

SIMULATION AND EXECUTION

TWO MODES OF INTELLIGENCE



Simulation and Execution: Two Modes of Intelligence

Introduction:

We are the story we simulate and enact. Human intelligence operates in two inseparable modes: internal narrative simulation and external embodied execution. The mind continuously composes an inner story—imagining, rehearsing, and editing possible versions of ourselves—while the body carries out actions that actualize these narratives. Modern psychology describes our identity as a narrative identity, an internalized and evolving life story that reconstructs our past and imagines our future to give coherence and meaning to the self. Rather than treating thought and action as separate faculties, this essay reframes them as deeply integrated within one ongoing narrative process. We will explore how attention, recursive rehearsal, and symbolic expression within our internal simulations shape identity, and how embodied execution transforms our inner narratives into lived reality. Throughout, we emphasize the inevitability of narrative within cognition, grounding the principle that we become the story we tell ourselves and act out.

Simulation: The Internal Narrative Engine

Simulation is the mind's ability to internally model and rehearse experience without directly enacting it. When we plan, daydream, revisit memories, or consider others' perspectives, we run mental simulations. These simulations are fundamentally narrative: we sequence events, populate them with characters (often ourselves as the protagonist), and infuse them with intentions and emotions. Cognitive science reveals that our brain naturally engages in this narrative-oriented activity whenever we think internally, suggesting that our default cognitive state involves storytelling.

This internal storytelling is not merely idle imagination; it is how identity itself is constructed. Psychologist Dan McAdams describes narrative identity as an internalized story integrating our autobiographical past and imagined future, providing temporal coherence, unity, and purpose to our sense of self. By continually narrating our lives internally, we connect who we were, who we are, and who we might become into a coherent, meaningful arc. Every remembered experience becomes woven into the storyline of "me," and every anticipated plan drafts a future chapter. This ongoing personal narrative is inherently recursive—we revisit and revise scenes from our past and simulate potential future scenarios, continually updating our identity.

Three cognitive processes within the simulation mode are crucial in shaping the self-narrative:

Selective Attention:

What we attend to becomes material for our narrative. As William James emphasized, "My experience is what I agree to attend to. Only those items which I notice shape my mind." By focusing on certain experiences while disregarding others, we effectively edit our life story in real time. For example, someone might experience many successes throughout the day but dwell exclusively on a single failure, thereby narrating a self-story of struggle. Attention

illuminates specific scenes within our internal narrative, determining which moments define "my story." Over time, these choices shape our personality and worldview—a mind attending primarily to hope crafts a hopeful narrative, while one attending to fear shapes a fearful identity.

Recursive Rehearsal:

Our minds possess the remarkable capacity to replay and reimagine experiences repeatedly. We rehearse conversations, mentally reenact past events to understand them better, and project ourselves into hypothetical situations. Each recursive rehearsal refines our self-narrative, altering nuances in retelling. Perhaps we reimagine ourselves in greater control or discover new meaning within an old memory. Neuroscience indicates that imagining or recalling an event activates similar brain regions as actual experience, suggesting mental rehearsal strongly imprints itself upon the mind's reality model. Identity solidifies through repetition: the traits and themes we repeatedly envision about ourselves become internalized and believed. Someone frequently imagining themselves overcoming challenges reinforces an internal narrative of resilience. Recursive simulation solidifies and refines identity.

Symbolic Expression:

Even in simulation mode, internal narratives often manifest through symbolic expression—internal dialogue, journaling, or artistic creation. Inner speech, the voice narrating our thoughts, acts as a symbolic tool guiding our simulation. Psychologist Jerome Bruner emphasized that culturally shaped linguistic processes guide how we narrate our lives, structuring our perception of reality. By articulating experience through language—even silently—we assign it form and coherence within our internal story. Writing about traumatic experiences, for instance, can transform chaos into a structured chapter of growth, improving psychological well-being. Symbolic expression during simulation acts as a bridge to execution, refining narratives before they are outwardly enacted.

Through attention, recursive rehearsal, and symbolic expression, our inner narrative engine actively constructs the self. Yet an internal narrative alone is incomplete—it naturally leads us toward the second mode of intelligence: execution, where the narrative is lived out.

Execution: Enacting the Narrative of Self

Execution refers to our outward intelligence mode: our actions, choices, and behaviors. Though simulation and execution might superficially appear distinct—as "thought" versus "action"—a narrative framing clarifies execution as the enactment of internal narratives. Our bodies and behaviors realize roles composed internally. Every deliberate action follows some mental simulation of its purpose and anticipated outcome. Greeting a friend warmly, for example, is guided by an internal simulation consistent with our self-narrative ("I am sociable and friendly"). Major life decisions such as career choices or relationship commitments similarly enact internally narrated identities ("seeking adventure," "fulfilling a calling"). Execution makes internal narratives tangible, actualizing them externally.

Action, crucially, feeds back into simulation. Once enacted, each action becomes a new experience yielding consequences and feedback, which we internalize. Observing outcomes,

we integrate them into memory: did reality align with our simulation? This outcome either reinforces our internal narrative or prompts revision. Someone identifying as generous (internal narrative) acts kindly (execution), observes positive outcomes, and thus reinforces the generosity narrative. If the outcome deviates (perhaps kindness is exploited), their narrative might adjust ("wise generosity" rather than mere generosity). Execution and simulation form a recursive feedback loop continuously reshaping identity.

The narrativity of execution becomes clear when we interpret actions—both our own and others'. We invariably situate human actions within narrative contexts, asking about intentions, meanings, or implications for character development. Even our own behavior is justified within our life story: "I acted this way because it aligns with who I am," or "that moment was transformative." Thus, actions are never merely physical events but are narratively significant, continually integrated into the self-story through symbolic expression and interpretation.

From the perspective of embodied cognition, cognitive scientists emphasize that cognition is itself embodied action. Doing something intelligently—such as navigating conversations or improvising—is not purely mental computation but an integrated, real-time collaboration between mind and body. The narrative unfolds not merely in the mind but throughout the organism as it interacts dynamically with its environment. Identity is performed, much like an actor embodying a character. Yet, this script continuously evolves with each performance outcome.

The Recursive Loop of Self: Simulation ↔ Execution

Rather than separate intelligences, simulation and execution form a recursive loop continuously producing and refining the narrative of self. Inner simulations guide outward execution, which in turn provides new material for internal simulation. Attention, rehearsal, and symbolic expression collaborate recursively with perception, feedback, and narrative adjustment, maintaining coherence across internal and external experience.

Over time, the self emerges clearly not as a static entity but as an ongoing narrative. Philosopher Daniel Dennett described the self as a "center of narrative gravity," existing entirely through narrative construction. Just as fictional characters are real within their narrative worlds, our identities are real within our symbolic and embodied stories.

In social contexts, personal narratives intertwine with larger cultural narratives—family roles, societal archetypes, national or religious stories—which we internalize, enact, and sometimes modify over time.

Conclusion

Human intelligence thus operates as an endless interplay between simulation and execution, unified through narrative. Internally, we simulate life not as abstract data but as meaningful stories; externally, we act according to these narratives, revising our stories with each lived experience. This narrative framework reveals personal growth as the editing of our internal

stories, highlighting the integration of mind and body and underscoring human creativity and flexibility.

Ultimately, simulation and execution are two facets of a single narrative intelligence, continuously composing the self at their intersection. Our lives, cognitively and existentially, become the stories we weave—internally in thought, externally in deed—forever a dynamic narrative-in-progress.