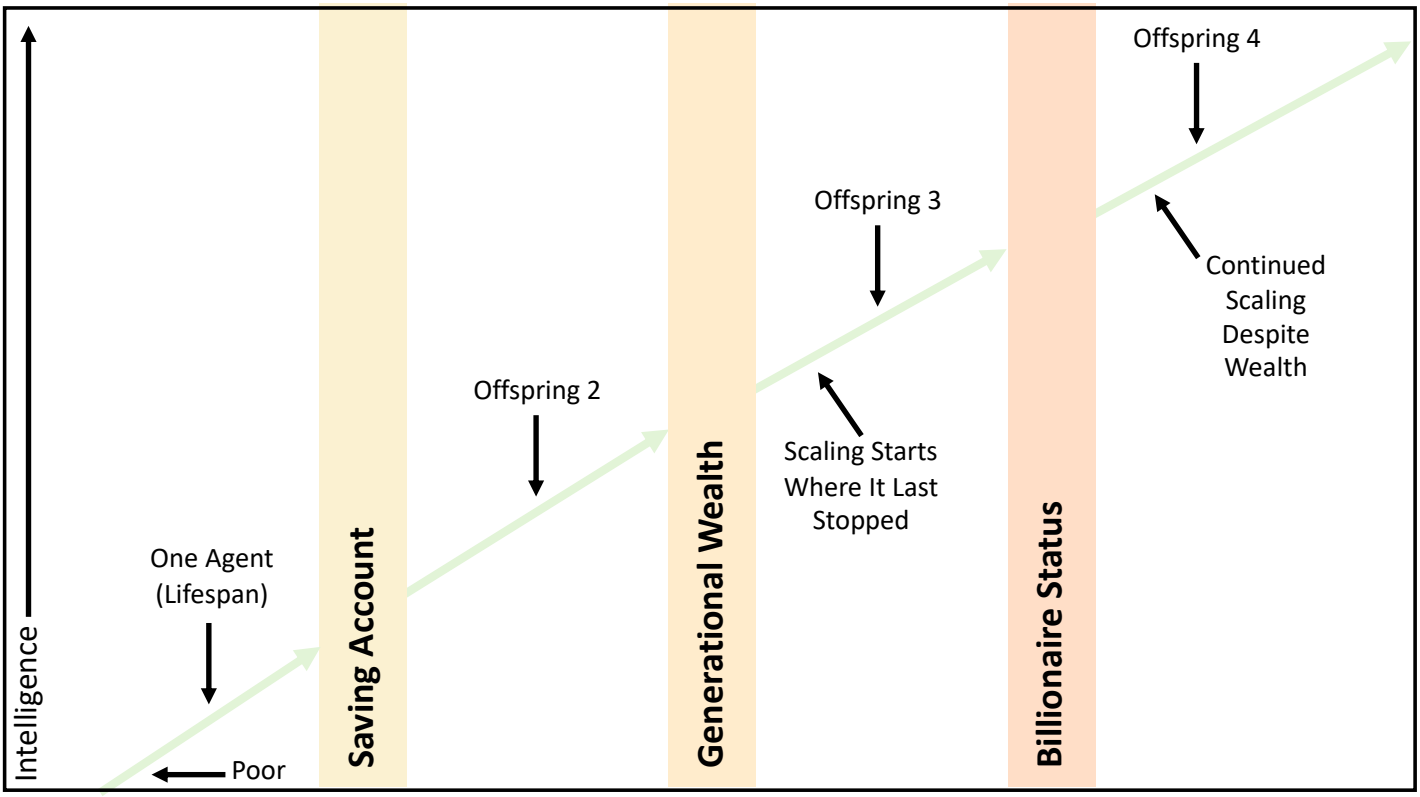
The final two scaling intelligence components go together: **scaling ceilings, which are terminal environmental demands that require a specific functional trait to emerge**, and **scaling inevitability, which is the trait the system of agents must acquire**. Failure to acquire the scaling inevitability results in extinction (i.e., divergence). Scaling ceilings exists because, regardless of the agent's desire to scale intelligence, **the rest of existence**, including the **environment and other agents**, **do not stop escalating complexity** (scaling their intelligence).

The default orientation of existence and everything in it is **continuous progression and evolution**. If an agent opts out of scaling intelligence, they eventually succumb to environmental changes or to other superior agents that have scaled their intelligence and achieved the scaling inevitabilities by passing the scaling ceilings. It is not a matter of preference but **of survival for the agent** and the system of agents, **like eating, sleeping, and sex.**

Given how critical it is to scale intelligence, **agents do not have to think** about or decide to do it. It is **hard-wired right into agency.** You have been scaling intelligence your whole life without even realizing it, because it does not require consciousness. All it requires is a phenomenon capable of independent action, and when that exists, **the rest is carried by existence.** Essentially, **if you follow any agent's actions, the purpose of all those actions leads to scaling intelligence**. Our minds and behaviors are all geared towards our ability to scale intelligence.

