# THE EVOLUTION OF HUMAN MOTIVATIONS

## AN AI-ILLUSTRATED ODYSSEY

JOHN V. WYLIE, MD

Contact through:
whywebecamehuman.com

Produced in the United States of America

Essay originally published in The Montreal Review, July 2023

Edited and illustrated by Chat GPT 4 & DALL-E 3

Formatted by Megan McCullough

Resemblance of images to proprietary material coincidental


Olney, Maryland

# THE EVOLUTION OF HUMAN MOTIVATIONS

## AN AI-ILLUSTRATED ODYSSEY

**John V. Wylie, MD**

We are the children of this beautiful planet that we have lately seen photographed from the moon. We were not delivered into it… but have come forth from it.

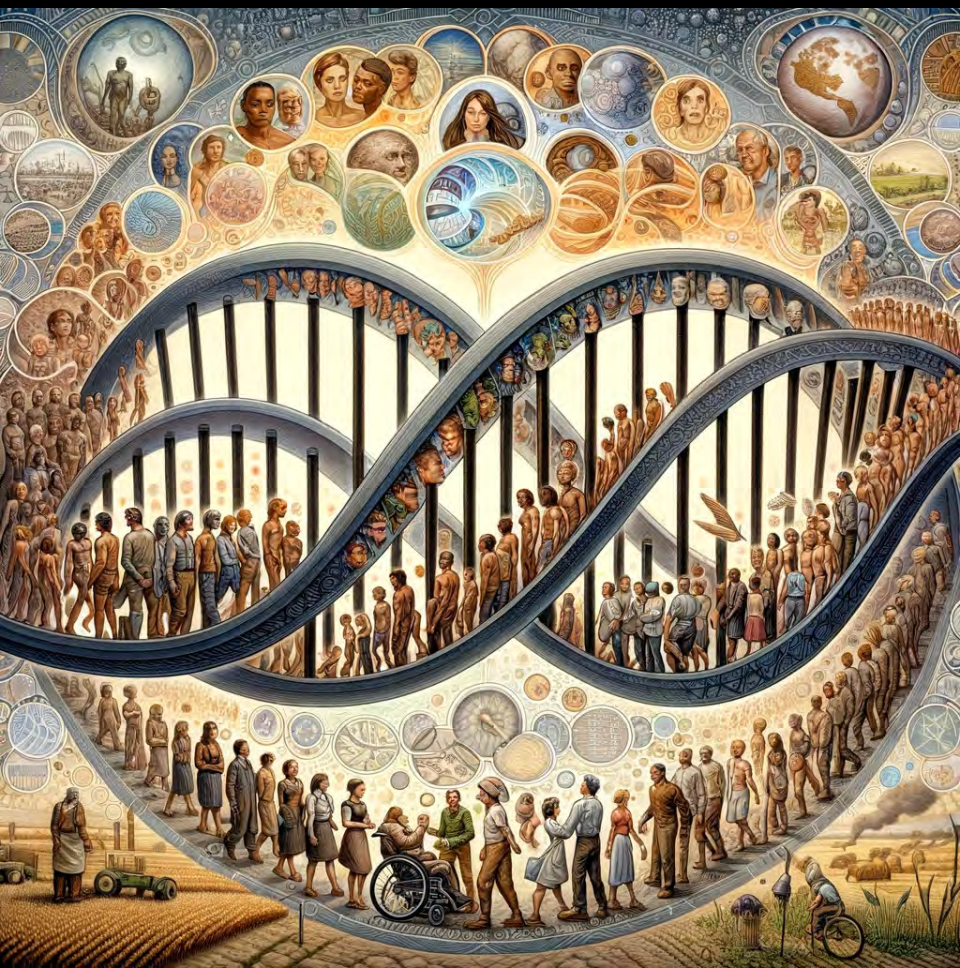
We are its eyes and mind, its seeing and its thinking.

—Joseph Campbell, *Myths to Live By*

For centuries the writ of empiricism [science] has been spreading into the ancient domain of transcendentalist belief, slowly at the start but quickening in the scientific age. The spirits our ancestors knew intimately fled first the rocks and trees and then the distant mountains. Now they are in the stars, where their final extinction is possible . . .

. . . But we cannot live without them. People need a sacred narrative. They must have a sense of larger purpose, in one form or another, however intellectualized. They will refuse to yield to the despair of animal mortality. They will continue to plead, in company with the psalmist, Now Lord, what is my comfort? They will find a way to keep the ancestral spirits alive . . .

We are a single gene pool from which individuals are drawn in each generation and into which they are dissolved the next generation, forever united as a species by heritage and a common future . . .

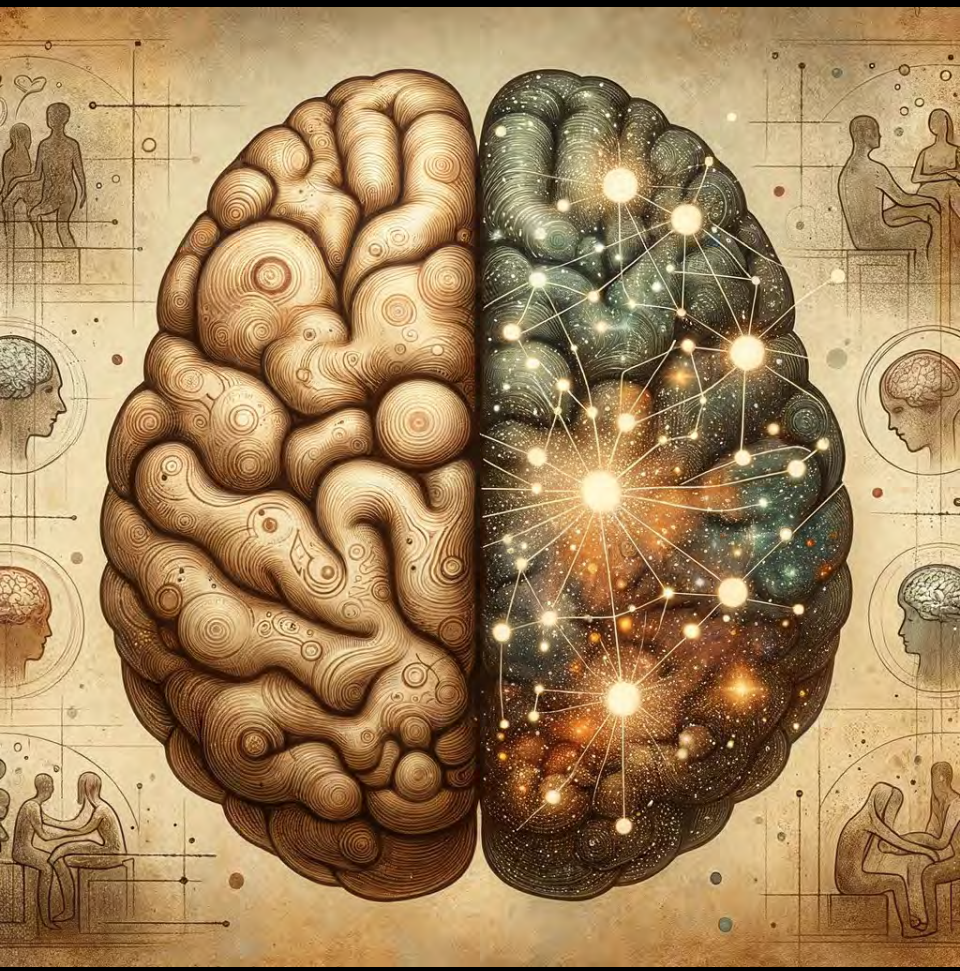


. . . Such are the conceptions, based on fact, from which new intimations of immortality can be drawn and a new mythos evolved. (Edward O. Wilson, 1998)

Embark with me on a journey delving deep into the relationship between severe mental illnesses and the primal emotions fueling our social interactions. These foundational emotional states, raw and instinctual, are the lifeblood of our connections with one another. However, when they malfunction, they can plunge us into the depths of severe mental illness.

*Journey into the evolution of our emotions*

Contrary to popular belief, I suggest that these disorders do not twist or distort our emotions, but amplify them to a piercing intensity. This perspective suggests a profound implication: by studying the heightened symptoms of these illnesses, we can peer into the magnified mirror of our inherent social emotions, unlocking a clearer understanding of our shared human condition.



*Mental illness a magnified mirror of our social emotions*

## Social Emotions: An Evolutionary Journey

Social emotions have evolved to propel specific social functions across different stages of human evolution—from the primate epochs, through the times of our early human ancestors, to the age of *Homo sapiens*. I aim to forge empathetic bridges between the lived experiences of major mental illnesses and the distinct chapters of our social evolution. These connections will serve as guideposts as I weave diverse evolutionary science and theory into a comprehensive, causal narrative of the social emotions animating the human mind.

*Mental illnesses reflect stages of the evolution of our motivations*

The method employed here is not just philosophical, but a basic means of communication found across cultures. Our brains are hardwired for storytelling. Neuroscientists Roger Sperry and Michael Gazzaniga even discovered a part of the brain they called the "interpreter," which makes sense of the world by weaving together different pieces of information into coherent narratives. This kind of thinking is part of our everyday lives as we continuously interpret and make sense of the world around us.

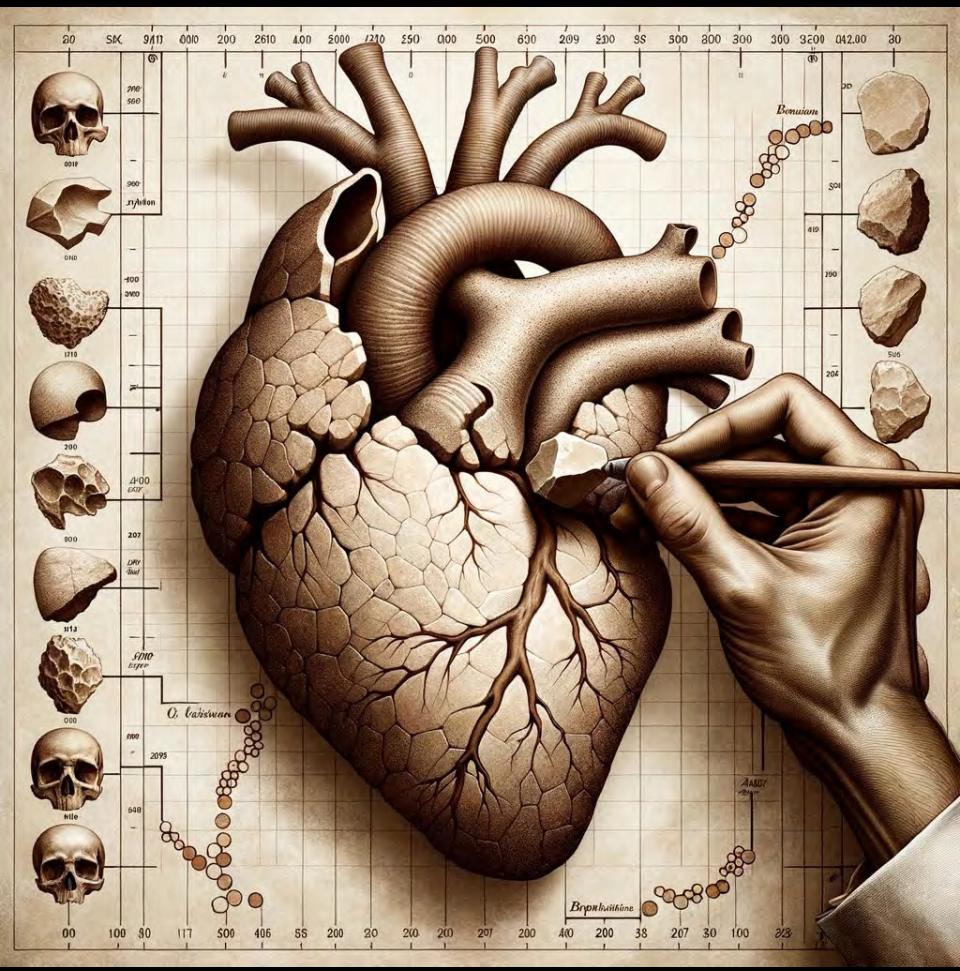
*Our brain's interpreter*

## The Cash Value

Guided by father of American psychology, William James's concept of "cash value," the goal is to illuminate how these ideas can make a tangible difference. This evolutionary narrative may remind you of something—the age-old Abrahamic story of a fall from grace, followed by the promise of redemption. This suggests that perhaps these religious stories are rooted in our evolutionary past. And here's where the cash value of this essay comes into the picture. Long stigmatized, but in this light, mental illnesses transform into beacons illuminating the magnificent journey through the ages undertaken by the feelings we all have for one another.

*"Cash value" of mental illnesses as beacons of collective self-understanding*

In the final sections, the evolutionary lens will add historical context to our current social drives. This is the key revelation: our capacity for virtue is not fleeting by. It is the heart of our humanity, sculpted by the relentless hand of natural selection over millions of years.



*Virtue sculpted by the hand of natural selection*

## Psychiatry's Pragmatic View of Emotions

Within psychiatry, emotion is a vast landscape we continually traverse as it becomes disordered in mental illnesses. To understand how we arrived here, let's take a brief journey back in time. In the 19th Century, the prevailing belief was that mental illnesses resulted from complex brain disorders, which we optimistically anticipated comprehending fully one day. Then emerged the Freudian era, where focus shifted to our emotional experiences and their shaping by our childhood development. Freud viewed emotions not as fleeting responses but as constant drivers of social behavior, a perspective I will reflect using the term "emotions-and-motivations."