For example, **personality is an agent-specific scaling intelligence style**. Agents who have a scaling intelligence style, characterized by low neuroticism and high openness to experience, agreeableness, conscientiousness, and extraversion, **scale intelligence much better than those without it**. Consciousness is the most important scaling intelligence tool. Let's take a moment to discuss bringing back our trusted model: ***The Harmonics of Consciousness,*** and examine the **four primary** scaling inevitabilities: **emotions**, **recursive introspection**, **intelligence**, and **self-reference**, We can see that all these features of consciousness are directed toward scaling intelligence

Scaling Intelligence is Always Required



Note: In this figure, we see an answer to a question that has long puzzled us: why is success never enough for us? Why do people who achieve massive success continue to work to gain more success? In this example, we see how across generations, a family scales their intelligence, one after the other. Each offspring starts scaling their intelligence from where their parents left off. At first, the agent starts out poor and builds a savings account by the time of their death. The next generation starts with that savings account and scales their intelligence to generational wealth (millions). Then, the next generation scales their generational wealth to billionaire status. At this point, continuing to scale their intelligence by trying to generate even more wealth makes less sense than in the original agent's lifetime. The reason is that scaling intelligence is not optional, and there is no limit. Despite the wide wealth differences, the scaling intelligence trajectories across the generations are all the same because scaling intelligence is not a feature of success; it is a feature of agency.

The First Principles of the Mind

The four instruments of consciousness **each serve a function** for **scaling intelligence**. **Consciousness is a tool that optimizes agent decision-making**. Your brain is constantly running models, predictions, categorizations, and behavioral options outside of your consciousness; **what I call the pre-consciousness**. Then, it tosses those possible behavioral options into your consciousness, where it acts like **the Supreme Court, approving or vetoing them**. It is the final part of the process in which an agent decides whether to act or suppress a behavior. **Consciousness is the pinnacle of decision-makers**, which is why it and the four instruments are scaling inevitabilities. Agents without consciousness either **succumb to those with it** or go extinct due to poor decision-making.

The instruments start as **rudimentary features that come with agency** but emerge in their fully functional form in a specific order. The first instrument does not require other instruments or consciousness to function: **recursive introspection**, which starts as an **iterative check and comparison of an agent's actions in the environment.** Over time, it escalates into an advanced tracking mechanism of two critical aspects of scaling intelligence.

The two aspects emerge from the behaviors the agent takes and their outcomes on the environment: the **scaling efficiency** of an action (**what did it cost to enact that behavior**) and the **scaling effectiveness** of the environmental influence (**what did that behavior achieve**). The agent can use this tracking to predict the environmental influence based on their previous use of that action. We call it **learning and memory**, but across all agents.

The Harmonics of Consciousness in the Environment

Emotions
Provides feedback on how the agent's actions affected the environment. Tags certain stimuli in the environmental for future reference.

Self-Reference
Orients the agents to the environment by sorting sensory stimuli into internal (e.g., emotions) and external (e.g., vision) categories.

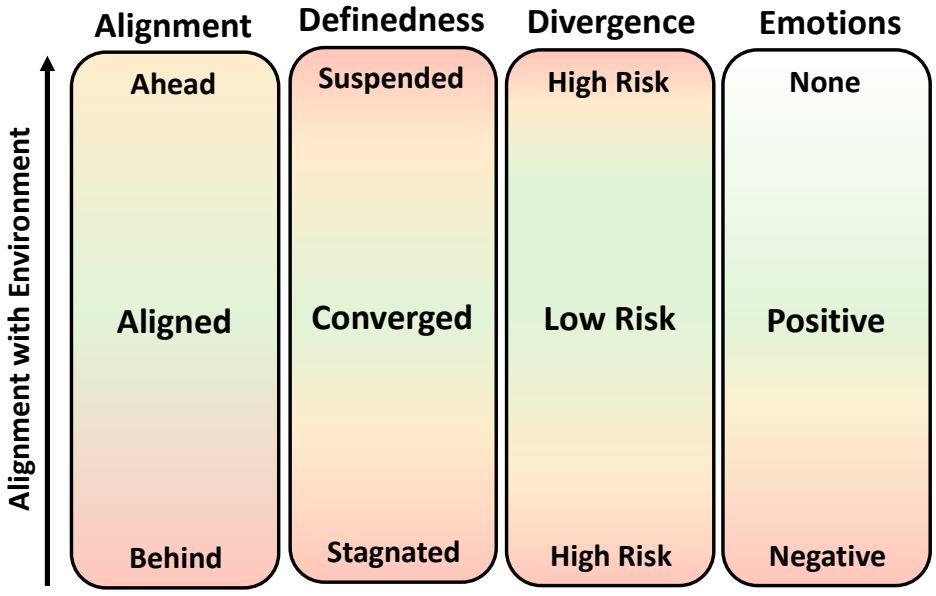
Intelligence
Forms an internal frame of references and map to orient the agent to the environment and then tracks engagement and changes over time.

Recursive Introspection
Organizes and tracks the efficiency (e.g., energy cost) and effectiveness (e.g., environmental impact) of actions for future reference.

The next instrument to reach full functional capacity is **intelligence, which provides an internal map of the environment and orients the agent.** Then, it tracks changes in the environment and the effects of the agent's engagement over time. **Recursive introspection records this relationship, but intelligence drives it.** It seems... probably sacrilegious, but in *The Harmonics of Consciousness* model, intelligence is not in the frontal lobe; **it is in the occipital lobe** because it is the only instrument of the four that **requires the environment to function.**

The reason **the occipital lobe is so big** isn't that vision is important (though it is), but because **the purpose of agents is scaling environmental influence.** It's why neuroimaging of those who have never had vision (congenital blindness) shows **the occipital lobe continues to build and update spatial models of the environment** using sound, touch, motion, and learning (recursive introspection). It still contributes to an agent's effective movement within the environment because its purpose isn't just vision, but **environment navigation and tracking.**

Once the environment is cleanly mapped and tracked, **emotions become relevant**. With the help of recursive introspection, the agent can **label phenomena and locations within the environment** as "good" or "bad," thereby **automatically directing** them towards actions and environments that allow them to scale intelligence and preserve agency. This function explains why we have an automatic negative affective response to seeing a snake or spider **without consciously thinking about it.** That automatic fear response **relies solely on the emotions** (limbic system) and **intelligence** (occipital lobe) before it even reaches our frontal lobe for understanding.