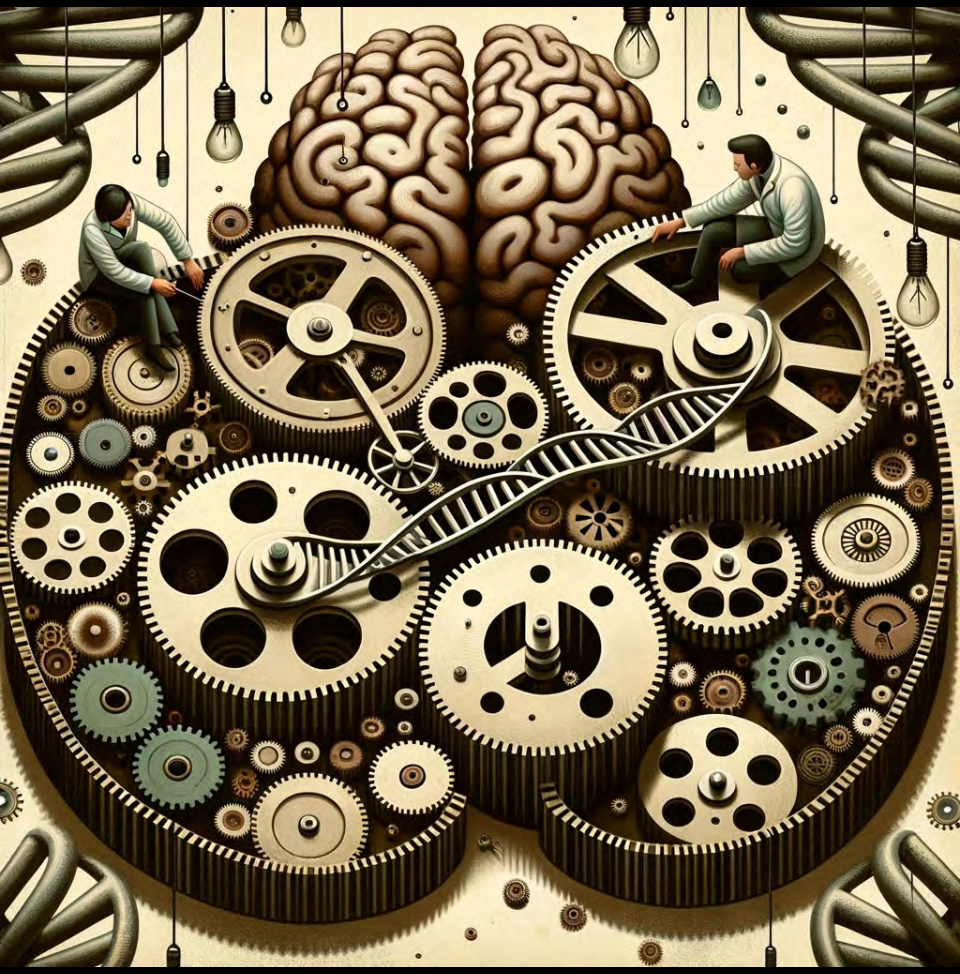
*Mind vs. Brain in mental illness*

In the early stage of my psychiatric career, I witnessed a shift from Freudian psychoanalysis to a biological approach, triggered by the serendipitous discovery of key prototype medications by the mid-80s. Views on mental illness transitioned towards "chemical imbalances" and genetic risks. Yet, despite decades of research into drug-brain interactions, a clear biological explanation for mental illnesses remains elusive.

*Psyche and Soma*

## All in the Genes?

Recent efforts to identify genetic links to mental illnesses have yielded little. A significant multi-center project based at Harvard painstakingly analyzed over a million genomes but failed to unearth any definitive genetic risk factors for any major mental illness. The researchers suggested improved diagnostic techniques might help, presuming mental illness to be largely a brain biology issue.



*Genetics of mental illness*

## Mental Illness: A Feedback Screech

Understanding that severe mental illness fundamentally transpires at the level of our experiences, not just our microbiology, provides a more relatable frame for these conditions. Envision emotions like sounds—they can whisper or roar. Similar to the mechanism whereby an overpowering microphone feedback screech disrupts a tranquil atmosphere, mental illnesses, with their heightened emotional states, disrupt normal thought processes.

*Pathological feedback in mental illness*

## What Sets Major Mental Illnesses Apart

Unlike routine emotional struggles, major mental illnesses exhibit intense emotions that can override thought processes and shape beliefs. This theory posits that such emotions may become trapped in a feedback loop, intensifying excessively, a condition that medication could potentially rebalance. Consequently, mental illnesses can be viewed as amplified versions of our ordinary social emotions. According to evolutionary theory, these emotions have evolved sequentially over time. This lens reframes mental illnesses, not as mere "chemical imbalances" or "faulty genes," but rather profoundly resonate with our shared emotional heritage.

*Amplified versions of ordinary social emotions*

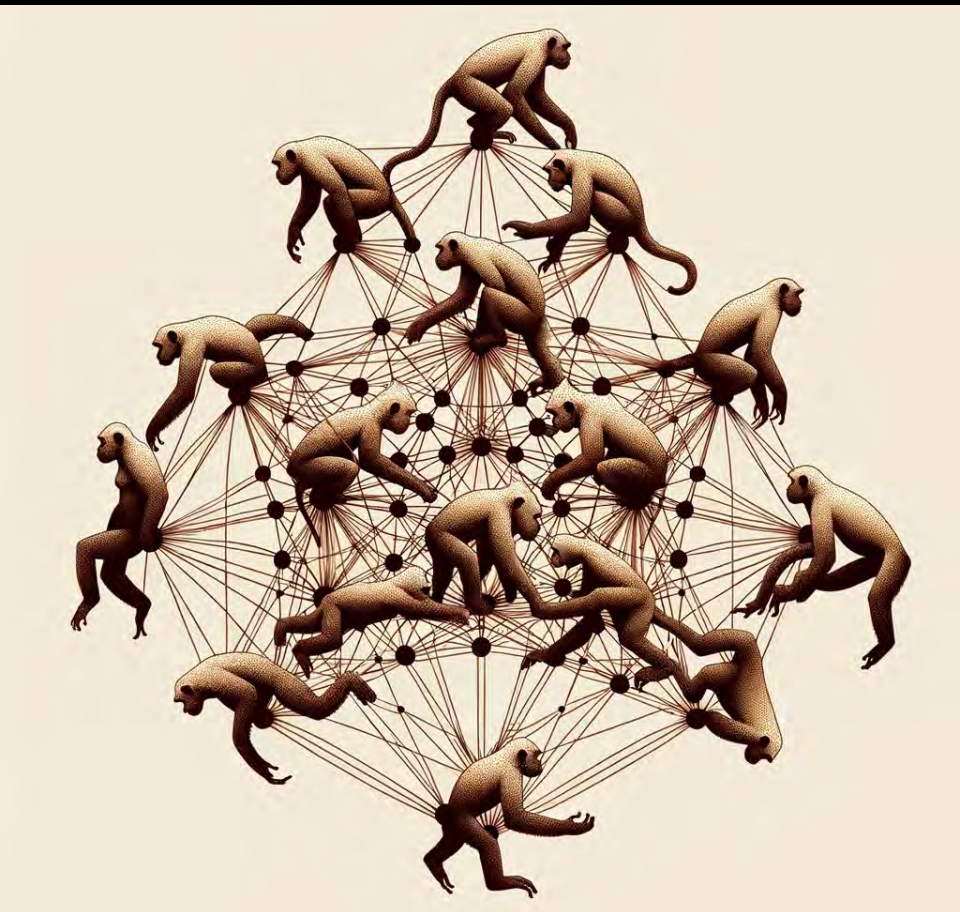
## The Primate Mind: Glimpses from Mental Illness

I propose that psychiatric conditions such as major depression and panic disorder might stem from a damaging emotional feedback loop within our minds. Interestingly, these disorders offer insights into the motivations that unite primate groups, including humans. In other words, the symptoms of these conditions could be considered vivid emotional relics, echoes from the earliest days of social behavior among primates.

*Emotional relics from earliest social behavior among primates*

## Primates: Masters of Social Navigation

Primates excel at navigating the complexities of group living, a capacity that evolved approximately 52 million years ago when our ancestors began to socialize. Their social prowess stems from two social fears that tempered antisocial fight-or-flight instincts and fostered interaction. Imagine four individuals in a strategic dance of alliances and rivalries, based on triangular "two-against-one" strategies—the basic molecule of politics. Through sustained interplay, the tension resolves, with one individual rising to the apex of a social pyramid, cementing bonds with the remaining three through a framework of dominance and submission. Within the broader group, these pyramids proliferate and interlock to form a complex social hierarchy. So, which social emotions enabled primates to moderate their fundamental fight-or-flight instincts and build complex social structures?



*The genesis of hierarchy among primates*

## Primate Fears: Ties that Bind

To adapt to group living, primates evolved two vital social fears: loss of personal bonds and fear of expulsion. These fears played the central role in forging and maintaining group cohesion. Why did nature use fear to motivate social cohesion? When we are well-connected with our group, we feel safe and don't experience these fears. Thus, fear serves as a transient glue that, when effective, turns itself off and allows us to feel at peace within our social circles.

*At peace within our social circles*

Initially, the fear of severing personal bonds encouraged family members to band together for protection against predators, a strategy that bolstered the collective survival of their shared genes. Over time, the benefits of this fear extended to all close relationships.

*Fear of personal separation*

In certain cases, we can observe this fear playing out in what's known as atypical depression, which can commonly be precipitated after losing someone close. Fear of loss can create a vicious cycle, with individuals retreating into relationship memories, amplifying their fear. In extreme cases, people with atypical depression may become convinced that suicide will reunite them with their lost loved one.

*Feedback cycle between separation-fear and memories of lost loved one*

Conversely, with melancholic depression, another severe form of depression, the motivation for suicide arises from a desperate need to escape feelings of entrapment.

## Melancholic Depression: The Fear of Banishment

Melancholic depression exemplifies how symptoms can mirror malfunctioning, deep-rooted emotions. At the heart of melancholia lies a profound fear of social banishment, frequently accompanied by unfounded beliefs of utter ruin or unforgivable transgressions. Interestingly, daily suffering is marked by feelings of entrapment and a preoccupation with escape. A poignant example from decades ago involves an individual suffering from melancholia who, tormented by intense feelings of confinement, dashed across a room, leapt through a window, and plummeted eight floors to his death.

*Feelings of entrapment*

The emotion that malfunctions in melancholia usually propels us towards group cohesion by instilling a deep-seated fear of social banishment. Evolution cleverly adapted the instinctual urge to flee physical confinement, aligning it with the fear of ostracism to promote group unity. Essentially, the primitive impulse to flee confined spaces has been reengineered to be elicited by the abyss of banishment, thus responded to as a fearsome and confining wall—for the benefits of cohering groups.

*The fearsome wall of banishment*

An evocative and insightful portrayal of melancholia is found in William Styron's short memoir, *Darkness Visible* (1990):

> . . . it is not an immediately identifiable pain, like that of a broken limb. It may be more accurate to say that despair, owing to some evil trick played upon the sick brain by the inhabiting psyche, comes to resemble the diabolical discomfort of being imprisoned in a fiercely over-heated room. And because no breeze stirs this cauldron, because there is no escape from this smothering confinement, it is entirely natural that the victim begins to think ceaselessly of oblivion (p. 50).

*"no breeze stirs this cauldron"*

## Panic Disorder: Trapped Between Suffocation and Detachment

Panic disorder often emerges when someone feels trapped in a toxic relationship or unsatisfying job, feeling cornered but hesitant to cut ties. The condition frequently presents with a symptom normally elicited by physical entrapment—an overwhelming sensation of suffocation. In a bid to handle this unbearable state, individuals might desperately seek to create psychological distance, paradoxically leading to an equally frightful state of self-detachment or "depersonalization."

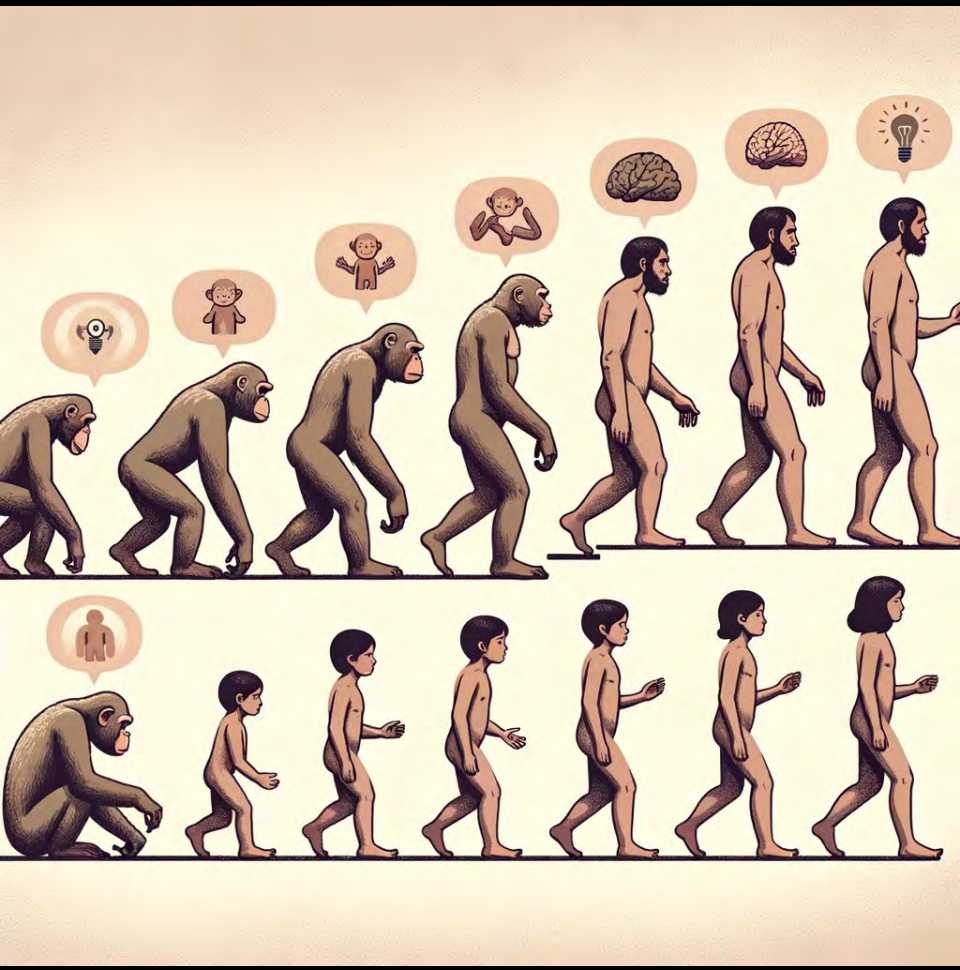
*Trapped and abandoned*

Panic disorder can be conceived as the terrifying cycle of rapid shifts between an intense psychological desire to escape sensations of suffocation and the alienating state of self-detachment. These oscillating states mirror our inherited primate social instincts: one urges us to maintain broader social connections, like an enclosing fence, and the other draws us into close relationships, like a magnet.

*Pushed back and sucked in*

## The Deepest Human Dimension: from apes to humans

The shift from the ape mind to the human mind is the enduring mystery of human evolution. The transformation from the ape mind to the human mind presents an intriguing quandary. Uniquely human traits, such as collaboration, communication, and critical thinking, leave no physical trace. Esteemed developmental psychologist, Michael Tomasello (2019), addresses this challenge by comparing the cognitive processes of apes and developing children, with a view to identifying the distinctively human components of our nature.



*Minds of apes vs. the minds of children*

Tomasello proposes that "collective intentionality"—a shared intent in communication—is a trait exclusive to humans, not apes. He suggests that this characteristic has genetic origins and isn't merely a cultural offshoot. His theory draws on child development studies from various cultures, emphasizing two major milestones. Around nine months of age, infants begin to display "shared intentionality"—a parent might point out a beautiful bird, and the infant is capable of engaging with this shared focus. By roughly three years of age, children start to express collective intentionality, voicing group norms and expectations, as in, "This is the correct way we do it."

*From sharing to the right way to do it*

Tomasello postulates that the aptitude for collective intentionality, essentially a shared purpose or authority, emerged due to its role in facilitating efficient collaborative foraging. This perspective implies that teamwork is the defining adaptation of humanity. He compares this evolution in our group behavior capacity to a key biological event—the "Cambrian Explosion"—when single-celled organisms evolved into complex multicellular life forms around 500 million years ago. This essay supports Tomasello's claim that the transition from apes to humans was marked by a shift from individual to collective intentionality.

*Transition from the individual to collective functioning*

## Unraveling the Jump from Cooperation to Coordination

As individual cells came together to form complex multicellular organisms, individual apes similarly evolved into harmonious groups of early humans. Essential to this evolution is the distinction between cooperation—a mutual "win-win" situation—and coordination, a harmonious division of labor that solidly binds the group, signifying that everyone's fortunes rise and fall together.

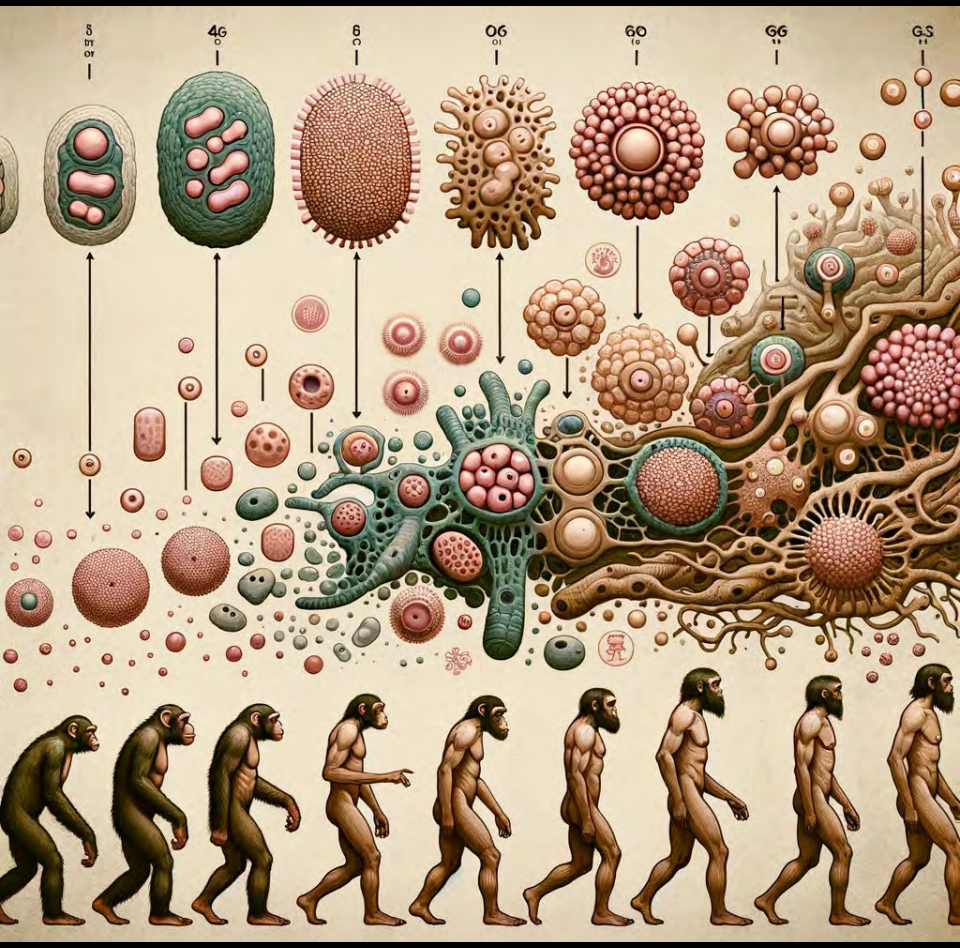
*Harmonious division of labor*

This critical shift occurred in our evolutionary trajectory when the benefits of individual actions were overtaken by those of coordinated group behavior. Upon crossing this threshold, the productivity of teamwork took a quantum leap. The benefits to individuals, even cunning predators, were soon surpassed by advantages from strengthened inter-individual relationships. This process, where the advantages to relationships trump personal gains, is referred to as "Relational Selection."

*Individual vs. collective functioning*

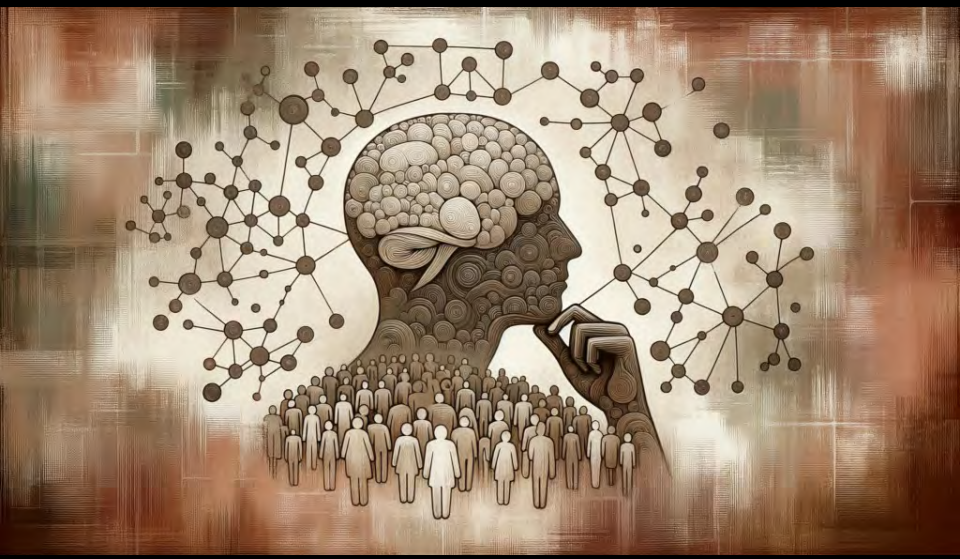
## The Evolution of Communication: From Cell Signaling to Human Language

Around half a billion years ago, the transition from solitary cells to coordinated multicellular organisms shifted the focus of natural selection from individual cells to their intercellular communication, leading to complex nervous systems. Mirroring this progression, natural selection in our own human lineage expanded its focus from individual apes to the communication systems within early human communities. This evolution of foundational forms of communication crafted our rich environment of human language, chosen specifically for its crucial role in facilitating collective coordination and action. This dialogue, continuously establishing shared norms and expectations, marks our collective evolutionary journey towards refined group coordination—the hallmark of our shared human lineage and the essence of our human nature.



*Inside the environment of human language*

Tomasello argues that collective intentionality, which can be understood as group decision-making, is mostly influenced by cognitive empathy—a concept also known as Theory of Mind. This refers to our ability to understand and predict the thoughts of others, essentially a form of mental perspective-taking. However, this book suggests a need to shift our focus. Instead of concentrating solely on the cognitive capacities of individuals for social cooperation, we should also consider the broader, more encompassing role of the emergence of our collective intentionality to shape our understanding of the human mind.



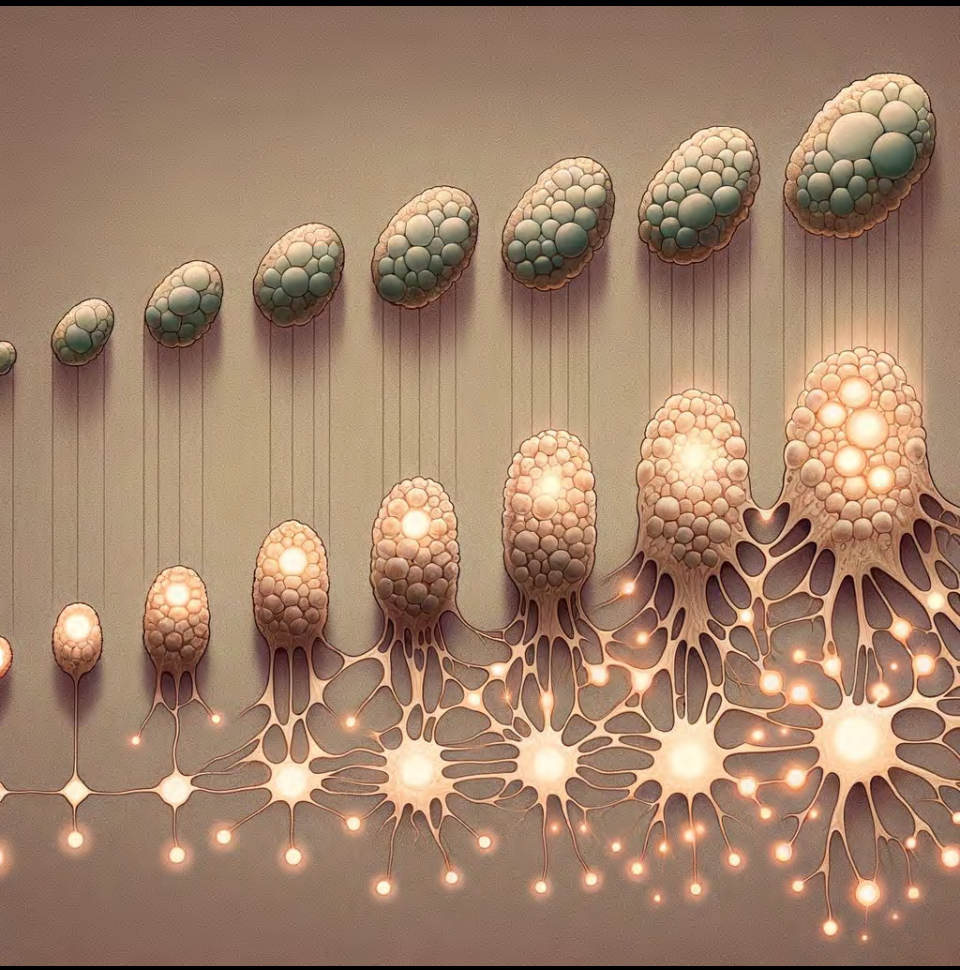
*Cognitive perspective-taking or emergent collective willfulness*

## Natural Selection and the Emergence of Minds

What lies at the very heart of the mind. Consider life's building blocks—simple elements called amino acids—slowly acquiring the ability to make copies of themselves. This key feature is the spark that kindles life. Over time, small changes happen. Some of these changes turn out to be helpful, making it easier for those particular life forms to survive and create more copies of themselves. This process gradually instills the life forms with a core instinct to survive. It's like the first heartbeat of a mind. So, we can think of the mind as the will to survive that arises in the wake of natural selection.

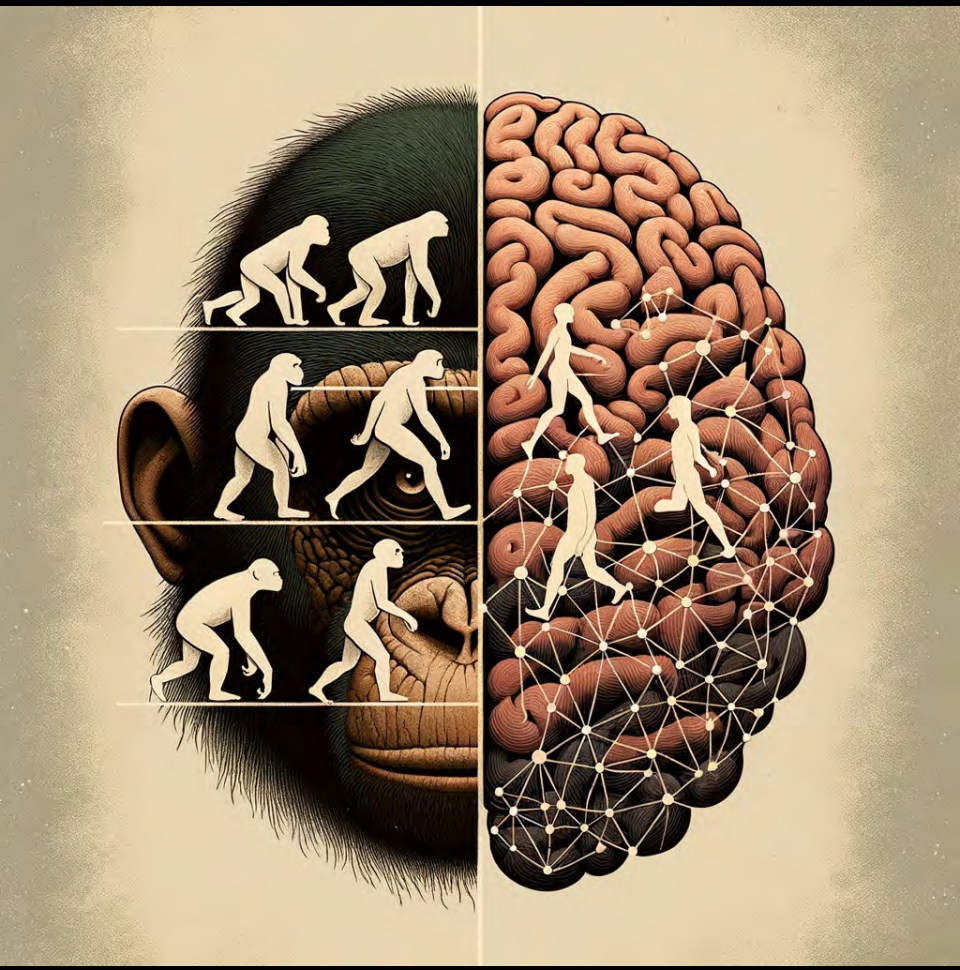
*The first heartbeat of a mind*

Let's now imagine the journey from single, independent cells to complex, interconnected networks of cells. During this transition, the fundamental drive for survival also evolved. It transcended the confines of individual cells, finding a new home within the relationships cells established with each other. This shift marked the birth of a more advanced form of "mind," a collective survival instinct intertwined within the complex network of cellular connections, which gradually transformed into the neurological systems to coordinate the behavior of animals.