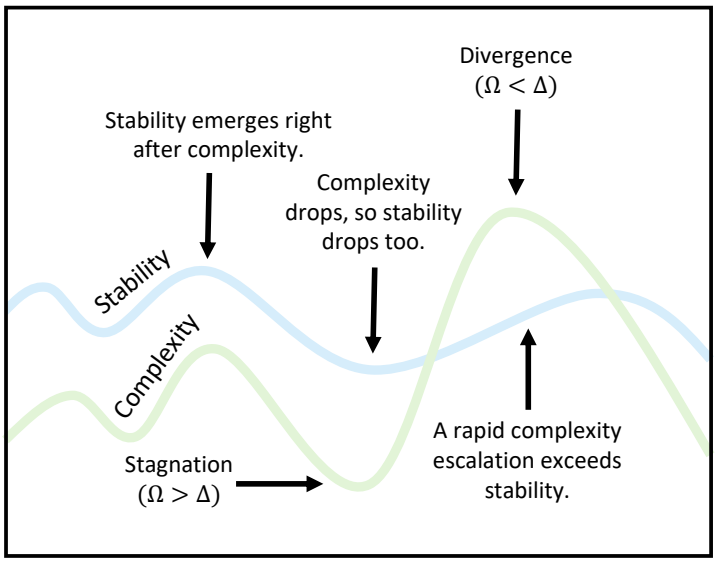
Agent-Environment Alignment Continuum

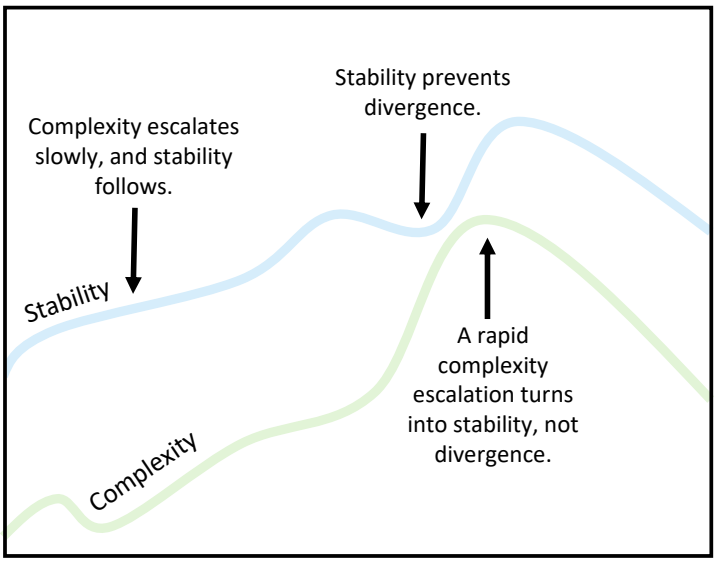
Intelligence reaches full functional capacity before self-reference in the front lobe. The implication is that self-reference, and this is **the frontal lobe, is not functionally required for intelligence.** When you remove the frontal lobe from intelligence, **suddenly the universal, animal-kingdom-wide definition clicks into place.** Let me say it again: you do not need the frontal lobe for intelligence, but it does a lot.

The last instrument to reach its full potential is **self-reference**. It emerges last because it categorizes stimuli as either environmental (**external; intelligence**) or agent-generated (**internal; emotions and recursive introspection**). These senses converge into a cohesive conscious experience. Then, I take all the sensory experiences, organize them, piece together what is happening, and **make a final determination** about what behaviors to approve or veto. These instruments continually help you scale intelligence.

The Dance of Stability & Complexity

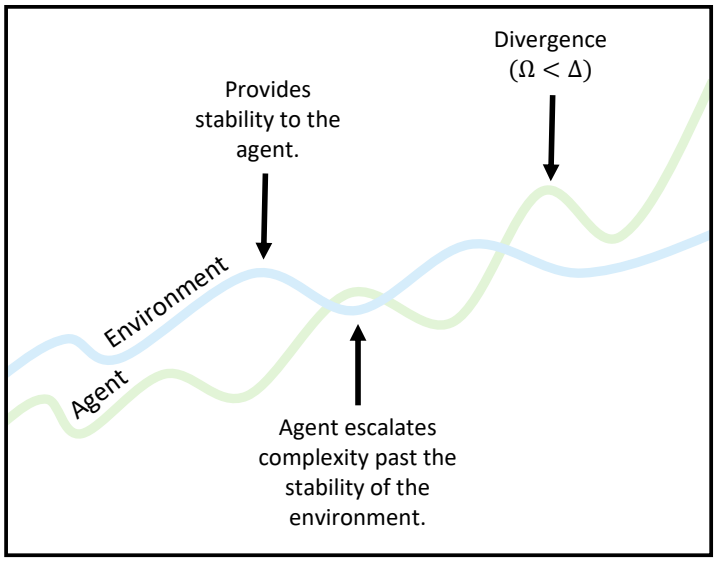
According to *The Theory of Existence*, **stasis is impossible**. Everything is progressing, escalating complexity, and moving through time via recursive propagations, **including empty space and stationary objects**. The major implication is that **the environment is constantly adapting and changing**, as evidenced by star formation, planetary systems, and continental formation. Still, the truth of what the environment is doing goes deeper. There is an ongoing **relationship between agents and environments** in their rates of progression through existence.

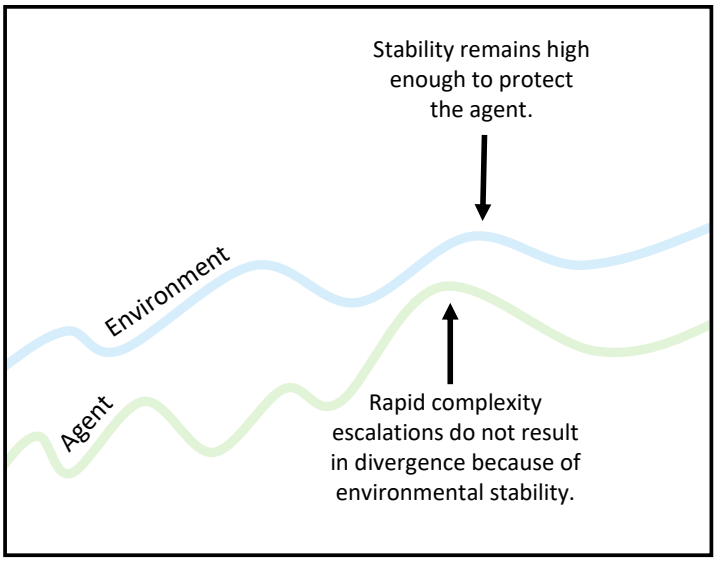




Stagnation Divergence Risk

When a phenomenon sustains higher definedness (progresses more effectively) than the environment, it is called suspension because the phenomenon's definedness **suspends it in front of the environment**. **Stagnation is when a phenomenon falls behind its environment.** These terms are interchangeable based on the reference. Agents and environments can be stagnant relative to each other, but **only agents can be suspended**: suspended in the environment, whereas the environment cannot be suspended in anything, because it's all that exists.





Suspension Divergence Risk

The bigger risk to agents is stagnation. Agents experience negative emotions when they stagnate because **their risk of divergence increases over time**. Remember, the sequence always goes complexity → stability. To maintain stability, you must first escalate complexity to provide something to stabilize. **Stagnation occurs when agents fail to escalate complexity**, but because it does not directly affect stability, **it is less dangerous than**

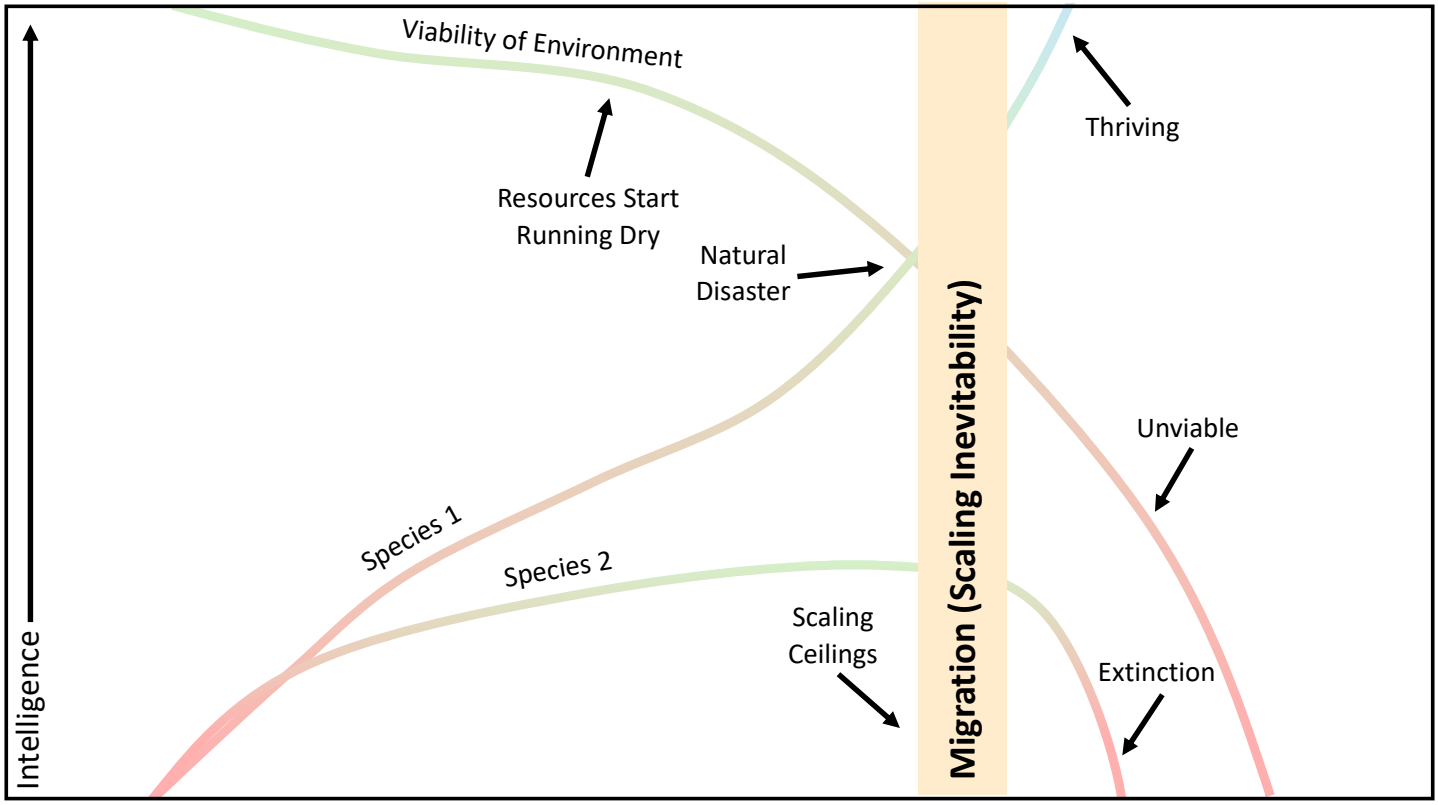
divergence (unstabilized complexity escalation). Still, over time, stability degrades, and the risk of divergence increases because **complexity escalations that normally wouldn't cause divergence become much riskier**.