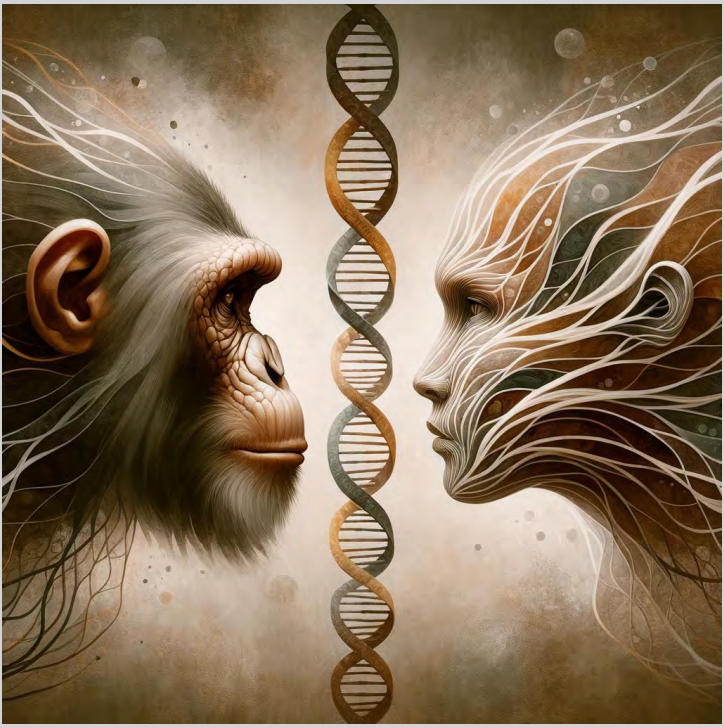
*Willfulness shifted from individual cells to the signaling among cells*

Further down the evolutionary path, our ape ancestors evolved into humans with shared goals. At this stage, our survival instinct began another transformation as it expanded its focus beyond individual survival to strengthen bonds within early human groups. This shift sparked the emergence of a still more advanced form of human mind with the destiny to transform our legacy of aggression into an intricate web of communion and coordinated behavior.



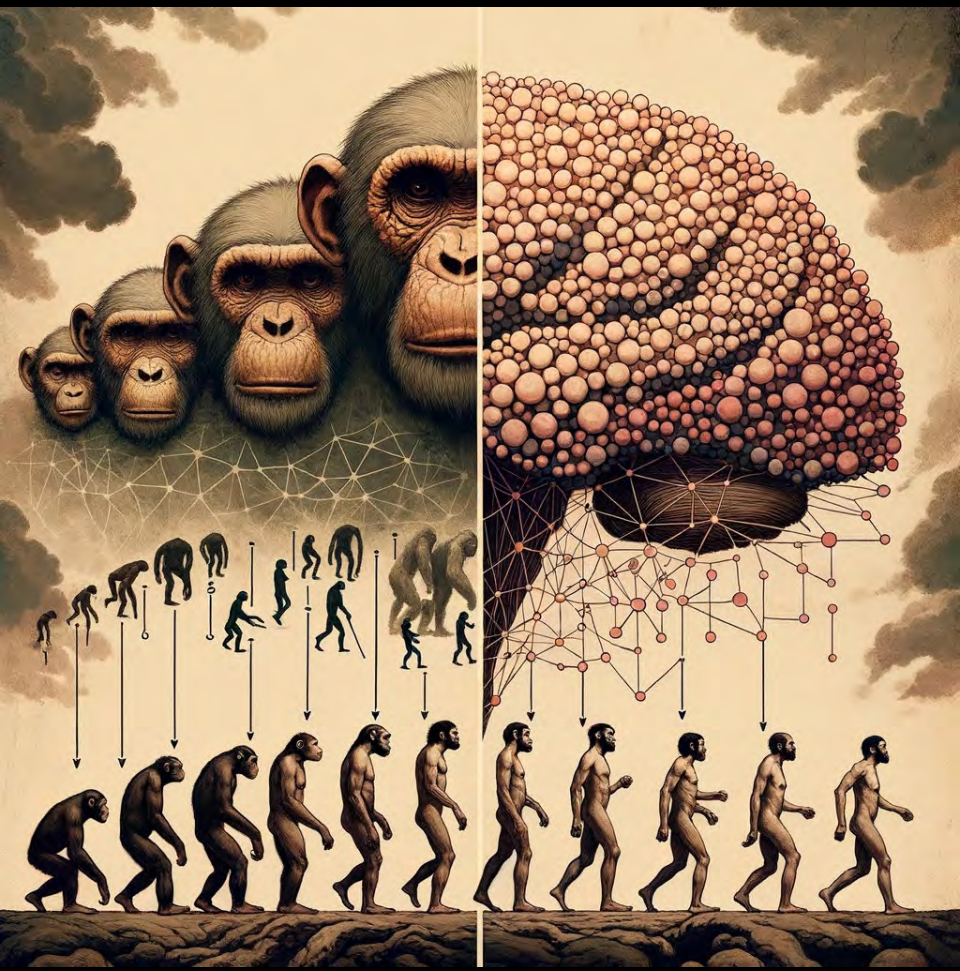
*Legacy of aggression transformed into an intricate web of communion*

In traditional taxonomic schemes, humans were distinguished from apes sufficiently to merit their own family designation, the hominids. Nevertheless, later genetic research has revealed a striking similarity between modern humans and Great Apes. This led biologists to classify humans alongside Great Apes at the family level, effectively demoting humans by two taxonomic ranks and aligning us with hominins, a tribe comparable to those of chimpanzees and gorillas. However, this essay posits that the evolution of humans signifies a substantial biological shift, one deserving enough to restore our status as a distinct hominid family.



## The Early Human Mind (6 to 2.5 Million Years Ago): Deciphering the Clues

Three key pieces of evidence illuminate the early evolution of humans (hominins). They suggest that these pioneering species began evolving into a unique social structure—a collective entity with increasing communication abilities that promoted teamwork and shared responsibilities. In short, the ecology of our collective mind shaped human evolution. Amid a severe decline in ape populations, the growing need for teamwork advantages led to a transformation. The focus moved from individual dominance to the productivity of collective authority, made possible by certain evolutionary changes.



*Shaped by the ecology of our collective mind*

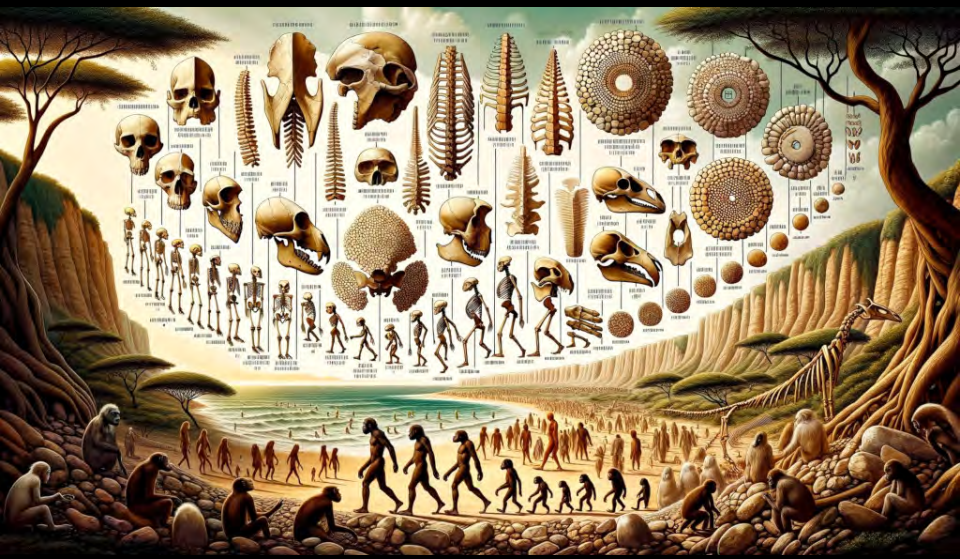
**Bipedalism:** The defining human characteristic of standing and moving upright. It's not only one of the earliest traits we see in humans but also a trait that brings with it significant physical challenges, such as lower back, knee, and hip problems. Therefore, bipedalism must have offered substantial advantages right from the beginning to counterbalance these challenges, with one likely benefit being the enhanced ability to use our faces and upper bodies for continuous communication—necessary for sustaining constant team interactions.

*Continuous-and-simultaneous communication*

**Large Molars:** Early humans developed large back teeth for consuming tough grasses and hard nuts. While theories abound as to why early humans evolved to consume these abundant but less nutrient-dense foods, it's plausible that doing so helped avoid competition over high-value foods like meat, thereby promoting our fundamental trait of teamwork.

*Grinding abundant nuts and grasses to avoid competition*

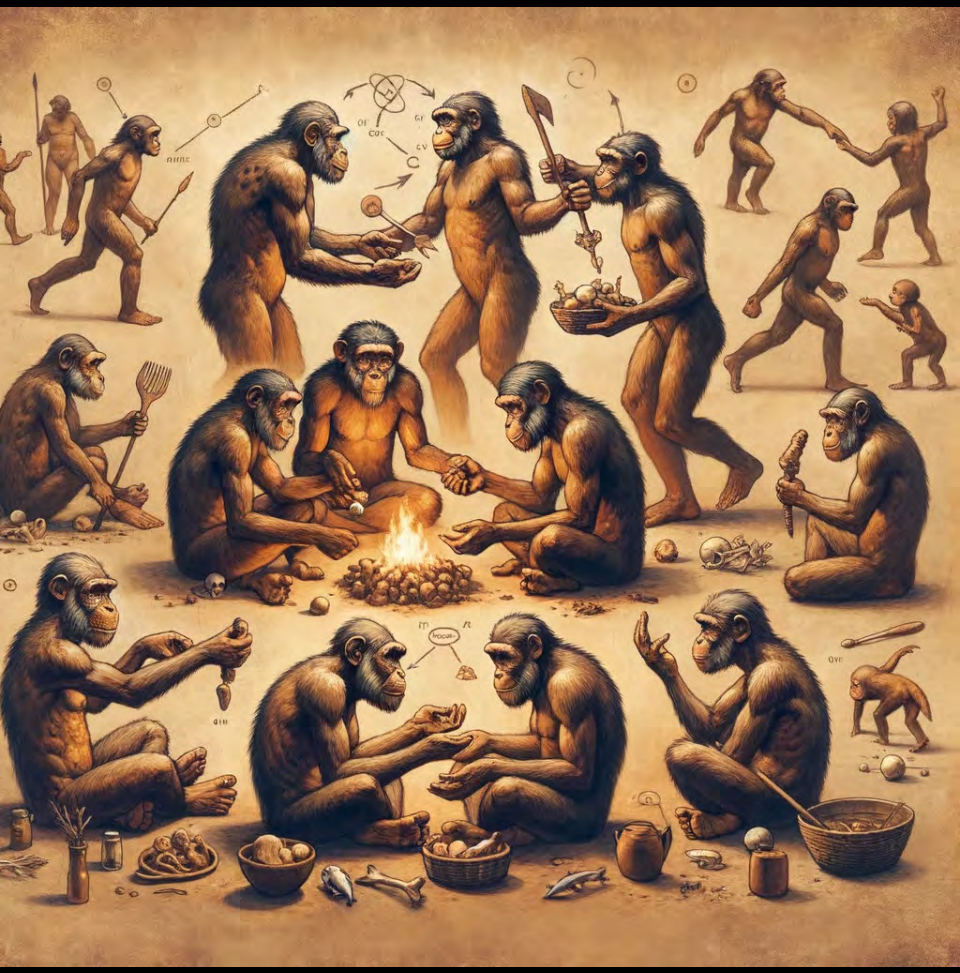
**Mosaic Evolution:** Fossil records indicate a "mosaic evolution" in early humans' post-cranial skeletons, with body parts such as feet, ribcage, spine, hands, and shoulders evolving at different rates. This staggered evolution is observed across species from distinct paleo-climates in Africa, nonetheless all seemed to be heading in the direction of modern human traits. While sporadic interbreeding between species is one theory explaining this convergence, I propose that a shared social environment nurturing traits that foster teamwork could have provided an adaptive advantage in any physical environment.



*Teamwork is advantageous in any climate*

## Leveraging Social Fears for Teamwork and Understanding OCD

As described, two basic fears are universal in all human societies—fear of losing interpersonal relationships and fear of banishment from groups. These fears, essential for maintaining unity in primate groups, were strengthened and their function extended in humans to ensure adherence to performance norms and ethical guidelines crucial for effective teamwork.



*Enhanced primate fears foster teamwork skills and morality*

This adaptation can be observed in the symptoms of obsessive-compulsive disorder (OCD), which is characterized by repeated actions and persistent thoughts. People with OCD often struggle with intense worry about incorrectly executing tasks or morally deficient actions and thoughts. This fear drives them to constantly review and redo their actions or rethink their thoughts, trapping them in an unending cycle.

*OCD: driven by fear of violating social norms*

Deeper social emotions tied to morality, going beyond just task completion, enable effective participation in close-knit teamwork. I suggest that our moral compass stems from our evolutionary development of shared motivations to strive for justice.

## From Dominance to Justice: The *Homo* Species (2.5 Million to 300,000 years ago)

The species in our own *Homo* genus evolved into proficient team hunters—a transition made possible by maintaining and refining innate responses towards fairness. The dominance-submission power struggle seen in apes evolved into a nuanced human dynamic—a symbiotic partnership between indignation at unfairness and guilt from wrongful actions—collectively suppressing individual dominance.

*From individual dominance to the authority of justice*

## Justice: The Unseen Pillar of Human Teamwork

In certain contemporary hunter-gatherer societies, the evident principle of equality serves as a check against dominance. Such displays of justice are visible across diverse groups. There has been significant discourse around the evolution of justice and equality within the confines of game theory, which explores the dynamics of competitive interactions among self-interested individuals vying for scarce resources. It might be helpful, though, to momentarily deviate from this intricate theoretical discourse and seek a simpler, more direct understanding of the available evidence.