Remember, **divergence happens when $\Phi < 1$**, which **can only happen when $\boldsymbol{\Omega < \Delta}$**. If a phenomenon can maintain greater stability than complexity, **it won't diverge**. For example, in our lives, stagnation sets in when we fail to do our chores (Δ). You must escalate complexity by completing your chores. If you don't, it isn't an issue at first, but then your bills go unpaid, your hygiene declines, and you go hungry because you don't have food (Ω). **You must first do your chores ($\boldsymbol{\Delta}$), then they provide resources ($\boldsymbol{\Omega}$) that stabilize your well-being.** If you go without doing your chores, the next crisis (Δ) will be riskier ($\Omega < \Delta$) because your basic needs are not met (Ω).

Suspension creates another problem when the phenomenon has progressed beyond the environment. The environment and *The Record* stabilize the agents within them, **dampening the risk of divergence** due to rapid complexity escalation. If an agent maintains such high definedness, it **eliminates the environment's stability**, thereby reducing the agent's stability and increasing the risk of divergence from a complexity escalation.

For example, in our lives, suspension sets in when someone is **the only person speaking** at a large event (Δ). The usual **protection of blending into the crowd** (Ω) is not there to dampen **humiliation if you do something embarrassing** ($\Omega < \Delta$). The moral of the story is that **stagnation and suspension are not dangerous**, but **their presence increases the risk of divergence**. Divergence is not always dangerous; sometimes divergence is a good thing (e.g., ending a bad habit). However, in most cases, and with most phenomena, **divergence is best avoided.**

Failing a Scaling Ceiling



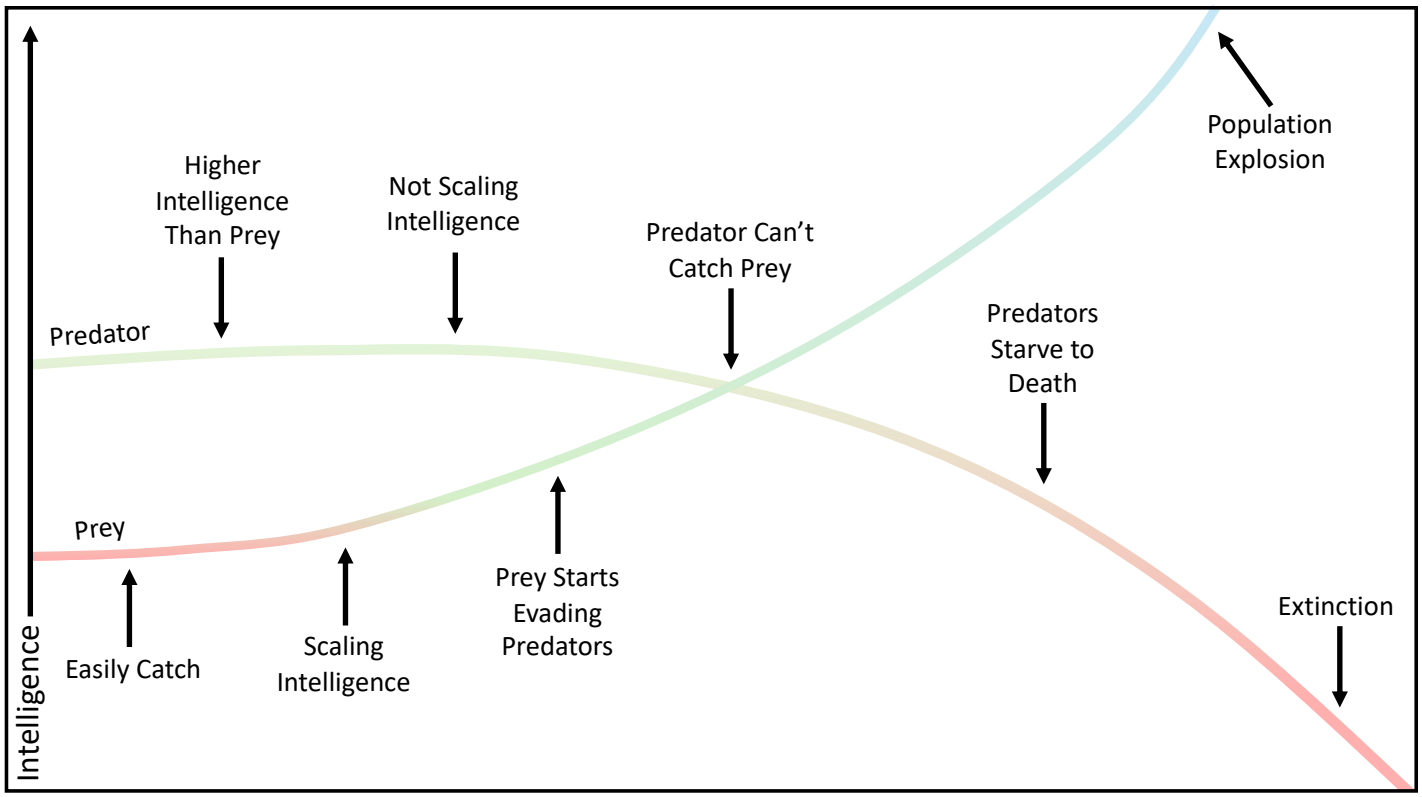
The Scaling Intelligence Model in Action