*How did justice evolve?*

The prominent Scottish economist and philosopher, Adam Smith, illuminated key insights in his groundbreaking publication, *The Wealth of Nations* (1776). He argued that societal wealth derives from a division of labor and self-interest, with the latter channeled into beneficial actions by an "invisible hand." However, in his prior work, *The Theory of Moral Sentiments* (1759), Smith underscored the absolute necessity of justice:

> Justice, on the contrary, is the main pillar that upholds the whole edifice. If it is removed, the great, the immense fabric of human society . . . must in a moment crumble into atoms. In order to enforce the observation of justice, therefore, Nature has implanted in the human breast that consciousness of ill-desert, those terrors of merited punishment which attend upon its violation, as the great safe-guards of the association of mankind, to protect the weak, to curb the violent, and to chastise the guilty (p. 148).


*Adam Smith: Without sentiments for justice, society would "crumble into atoms"*

## Smith's Vision through an Evolutionary Prism

Viewing Smith's insight through the lens of evolution, justice emerges as a fundamental quality for effective social interaction, appearing as a collective instinct honed over time to maximize the benefits of coordinating group behavior. Our triumph as a species isn't attributable to individual aptitude, but to our inherited aptitude for complex teamwork. Our deeply entrenched justice instincts, naturally selected across epochs, have empowered our unique human social system to thrive.


*The deep roots of justice enable collective function to thrive*

## Understanding Collective Intent: The Story of the Acheulean Handaxe

An intriguing testament to our *Homo* ancestors' collective intentionality lies in their toolmaking prowess. Take, for instance, the Acheulean handaxe. This tool, simple yet effective, emerged with our *Homo* genus and remarkably remained largely unaltered in design across continents for about 1.5 million years. This period coincided with significant human brain expansion, hinting at the growth of our collective consciousness.

*Acheulean Handaxe*

## The Handaxe Enigma: Cultural Stability Across Ages

Crafting these handaxes required genetic adaptations like manual dexterity, opposable thumb, and enhanced hand-eye coordination. However, the distinctive technique for creating these tools, as well as their specific form, must have been perpetuated through culture and learning. This raises a fascinating question. Typically, as cultural practices spread through imitation, they evolve rapidly, accumulating random changes. Darwin grappled with how dynamic change could take place within seemingly static species. However, the handaxe puzzle flips this on its head: how could a cultural tradition, usually quick to evolve, remain so stubbornly stable over vast stretches of time?

*Why no change over time?*

In *Fairweather Eden* (1998), Michael Pitts and Mark Roberts studied stone chips from Boxgrove, England, thought to be remnants of toolmaking activities from half a million years ago. They identified these chips as fragments discarded during the creation of handaxes. From a meticulous analysis of the chip clusters' relative positions, Pitts and Roberts deduced that a small group of early hominins had gathered around a deceased horse, simultaneously forging their tools to butcher the animal.

*Parallel collective tool-making*

In the Pleistocene epoch, characterized by extreme climate shifts and widespread human migration, early *Homo* societies refined their social frameworks. Collective authority and shared tasks intensified, further shaping societies that had long since moved beyond the dominance of individual members. Natural selection increasingly favored the productive collaboration of relationships over mere individual strength. In this context, interactions among migrating groups became more frequent and harmonious. The communal creation of handaxes, with their optimal teardrop design, not only served as a communal bonding ritual of parallel group labor, but also as the continual recreation of a powerful symbol of collective unity and cohesion among all human groups.

*Migration due to climate fluctuations during the Pleistocene*

In my imagination, I can place myself into the experience of our ancestral species knapping essentially the same Acheulean hand ax for an astonishing 1.5 million years:

*Crouching in a circle, we are all glancing back and forth, not merely imitating one another's work, but watching for strokes made with the authority of how it should be and always had been done. We all instinctively know the familiar rectitude of wisdom flashing alternatively among us, making small adjustments with constant mutual recognition until general specifications are satisfied: the precise technique of striking, the proper size and shape.*

Whether it be from one day, week, or century on into the next, the memory of what to do and when to do it was not stored in any individual brain. Rather, this knowledge was mixed into and among a given group—and all groups—in bits and pieces, which, when the moment arose, fell together in collective animation. Diffusing through time and space and linked by long repeating chains of unbroken mutual experience, this hallowed ritual, the emblem of a sacred tribe, scattered far and wide out into their diaspora from Africa out and across the expanse of Eurasia. Although individuals drifted from one group to another, small bands dissolved, and new ones reconstituted, these diurnal chains of communal functioning wove an unbroken fabric for 50 thousand generations across the expanse of entire continents.

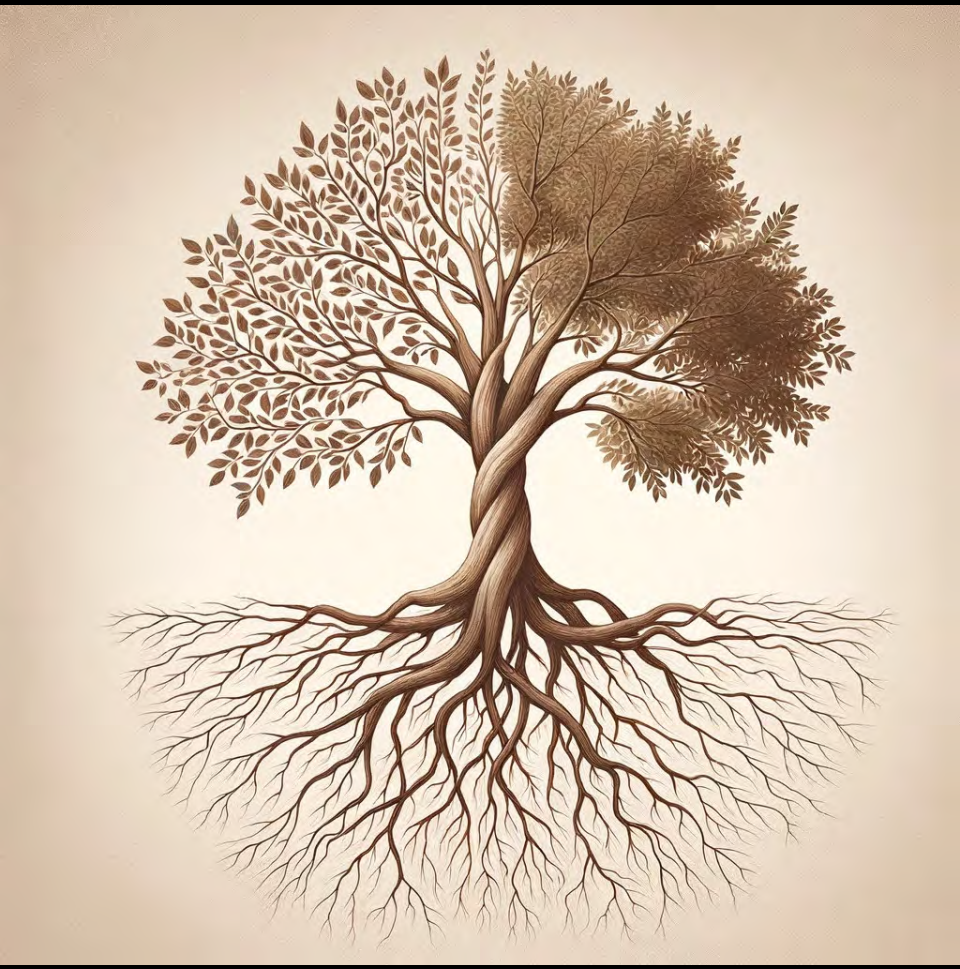
*An unbroken fabric for 50-thousand generations across entire continents*

## Monogamy, Teamwork, and Brain Development: An Evolutionary Sequence

Monogamy, the exclusive pairing of one male with one female, is significantly observed in bird species (85-95%), but rare in mammals (3-5%) and around 15% of primates. The shift towards monogamous social structures began approximately 16 million years ago among certain primate species, marking a departure from less constrained mating arrangements.

*Monogamy in nature*

Bernard Chapais (2013), in his seminal work on human social structures, posits that monogamy had a fundamental role in our evolution from apes to humans. He argues that the deep social connections between family groups and their associated in-law families, present in all contemporary human societies, are unique among primates. These group affiliations, he suggests, are rooted in monogamy, which he describes as a cornerstone of human uniqueness. In essence, our transition to monogamous relationships cultivated complex family structures with firm intergroup bonds, crucial in our evolution as a species. While modern humans don't adhere strictly to monogamy, it's plausible that a shift from promiscuity towards monogamy could have ignited the beginnings of collective behavior in our early hominin ancestors.



*Monogamy produces in-law family bonding*

Research reveals that among insects like ants and bees, exhibiting sophisticated collective behavior ("eusocial"), the rise of monogamy aligned with the onset of their collective functioning (Hughes, et al., 2008). This parallel between humans and these insects hints at a potential pattern in the evolution of advanced collective behavior.

*Founding species of eusocial insects were monogamous*

The evolution of advanced collective behavior in bees, demonstrated by their decision-making process, provides insightful lessons that can be applied to human organizations. Bee expert Thomas Seeley outlines five such lessons he applies in running his department at Cornell (Seeley, 2010):

1. Assemble a decision-making group of individuals with mutual interests and respect.

2. Limit the leader's influence on the collective's thought process.

3. Encourage diverse solutions to the problem at hand.

4. Accumulate the group's knowledge through constructive debate.

5. Utilize quorum responses [instead of consensus] to enhance cohesion, accuracy, and speed.

## The Collective Colonization of the Human Brain

A notable correlation exists across the animal kingdom between monogamy and increased brain size. This relationship is attributed to the complex behaviors associated with monogamy, such as coordinated childcare, which demand more brain power than navigating a hierarchy (Dunbar & Shultz, 2007). As male competition for mates diminished over time, cooperative practices like shared "alloparenting" increased among our early hominin ancestors, as noted by Sarah Hrdy (2011). Initiated in the early hominin era and coming to full fruition in the *Homo* epoch, these shifts influenced all social interactions to reap the productive benefits of monogamous bonds more widely. Consequently, the necessity to coordinate survival strategies within groups spurred a notable brain expansion during the *Homo* era. Fundamentally, the frontal lobe, where most expansion occurred, was "colonized" by collective intentionality. This marked the bulk of our ancestors' evolution towards more complex collective abilities.

*The collective colonization of the human brain*

Over six million years leading to *Homo sapiens*' emergence, evolution's driving force wasn't brute strength or individual prowess, but collective coordination and shared understanding's evolving grace. This radiant journey was not merely external, but intimately entwined within the minds of our ancestors, and echoed in the ongoing evolution of language—the neurological system that served as the nexus of our socially woven existence. Our ancestors, as collective custodians of wisdom and experience, engaged in persistent mental dialogue, collectively interpreting their surrounding world. In this Eden of collective cognition and dialogue, they traversed their journey through epochs, setting the foundation of humanity's trajectory. This was our ancestral state of grace before the approaching whisper of a fall.

*Humanity's Eden of collective living*

## The Role of Attraction in Social Evolution: *Homo sapiens* (From 300,000 Years Ago to the Present)

In his groundbreaking work, *The Descent of Man, and Selection in Relation to Sex* (1871), Charles Darwin proposed that attractiveness-enhancing traits, not just survival traits, significantly impacted human evolution. He used the peacock's majestic tail as a primary example, explaining that its primary function isn't survival but to captivate peahens—an illustration of sexual selection. Such displays, intended to attract potential mates and not directly related to survival, are common across the animal kingdom. Birds showcasing vibrant plumage or singing melodic tunes, insects producing distinctive chirps—all are means of announcing, "I'm here! ... Are you nearby?"


*Darwin's theory of sexual selection*

Cave art is often seen as a testament to a monumental advancement in cognitive capacity for symbolic representation. However, this viewpoint overlooks a simpler, more social origin. Consider the scenario of someone discovering a beautiful shell, threading a reed through it, and wearing it as an adornment. Without any substantial cognitive leap, they have created a symbol––a simple act driven by the desire for social display.

Yale ornithologist Richard Prum, in *The Evolution of Beauty* (2017), builds on Darwin's controversial idea, arguing that sexual selection played a crucial role in *Homo sapiens*' evolution. Science need not prove that physical appeal and desirable behaviors often influence our mate selection. Here are some examples illustrating how sexual selection has significantly influenced human evolution:

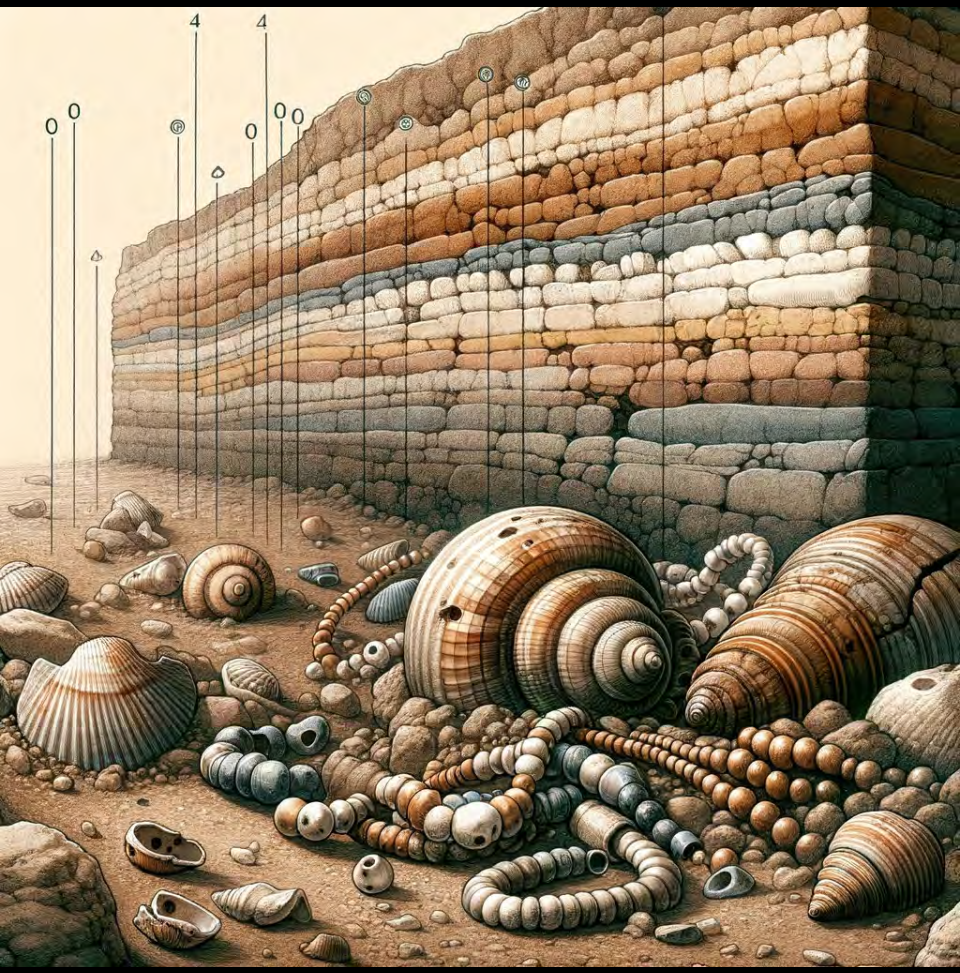
1. Compared to preceding human species, our species exhibits a more youthful, appealing appearance, as indicated by fossil records. We have slender bodies, and our skulls resemble those of juveniles from earlier human species.