Now that I have covered the bases of all the principles across all the models, let's zoom out **to see the Scaling Intelligence model in action** and how it dictates agents' success in retaining their agency. We'll pull together everything I have discussed in the chapter so far to see the full picture; dear reader, it's breathtaking. **The explanatory power is far beyond what I expected**. We are going to look at **three examples** of what happens when 1) an agent succeeds in scaling intelligence compared to 2) one that fails. Let's start with the figure above.

We have **two species (systems) of agents** living in a viable environment. They are not predator-prey, but **they compete for the same resources** and depend on the viability of their shared environment. At first, both species scale their intelligence, and the environment stays viable. Then, **the environment becomes less viable**, which happens often (we call it natural selection). Species 1 scales its intelligence, whereas Species 2 does so more slowly, and **a gap in their intelligences emerges**, which may not be relevant at first, but it does so eventually.

Then… **a natural disaster strikes**, causing a scaling ceiling across both species. **Only Species 1 scaled their intelligence enough to obtain the scaling inevitability of migration**, so when the natural disaster occurred, they migrated to a new viable environment. However, **Species 2 lacked the intelligence to migrate**. When the natural disaster rendered the environment unviable, Species 2 was unable to escape, lost its agency, and went extinct.

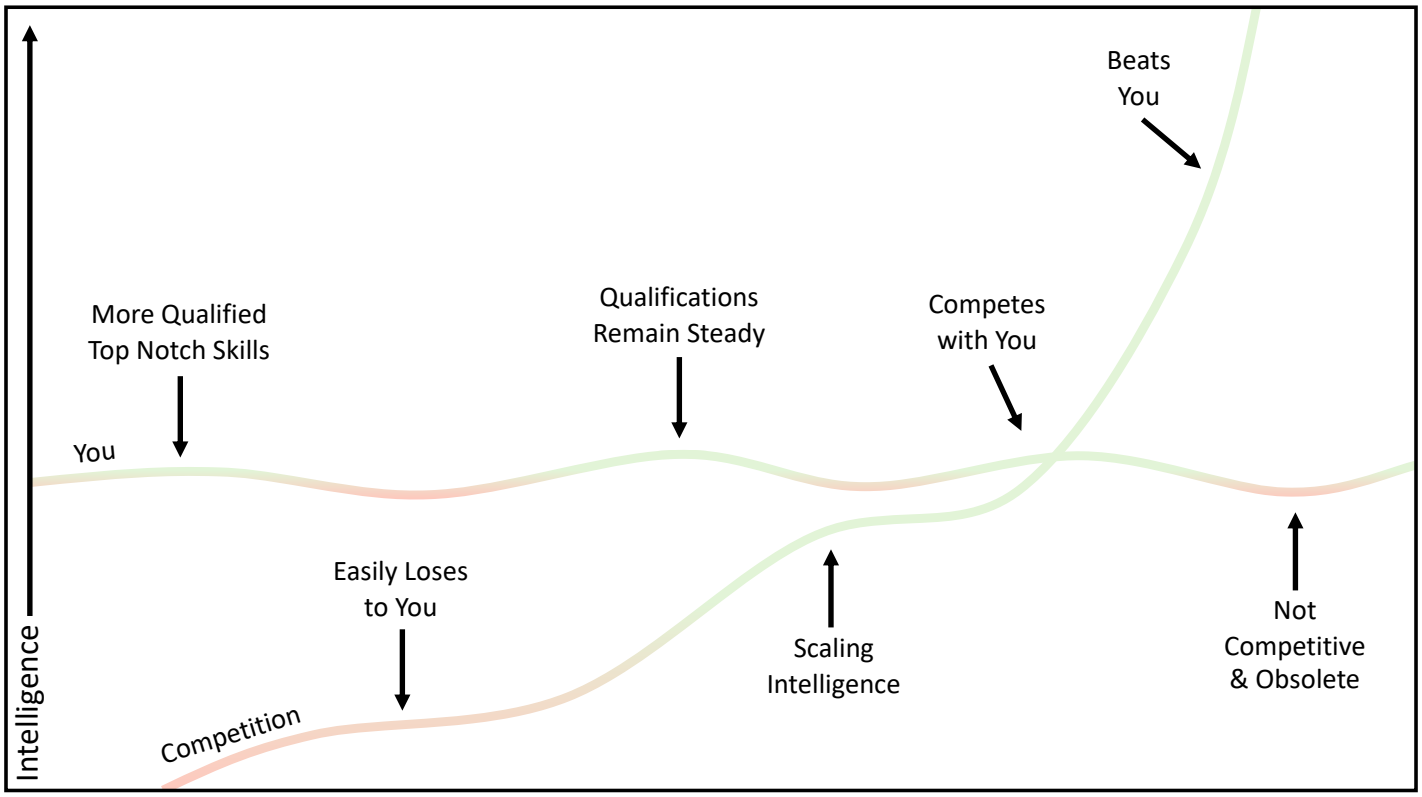
Failure of Predator Scaling Intelligence