*Juvenile ancient hominin skull and adult Homo sapiens skull*

2. Sexual selection may explain physical traits like non-lactating women having round breasts and engaging in activities like artistic endeavors.

*Rounded breasts when not lactating and decorative artwork*

3. Artifacts such as pierced shells and beads, likely used as adornments, have been unearthed, dating back 100,000 years, along with stone tools.



*Pierced shells and beads worn as jewelry*

4. Our fascination with gold is due to its malleability and lasting luster, perfect qualities for jewelry.

*Value of gold based on vanity*

5. Social media's prevalence is more about our desire to display our attractive lives—our food, pets, family, creativity—than to share practical information.

*Social media based on vanity*

## From Desire in Sexual Selection to Desire in Social Selection

What sparked this unique form of co-evolution in *Homo sapiens*, where a trait's appeal and attraction to it mutually influence each other? Sexual selection in our species isn't dependent on individual dominance, as seen in primate hierarchies, or the shared pursuit of fairness fundamental to teamwork. Rather, it's fueled by a person's aspiration to be admired by others.

*Social selection for the desire to be liked*

Vanity and narcissism, often framed as problematic or destructive tendencies in biblical parables and traditional Freudian psychoanalysis, play a key role in this process. The self-psychology movement, which emerged in the 1970s (Kohut, 1971), proposed a joy-oriented "self-system" distinct from the anxiety-driven "ego system." This self-system, initially kindled by the pleasure experienced from caregiver attention and approval in infancy, matures alongside the child, promoting a natural inclination to derive pleasure through social validation and countering the fear-induced restraints of the superego.


*Ego-system vs. self-system*

This perspective casts vanity not as a vice, but as a fundamental prosocial motivating force, a concept even acknowledged by Adam Smith in *The Theory of Moral Sentiments* (1759):

> From whence, then, arises that emulation which runs through all the different ranks of men, and what are the advantages which we propose by that great purpose of human life which we call bettering our condition? To be observed, to be attended to, to be taken notice of with sympathy, complacency, and approbation, are all the advantages which we can propose to derive from it. It is the vanity, not the ease, or the pleasure, which interests us (pp. 109–110).

*It is the vanity, not the ease or pleasure, which interests us*

Understanding vanity as a yearning for social validation, we can comprehend the evolution of sexual selection in *Homo sapiens* better. This process has broadened beyond the individual rewards of sexual desire to become what might be called "Social Selection." Social exhibition, characterized by elements of vanity or narcissism, extends beyond its primal function in courtship, playing a key role in all social relationships.

*Selection for social display distinguishes Homo sapiens*

This transition occurred as the individual rewards of sexual desire were surpassed and augmented by the collective benefits of social desire, which served to unify populations. Thus, our perpetual reciprocal allure, powered by our yearning for one another, has been favored by nature, cultivating extensive interwoven communities through its exceptional capacity for fostering social interaction.

*Social display selected for the benefits of social intercourse*

Emerging research employing ancient DNA techniques hints that Neanderthals, unlike our species, tended towards inbreeding and maintained static social structures. The genetic material of a Neanderthal woman shows traces of close-relative mating, a pattern mirrored in the genetic information from thirteen other Neanderthal individuals (Prüfer et al., 2017; Skov et al., 2022).

*Ancient DNA shows Neandertals inbred compared to contemporaneous Homo sapiens*

Contrasting sharply with this, the genomes of *Homo sapiens* from 34,000 years ago demonstrate low levels of interrelatedness within living groups, implying a more expansive mating network akin to the structure observed in present-day hunter-gatherer societies (Sikora et al., 2017). Additionally, another examination of ancient genomes uncovers geographically widespread mating, mobility, and population blending across Africa 50,000 years ago, with hints of population structuring emerging around 20,000 years ago (Lipson et al., 2022).

*Continent-wide social mixing 50,000 years ago*

## The Pooling of Collective Knowledge

The key strength of large, interconnected communities is their capacity to amass and preserve a vast reservoir of knowledge. This accumulated wisdom accelerates cultural evolution, fostering innovation in tools, survival strategies, and dwellings. This collective knowledge is not static; it's dynamically shared and enriched within the community, fostering an evolving understanding. Anthropologist Robert Boyd encapsulates this idea, positing that "perhaps our intricate culture doesn't emanate from solitary cogitation, but from the communal knowledge we amass collectively in groups" (Culotta, 2010). Additionally, this process sets in motion a cascade of cultural evolution influencing the development of our economic, political, and artistic pursuits, all driven by the quest for social recognition through a diverse range of public displays.

*The evolution of collective knowledge*

The intense rise of cultural evolution began around 40,000 years ago, aligning with the era of cave art. However, advancements in stone tool fabrication that exceeded the capabilities demonstrated in the Acheulean handaxe, are linked to the earliest *Homo sapiens* fossils (Richter et al., 2017). This cultural selection of knowledge, beauty—and of truth—heralds a remarkable triumph for our species. Perhaps, it's one of the most pivotal milestones in the chronicle of life.

*The evolution of knowledge and beauty*

Even in our intricate, modern society, we find resonance in the ancient wisdom of Ecclesiastes 2:11: "Then I looked on all the works that my hands had wrought, and on the labour that I had laboured to do: and, behold, all was vanity and vexation of spirit . . ." This human quest for recognition, much like a peacock showing off its vibrant tail, has been the key motivator in forming our shared culture and fueling our economies, as noted by Adam Smith. Yet, this drive has a double edge. When it evolves into a fierce competition, problems arise. Our yearning for recognition has directed its own evolution. Ironically, while this drive projects our communal power into a new realm, it also suggests potential pitfalls and future challenges.

*Potential pitfalls and future challenges*

## An Evolutionary Glimpse at Emotional Intensity: A Double-Edged Sword

Freud characterized social emotions as persistent motivational states. Viewed evolutionarily, these emotions seem favored by natural selection due to the sustained benefits of their prolonged intensity. Simultaneously, co-evolving control mechanisms at the neurobiological level have modulated this intensity. However, at the statistical fringes of populations, these regulatory systems may falter under severe emotional duress. Consequently, social emotions, left unchecked, could spiral into mental disorders via runaway self-reinforcing feedback loops, akin to processes observed in diseases such as cancer.

*Runaway self-reinforcing feedback loops*

Consider the manic phase of bipolar disorder—a manifestation of the powerful emotions and impulses that drive our species' "new mind." Pathological mania might be viewed as a "cost of doing business"—an unforeseen side effect of our cultural and economic advantages. Similarly, disorders such as major depression and panic disorder might be seen as trade-offs for the security inherent in communal living. Meanwhile, the emergence of obsessive-compulsive disorder could be interpreted as a byproduct of our capacity for collective functioning.

*Mania: the cost of the economic and cultural benefits of vanity*

During a manic episode, pleasure—which usually fuels our quest for social approval—surges wildly, sparking a whirlwind of hyperactive, euphoric actions. Individuals caught in this manic state become both enchanting performers and their own captive audience, caught in a destructive feedback loop.

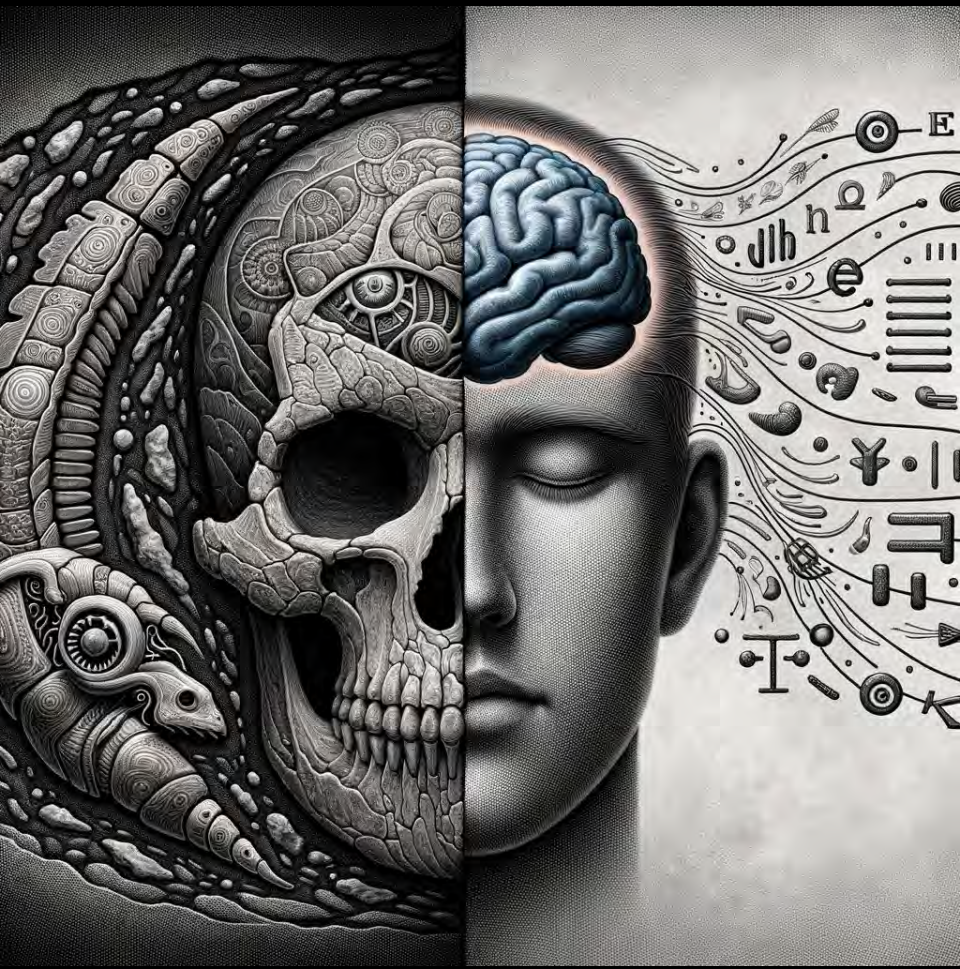
*Mania: both the performer and the audience*

One symptom of the manic phase of bipolar disorder suggests the recent evolution of our complex drive for social admiration. As a physician, I've occasionally found my objective stance shaken by the linguistic dexterity displayed by a patient enveloped in mania. A times, their speech unfurls as a torrent of eloquent expressions, punctuated with rhetorical flourishes and a compelling allure. The meanings they craft can spark a surge of exceptionally inventive narrative thinking. This linguistic spectacle does more than mirror the ostentatious displays found in nature, such as the peacock's tail; it transcends into our distinctly human sphere of social exhibition. Sylvia Nasar, in her biography of mathematician John Nash, *A Beautiful Mind* (1998), captures such a moment during a visit to McLean Hospital in Boston:

> Robert Lowell, the poet, walked in, manic as hell. He sees this very pregnant woman. He looks at her and starts quoting the begat sequences in the Bible. Then he started spinning quotes with the word 'anointed'. He decided to lecture us on the meaning of "anointed" in all the ways it was used in the King James Version of the Bible. In the end I decided that every word in the English language was a personal friend of his (p. 260).

*Every word in the English language was a personal friend of his*

We could consider mental illnesses as emotional fossils. As pinpointing a physical fossil's age requires careful analysis of surrounding geological layers, understanding our vanity's emergence—as reflected in mania—needs to be placed within our cognitive evolution timeline. The capacity for elaborate linguistic performances, exemplified by Lowell, seems to have emerged fairly recently, suggesting our drive for esteem arose within our own species' history.



*Cognitive linguistic dexterity in mania suggests recent evolution*

Moreover, viewing human language evolutionarily uncovers how our new mind ("me")—with its fluctuating and ostentatious tendencies—creates fascinating verbal displays within flexible, responsive grammatical structures. These rules are firmly anchored by our ancestral mind's stable, communal intent ("we").

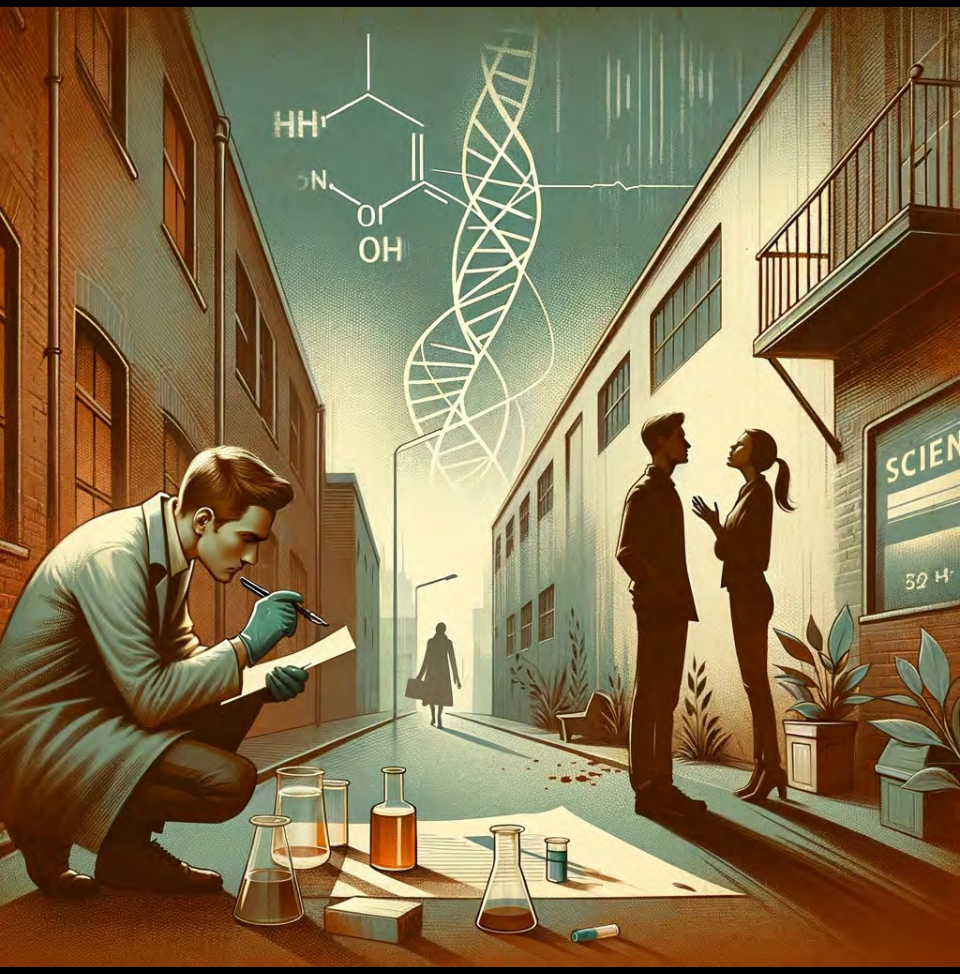
*The new mind of the "me" and the old mind of the "we"*

## Desire, Violence, and the Emergence of War

A significant byproduct of our species' persistent desire for desirability is the gradual rise of both individual and collective violence, or war. Anthropologists Nam Kim and Marc Kissel, in their work *Emergent Warfare in Our Evolutionary Past* (2018), put forth evidence that warfare has gradually developed throughout our species' existence—approximately 300,000 years—with clear signs of recurrent warfare emerging after the last glacial maximum. However, evidence of intra-species violence among our hominin ancestors is relatively scarce—cannibalism, yes, but not widespread violence.

*Evidence of recurrent warfare after the last glacial maximum*

Hence, pathological mania constitutes only a small portion of the negative impacts derived from our fervent, competitive yearnings for one another. Anthropologist Christopher Boehm has noted that in contemporary human hunter-gatherer societies, "the most severe conflicts often arise from poorly socially regulated competition over females" (Boehm, 2012). In today's society, unsolved murder cases frequently point to the spouse as the primary suspect, with motives most commonly rooted in greed and romantic rivalry. Could the pressures imposed by countless generations of individuals in love, attempting to unite diverse tribes, have unintentionally ignited clannish hostilities reminiscent of Shakespeare's Montagues and Capulets?




*Prime murder suspect: the spouse*

## The Lure of Charisma

Charisma, a personality attribute honed by sexual and social selection, considerably influences the shaping of modern societies. Authors David Graeber and David Wengrow, in their iconoclastic work, *The Dawn of Everything* (2021), underscore the pivotal role that charismatic leaders played in the rise of dynastic cultures across Mesopotamia, Egypt, and later in the Americas, including the Inca and Aztec civilizations. Initially, these leaders used their charm and allure to gather substantial followings. As their influence grew, they began to demonstrate their might through ritualistic displays of murder, striking fear into their followers. In time, they constructed monumental edifices to exalt themselves and pay homage to the formidable gods they claimed intimate affiliation with.

*Side-effect of sexual/social selection*

Primates, including humans, possess an innate aptitude for navigating intricate social hierarchies. Among our hominin predecessors, patterns of dominance and submission evolved into collective deference towards consensual social authority. However, in *Homo sapiens*, this deep-seated communal authority shifted from being relationship-based to being dominated by authoritarian tribal hierarchies. In this new dynamic, individuals' intense aspirations for prestige and admiration intertwined with their audience's emerging inclination to idolize them. This synergy of passionate desires could ignite a cyclonic flurry of escalating emotions and ambitions, a turbulent vortex potentially spiraling into exaggerated assertions of dominance and the dawn of despotism.

*More side-effects of vanity*

The emergence of dynasties signified a significant change in the dynamics of early post-nomadic societal structures. Interestingly, dynasties arose on the outskirts of far-flung settlements without archeological evidence of centralized government, administration, or an elite class (Graeber and Wengrow, 2021, p. 289).

*Peaceful post-nomadic settlements*

This ascent of dynasties forms part of a broader narrative that illustrates our species' descent into a cyclical state of warfare, a topic we will revisit later. Central to this transformation is the powerful emotional contagion of charisma and desire.

*The role of charisma and desire in chronic war*

As a result, battlefield selection favoring warfare-proficient societies has significantly influenced the evolutionary prelude to our species' current era. These "heroic" societies have leveraged their inherent propensity for teamwork, developing war tactics and societal structures to establish competitive dominance hierarchies. This selection for superiority in conflict has driven these societies to evolve into increasingly militaristic entities.

*Recent evolution by battlefield selection*

## Group Selection

The concept of group selection has a fraught history, having been used as a rationale for Nazi ideology, and current attitudes toward group selection are that it is weak evolutionary force in the game theory of competing individuals. Charles Darwin proposed his notion of group selection, possibly as a way to cast his contentious theory in a favorable light by emphasizing the selection of traits beneficial to the group. His use of the term "victorious" warrants particular attention:

> No doubt exists that a tribe containing many members who, due to high levels of patriotism, fidelity, obedience, courage, and sympathy, were always ready to aid each other and sacrifice themselves for the common good, would be victorious over most other tribes; and this would constitute natural selection" (Darwin, 1871, p. 166).

*Patriotism, fidelity, obedience, courage, and sympathy... would be victorious*

In this book's perspective, warfare also facilitates the shift of collective intentionality—redirecting the beneficiary of selection from justice and productive relationships to competition and group fitness.

*Selection shifted from the fitness of relationships to the fitness of tribes*

Because the interactive complexity of collective instincts exists along continuums of emotion-and-motivation, they are particularly sensitive to this shift in selection pressure from favoring relationships to favoring tribes.

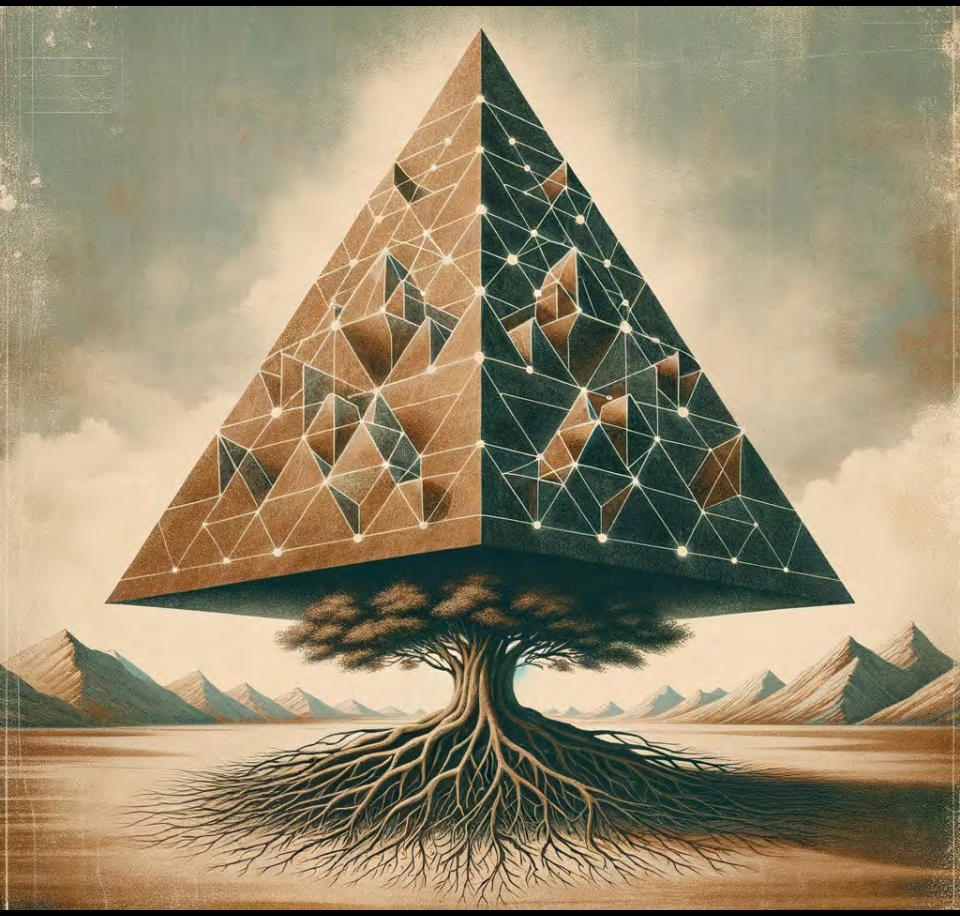
*Continuums of collective motivations are sensitive to selection pressures that benefit tribes over relationships*

Throughout our species' archaeologically documented history, root human instincts originally evolved for the substantial benefits of cooperative interaction have been perpetually redirected towards the benefits of tribal conflict.

*Root instincts for justice redirected for the benefit of tribal conflict*

## Organic to Authoritarian: A Shift in Hierarchies in *Homo Sapiens*

In the long arc of our lineage, a natural respect for authority took root over six million years, guiding our ancestral species to thrive through collaborative alliances. Yet, in the briefest of recent epochs, since the last glacial retreat, a new pattern has emerged: the rise of authoritarian hierarchies. This sharp pivot from the organic, consensus-driven scaffolds of old signifies a profound evolutionary shift, hinting at deep-seated changes within our genetic tapestry, changes that direct our group impulses and societal structures. These emergent hierarchies, efficient and formidable though they may be, represent a manipulation of our primordial cooperative instinct, transforming it into a tool for dominance. Such structures often blend submission with loyalty, a blend that, under the spell of charismatic leadership, redraws our social maps into binary territories of "us" and "them."



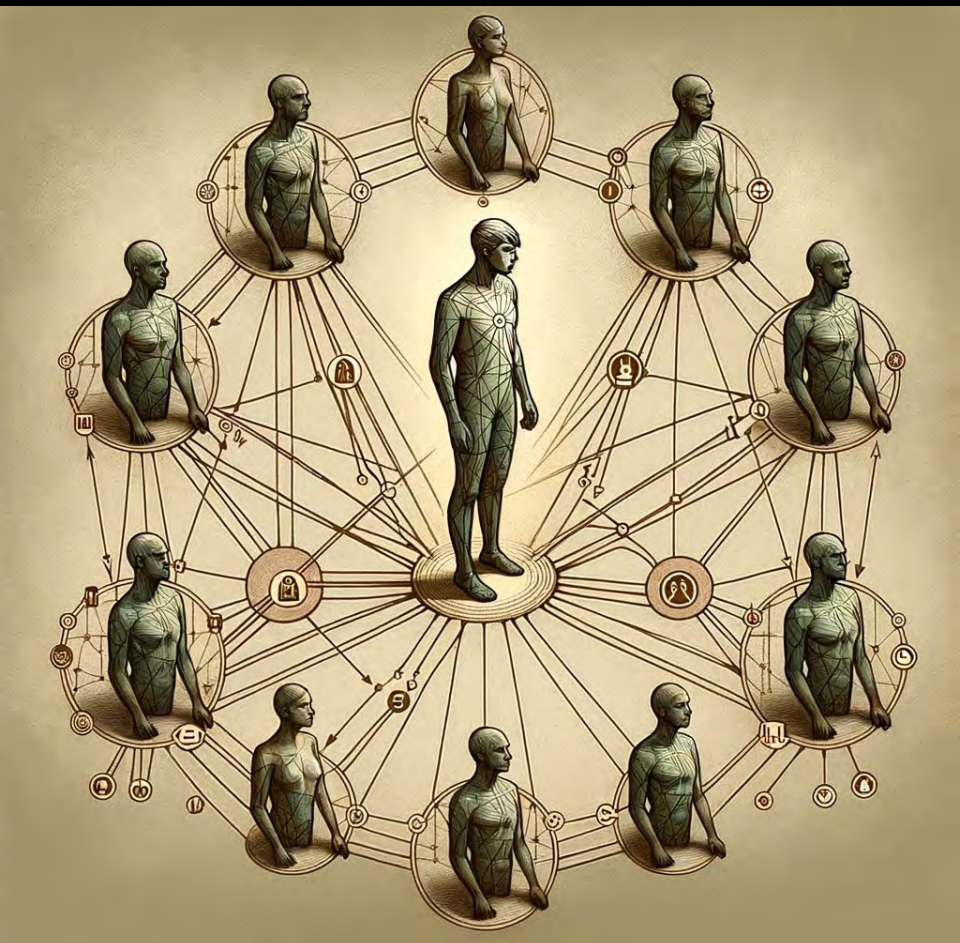
*Organic system crystalizes into pyramids*

In current society, the impact of this collective evolutionary shift is manifested in divisions and biases throughout society. These divisions and biases materialize in social assemblages at every scale, from intimate gatherings to vast political blocs, influencing all aspects of communal interaction—including the scientific community. Today's political divide reflects a tension between the efficiency of political and economic dominance hierarchies and the humanity inherent in the relational skills that are the root source of their power.

*Efficiency vs. humanity*

## Schizophrenia and Impaired Social Navigation

Throughout our recent evolution, *Homo sapiens* developed an intuitive "social navigation system" to interpret subtle authority signals. This system engenders a powerful allegiance, or "belief in," the norms and biases of the groups with which we identify. This subconscious process, however, is impaired in individuals with schizophrenia. These individuals often experience marginalization as their emotional capacity to discern the competitive interplay between self and others, or in-group and out-group, deteriorates. Embedded within the intricate exchanges of human conversation lies a subconscious layer of personal and group political strategizing—a dynamic that becomes dysfunctional in the context of schizophrenia.



*Subconscious layer of personal and group strategizing becomes dysfunctional*

## The Intersection of Mania and Schizophrenia

The frequent coexistence of mania and schizophrenia may result from the intertwined dynamics of social display and group-level identity—recent evolutionary phenomena. Mania and schizophrenia can be viewed as byproducts of the two fundamental aspects of our modern minds: one propelled by individual ambition, a driving force behind our economies, and the other fueled by unwavering loyalty to specific groups. These two interwoven instincts—one born of personal desires and aspirations, and the other emerging from our allegiance to distinct group entities—have been favored by natural selection for their persistent intensity. However, in some individuals, these mechanisms can malfunction, resulting in the symptoms of mania and schizophrenia.

*Individual ambition vs. group loyalty*

## Directions of Intentionality in Mania and Schizophrenia

The "direction" of intentionality in mania and schizophrenia offers insightful contrasts. In mania, the characteristic symptoms manifest as an expansive outpouring of thoughts and words, originating from the individual and directed towards society. Schizophrenia, however, is marked by disjointed thoughts and auditory hallucinations seemingly originating from society and targeting the individual. Again, in the analogy with audio systems, mania is like the output of a loudspeaker and schizophrenia to the input of a microphone in a feedback screech scenario: one echoes a manic outpouring from self, the other a schizophrenic inpouring from society.