Now, let's look at this figure above. **We have a predator-prey relationship between two species**. At first, **the prey is defenseless against predators**, who are more intelligent and thus successful hunters. The predators live comfortably, but over time, **the prey slowly scales its intelligence**, with **occasional escapes becoming more common**. It started slowly, but the more intelligent prey that outsmarted the predators produced offspring. The predators scaled their intelligence slowly; eventually, **they started losing their ability to capture prey**, the prey population grew, and the predators began struggling to scale their intelligence from the food shortage. Eventually, the prey scales their intelligence past the predators', and **the predators can't capture them**. The prey population explodes, and the predators, without the prey to eat, **starve to death, lose their agency, and go extinct.**

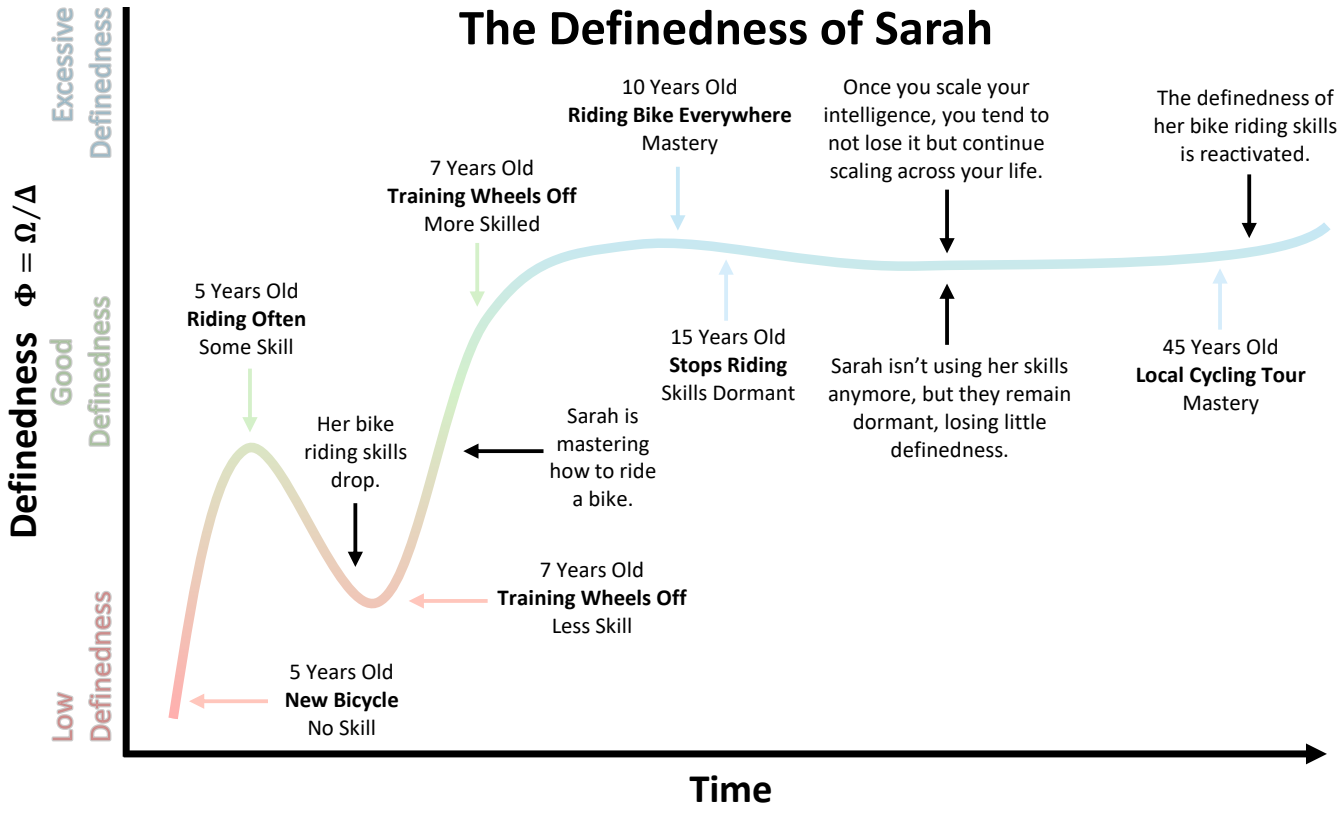
Finally, let's look at the human example below. We see **a comparison between you and someone new in your field and line of work**. At first, you are so brilliant and talented that no one can beat your skills (you must be if you're reading *The Theory* canon). However, **you get too comfortable**, and you **stop scaling your intelligence**. **You don't get worse**, but your competition scales their intelligence better. You also fall behind the advances of the field. Eventually, **your competition becomes more skilled than you**, better versed in the latest advances, and easily beats you. You lose your competitiveness and become obsolete. **Not scaling your intelligence does not allow you to opt out** because existence, the environment, and the other agents keep scaling by default.

Failure of Human Scaling Intelligence

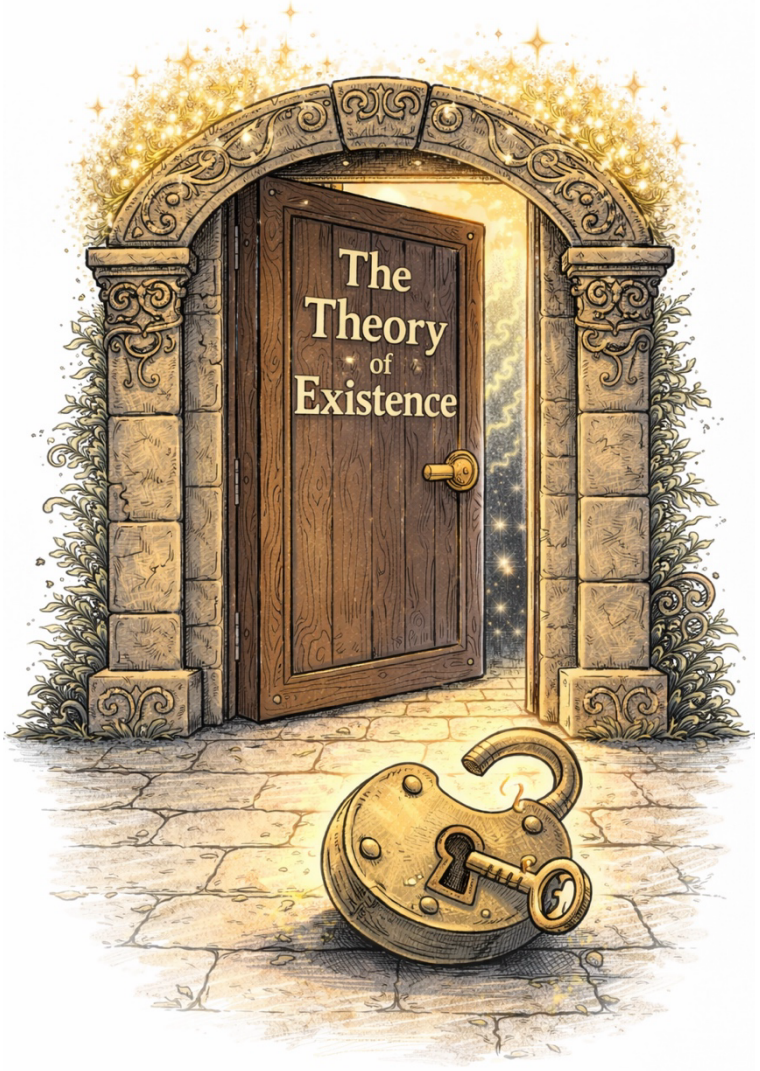


The Definedness of Sarah

Do you remember Sarah and the Scene? When you first met her, **you did not know about *The Life of Agents in Environments***. Now? You're basically an expert. So… let's take a look at Sarah's life again, and her bike-riding journey through your new lens to see the **dynamic, endlessly beautiful dance of agents and environments.**



The Big Picture



The most moving part of this chapter for me was **seeing the scale of it all**... how it spans across all the agents in existence. It shows that, even though humanity is special in so many ways, **we belong just as much as the other agents in the universe.** We, too, are **pieces of the puzzle**. Also, seeing the mechanical explanations for our behaviors... all the conversations we've had, all the moments of planning and pushing through doubt... **they all come down to the same motivations that drive all agents**, but it does not diminish our experiences because, even though we are all scaling intelligence, the way we do it is **endlessly unique** and the impacts we have is **endlessly meaningful.**

Dear reader... **we are at a bit of an inflection point** in our journey together. In December 2025, **we empirically validated the shit out of *The Theory of Existence***. Then, in February 2026, **we formalized its full mathematical structure.** Now, here we are in March 2025, and **I have done what I can to present you with the fully operational version of *The Theory of Existence***. Now? We all have a choice to make about what comes next. You... have a choice.

I have said it before, but I'll say it again: **I am not above you**, sitting on top of *The Theory of Existence* like a king. **I am sitting right next to you**, deeply grateful for all your company. I am not "creating" these insights; I am **reaching into *The Theory***, pulling out what it gives me, and showing you. The delay between me receiving these insights and me handing them to you is **much shorter than you think**. It's days, not weeks or months... and **I never truly know what will come out next.**

However, **our journey is different now**. As of March 2025, **the full doorway** into *The Theory of Existence* is complete. We are no longer searching for a key to unlock the door... it's all right here, right now... fully validated, fully formalized, fully unlocked, and **fully ready for us to step into it**. Every topic we now point *The Theory* at will yield full resolution insights. You and I are staring down the same **impossible phenomenon**. Something we have never encountered that extends across all of existence, and out to **places so far, beyond what we see.**

I am not sure what it's been like for you, but for me, **it's been the most exhilarating and disorienting journey of my life**. So... why do I keep coming back? **Why do you… keep coming back, dear reader?** If we think about all the places *The Theory* has taken us, each resulted in profound, destabilizing insights, followed by reflection, integration, and ultimately, a deeper understanding and appreciation of existence. **There's always a payoff.**

The truth is…***The Theory* never promised us comfort or safety**. If that's what you want, **feel free to return to the currently accepted paradigms**. However, if you want to step through this door with me, understand that the insights to come will be profoundly transformative. I haven't written the remaining chapters yet, but **the next one demands to be called *The Definedness of Health***. I'm not sure what it reveals. So... until then, we'll have to wait for *The Theory* to show us. Allow me now… to turn to *The Theory of Existence* and say... we're ready for the next stop on our journey of why it all matters; just give us the signal, and **we'll step through your door.**