*Output vs. Input*

## Schizophrenia: Breakdown in the Mechanism of Believing in Our Groups

Consider the 2013 Navy Yard shootings in Washington, DC for illustration. Initial hypotheses labeled the perpetrator as a terrorist, driven by adversarial group ideologies. Subsequent investigations, however, revealed his struggle with schizophrenia. An email he had authored, later disclosed by the FBI, illuminated his perceived motivation: "Ultra-low frequency [microwave] attack is what I've been subjected to for the last three months, and to be perfectly honest, that is what has driven me to this" (Botelho and Sterling, 2013).

In schizophrenia, typical group-level narratives—usually met with submission, obedience, and belief—can be perceived as forceful barrages. This happens when the instinctive emotional mechanism subtly conveying group authority to its members malfunctions, culminating in an experience of excessive amplification.

*Pathological hyperactivity of belief feelings*

## The Onset of Chronic Warfare

Recurrent warfare emerged with humanity's shift from nomadic hunting-gathering to a sedentary lifestyle, driven by agricultural advancements and expanding trade networks. These transformations fostered wealth accumulation, necessitating protection and sparking endless cycles of warfare.

*Prosperity and wealth led to warfare*

A disturbing parallel can be drawn with successful eusocial insect species, particularly ants, where societal interactions are dictated by pheromones—the insect equivalent of human social emotions. Edward O. Wilson, sociobiology's founder, posits in *The Social Conquest of Earth* (2012) that ants transitioned to group selection with the construction of defensible nests, inciting ceaseless warfare. The resulting chronic warfare has culminated in their dystopian social systems characterized by sterile worker/warrior castes and queens, with the intensity of defense proportional to the complexity and size of the nest (Wilson, 2012, p.130). This analogy prompts a disquieting question: are we, humans, embarking on a similar path?

*Headed for the anthill?*

## Striking a Balance between Evolutionary Forces

Reflecting on our species' evolutionary trajectory, we must remember that these disruptive instincts, despite their substantial influence, are recent additions in our evolutionary narrative and are still balancing with our primal human instincts for justice. Two essential goals emerge from this perspective: first, to channel the potent desire for recognition unique to *Homo sapiens*, forming integral part in our human narrative; second, to firmly guide resurgent primate dominance hierarchies towards promoting economic prosperity.

*Ape dominance vs. human glory*

## The Axial Age: An Awakening

Renowned psychiatrist-philosopher Karl Jaspers identified a significant period known as the "Axial Age." Peaking around 500 BCE, this epoch was remarkable for the concurrent and independent emergence of "the spiritual foundations of humanity... in China, India, Persia, Judea, and Greece..." (Jaspers, 1951, p. 98). The Axial Age witnessed a renaissance of ingrained collective instincts for justice and morality, overshadowed by eras of group selection favoring militaristic perspectives.

*The Axial Age*

## The Evolution of Law: From Warfare to Civility

The steady development of legal systems—from Hebrew and Roman law to English Common Law and the U.S. Constitution—signified the transition from a state of near constant warfare to more civil forms of exchange. Though political and economic transactions echo primate dominance contests, they're moderated by human-made laws and regulations.


*March of justice*

Modern political philosophies emphasize freedom, especially economic freedom, against tyranny's constraints. The motivation animating both economic competition and tyranny has very recently sprung from the same well of our fervent desire for one another, and the leveraged power of both derives from a legacy of six million years of evolving to function collectively as if inhabiting a single mind. Justice evolved to enable us to live our lives within this shared public space, our ecological "niche" where human lives have always flourished.

*Our ecological "niche"*

Without instincts for justice ingrained into our relationships, we might still be secluded in our forest refuges, engaging in boundless freedom to compete for dominance within our extended families, yet utterly lacking the ability to produce goods or services of any economic worth.

*Lacking the ability to work*

## The Authority of Truth

In 1967, philosopher Paul Grice revolutionized the study of language meaning with the introduction of a seemingly self-evident set of rules. I contend that these principles have been honed through six million years of human evolution. It was adherence to these four enduring Maxims, unveiled during the prestigious William James Lectures at Harvard, that historically conferred authority.

### GRICE'S MAXIMS

Overall: Be cooperative. Be informative.

I. Maxims of **Quantity**:

1. Make your contributions as informative as is required.
2. Do not make your contributions more informative than required.

II. Maxims of **Quality**:

Supermaxim: Try to make your contribution one that is true.

1. Do not say what you believe is false.
2. Do not say that for which you lack evidence.

III. Maxim of **Relation**: Be relevant.

IV. Maxims of **Manner**: Supermaxim: Be transparent.

1. Avoid obscurity of expression.
2. Avoid ambiguity.
3. Be brief.
4. Be orderly.


*Grice's Maxims: deepest human instincts*

As poet William Butler Yeats* observed, "We taste and feel and see the truth. We do not reason ourselves into it" (Yeats, 2013, p. 195). The Enlightenment era marked the re-emergence of our innate collective instinct to revere the authority of truth—an instinct that held paramount significance within the numerous tribes of our ancestral species. The individuals within these tribes spent their entire lives immersed in passionate discourse aimed at discerning the most equitable and correct course forward, effectively functioning as a single creature.

*Functioning as if a single creature*

* Yeats was originally commenting on truth as experienced in mysticism. However, in this context, the quote is repurposed to highlight our ancient human instincts for unearthing truth through a collaborative process that engages all modalities of perception

## Biblical Predicament

This essay traverses the landscape of two distinct human evolutionary forces, one propelled to peacefulness by fear and trembling, and the other propelled to excitation by pleasure and joy. To illuminate their import, I invoke the enduring narrative of the Garden of Eden. These animations represent divergent pathways, echoing the choices set before Adam and Eve. One pathway, bathed in the grace of communion, fosters collective well-being, peace, and harmony. The other, tempting the individual with the allure of fulfilling desires, bears the resemblance of a Faustian bargain. Through this lens, our evolutionary journey unfolds as an epic biblical pilgrimage, wherein our understanding of humanity's current plight is recast.

*Peace and harmony vs. fulfilling desires*

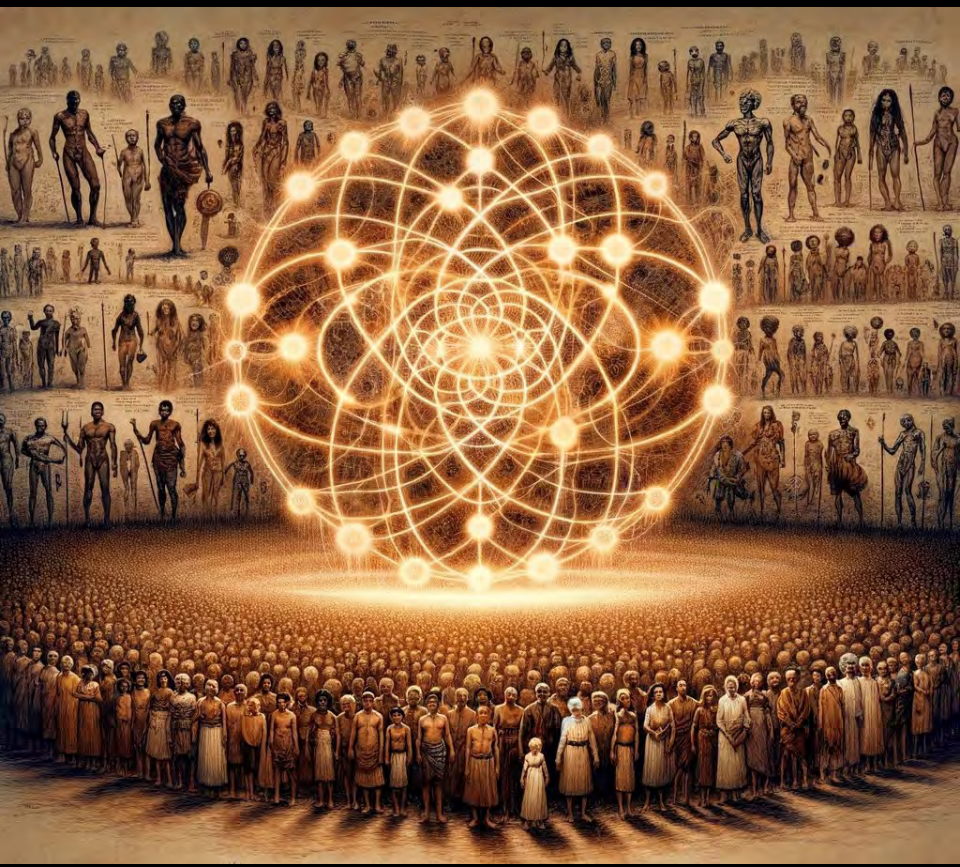
## Towards an Empathetic Understanding of Mental Illness

Tracing the intricate threads of our evolution illuminates poignant resonances with the experience of mental illness. This dimension casts a deep, empathic light upon our shared evolutionary saga—a felt echo of an epic tale spun by humanity itself.

*Poignant resonances of our evolution with the experience of mental illness*

This dimension deepens an understanding of our shared journey, answering Edward O. Wilson's call for a "new mythos," firmly grounded in truth:

> We are a single gene pool from which individuals are drawn in each generation and into which they are dissolved the next generation, forever united as a species by heritage and a common future. Such are the conceptions, based on fact, from which... a new mythos [can be] evolved. (Wilson, 1998, p.290)



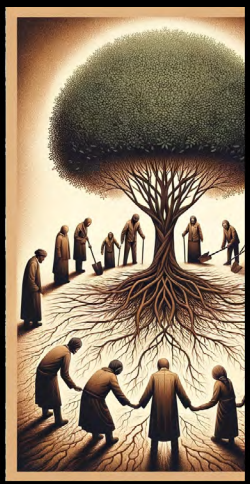
*We evolved as a single gene pool from which a new mythos based on fact is forged*

## Unfinished Symphony of Feelings

Delving into our story's profundities, we echo Joseph Campbell: "We are this beautiful planet's children... its eyes and mind, its seeing and its thinking"— and I add "feeling."

We have not been sculpted by the hands of a divine essence, but have rather emerged from the womb of this resplendent planet.

Our ascent to collective consciousness is an ongoing odyssey, an unfinished symphony, whose ultimate fate is the province of faith, prayer, and patience.



Our choices, their consequences, and our interpretation of them, will continue to braid an intricate weaving of our humanity’s emotional experiences.

Our destiny, steadfast in its course, will unfold into as yet unrealized dimensions, awaiting our voyage to the far horizon of our cherished deep blue orb.

John Wylie holds a BA in history from Yale, an MD from Columbia, and completed a psychiatric residency at Georgetown University. Dr. Wylie was a founding member of the Human Behavior and Evolution Society and has had a longstanding interest in the relationship between mental illness and human evolution.

## References


Anttila, V., et al. (2018) "Analysis of shared heritability in common disorders of the brain," *Science*, 360, issue 6395, https://doi.org/10.1126/science.aap8757.

Boehm, C. (2012). Ancestral Hierarchy and Conflict. *Science*, 336, 844–847, https://doi.org/10.1126/science.1219961

Botelho, G., & Sterling, J. (2013, September 26). *FBI: Navy Yard shooter "delusional," said "low frequency attacks" drove him to kill* [News report]. CNN. http://edition.cnn.com/2013/09/25/us/washington-navy-yard-investigation/?hpt=us_c2.

Chapais, B. (2013). Monogamy, strongly bonded groups, and the evolution of human social structure, *Evolutionary Anthropology*, 22(2), 52-55 https://doi.org/10.1002/evan.21345.

Culotta, E. (2010). Did Modern Humans Get Smart Or Just Get Together? *Science*, 328, 164, https://doi.org/10.1126/science.328.5975.164.

Darwin, C. (1871). *The Descent of Man and Selection in Relation to Sex*. John Murray.

Dunbar, R. I., & Shultz, S. (2007). Evolution in the Social Brain. *Science*, 317, 1344–1347, https://doi.org/10.1126/science.1145463.

Gazzaniga, M. (1998). *The Mind's Past*. University of California Press.

Graeber, D., & Wengrow, D. (2021). *The Dawn of Everything*. Farrar, Straus, and Giroux.

Grice, H. P. (1967). [Logic and conversation]. Unpublished manuscript, William James Lectures, Harvard University. Later published in Grice, H. P. (1989). Studies in the Way of Words (pp. 22-40). Harvard University Press.

William O. H. Hughes, WHO, et al. (2008). "Ancestral Monogamy Shows Kin Selection Is Key to the Evolution of Eusociality," *Science* 320, 1213–1216, https://doi.org/10.1126/science.1156108.

Hrdy, S. (2011). *Mothers and Others: The Evolutionary Origins of Mutual Understanding*. Harvard University Press.

Prüfer, K., et al. (2014). The complete genome sequence of a Neanderthal from the Altai Mountains. *Nature*, 505, 43–49, https://www.nature.com/articles/nature12886.

Prum, R. (2017). *The Evolution of Beauty: How Darwin's Forgotten Theory of Mate Choice Shapes the Animal World - and Us*. Doubleday.

Richter, D., et al. (2017). The age of the hominin fossils from Jebel Irhoud, Morocco, and the origins of the Middle Stone Age. *Nature*, 546, 293–296, https://doi.org/10.1038/nature22335.

Sikora, M., et al. (2017). Ancient genomes show social and reproductive behavior of early Upper Paleolithic foragers. *Science*, 358, 659–662, https://www.science.org/doi/10.1126/science.aao1807.

Skov, L., et al. (2022). Genetic insights into the social organization of Neanderthals. *Nature*, 610, 519-525, https://doi.org/10.1038/s41586-022-05283-y.

Smith, A. (1759). *The Theory of Moral Sentiments*. Alexander Kincaid and J. Bell.

Smith, A. (1776). *An Inquiry into the Nature and Causes of the Wealth of Nations*. W. Strahan and T. Cadell.

Styron, W. (1990). *Darkness Visible: A Memoir of Madness*. Random House.

Tomasello, M. (2019). *Becoming Human: A Theory of Ontogeny*. Harvard University Press.

Wilson, E. O. (1998). Consilience: *The Unity of Knowledge*. Alfred A. Knopf.

Wilson, E. O. (2017). *The Social Conquest of Earth*. W. W. Norton.

Yeats, W. B. (1972). *Memoirs*, D. Donoghue (Ed.). MacMillon.