

Neocortical Resonance. The Crucial Interplay of Art, Ethics, and Cognitive Clarity in Shaping Mental Health and Human Flourishing

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This comprehensive study delves into the intricate relationship between the evolution of the human neocortex, the historical foundations of the Seven Liberal Arts, the Seven Mechanical Arts, and the Six Arts of Zhou and their paramount significance in shaping mental health and human well-being in the contemporary epoch. At the core of our discourse is an exploration of the transformative power of art, ethics, and aesthetics in nurturing the mind, particularly emphasizing the foundational cognitive processes located within the neocortex. Through an amalgamation of historical review, neuroscientific evidence, and cultural critiques, we unravel the essence of these ancient arts and their lasting impacts on human cognitive evolution and societal progression.

A pivotal proposition of this paper is the assertion that an individual's mental health, clarity of thought, and overall well-being is intrinsically intertwined with their capacity to "name things by their proper names." This ability, we argue, is emblematic of optimal neocortical functioning. In juxtaposing this enriched neocortical

existence, fortified by engagement with the arts, against the potential limitations posed by dogmatic religious and doctrinal thinking, we underscore the need for a new mental health paradigm. This fresh perspective prioritizes cognitive clarity, celebrates artistic and aesthetic endeavors, and fosters a profound, ethically grounded comprehension of human existence.

The research culminates in advocating a shift in understanding mental health, not as a mere absence of illness but as a vibrant alignment with neocortical engagement and a life suffused with art, ethics, and clarity. We conclude with a call for future endeavors to further examine and integrate these ancient arts into modern therapeutic and educational practices, emphasizing their undiminished relevance in promoting mental health in our rapidly evolving world.

Keywords. *Neocortex, Liberal Arts, Mechanical Arts, Six Arts of Zhou, Mental Health, Artistic Education, Ethical Reasoning, Cognitive Clarity, Naming Phenomena, Doctrinal Thinking, Aesthetics, Neuroevolution, Human Well-being, Cognitive Development.*

Introduction

In the vast tapestry of human history, our understanding of mental health has undergone numerous evolutions, shaped by scientific discoveries, societal changes, and philosophical deliberations. The human brain, with its immense complexity, has often stood at the nexus of these discussions, revealing tantalizing insights into our psychological fabric. Today, we stand on the cusp of yet another paradigmatic shift — one that accentuates the significance of the neocortex, the liberal arts, and their collective role in fostering psychological well-being.

The septem artēs liberālēs, or the Seven Liberal Arts—namely Grammar, Dialectics, Rhetoric, Arithmetic, Geometry, Music, and Astronomy—alongside other cultural and artistic pursuits, have been cardinal in shaping the cognitive and socio-cultural evolution of humanity (Wikipedia contributors, 2023). Such arts are not merely didactic tools; they represent an intricate dance of neural processes, cultural values, and human creativity. Today, their relevance extends beyond historical significance, shedding light on the intimate

relationship between artistic engagement, cognitive enrichment, and mental health.

In parallel, the expansive development of the human neocortex—the outermost layer of the brain responsible for higher-order thinking, spatial reasoning, and conscious reflection—has been central to our unique anthropological journey. The ability to label, categorize, and name the world around us, a cornerstone of linguistic and cognitive development, is a testament to the dynamism of our neural pathways and the primacy of the neocortex in this process. This essay seeks to emphasize the potent synergy between the liberal arts and neocortical development, illustrating their collective role in modern anthropogenesis.

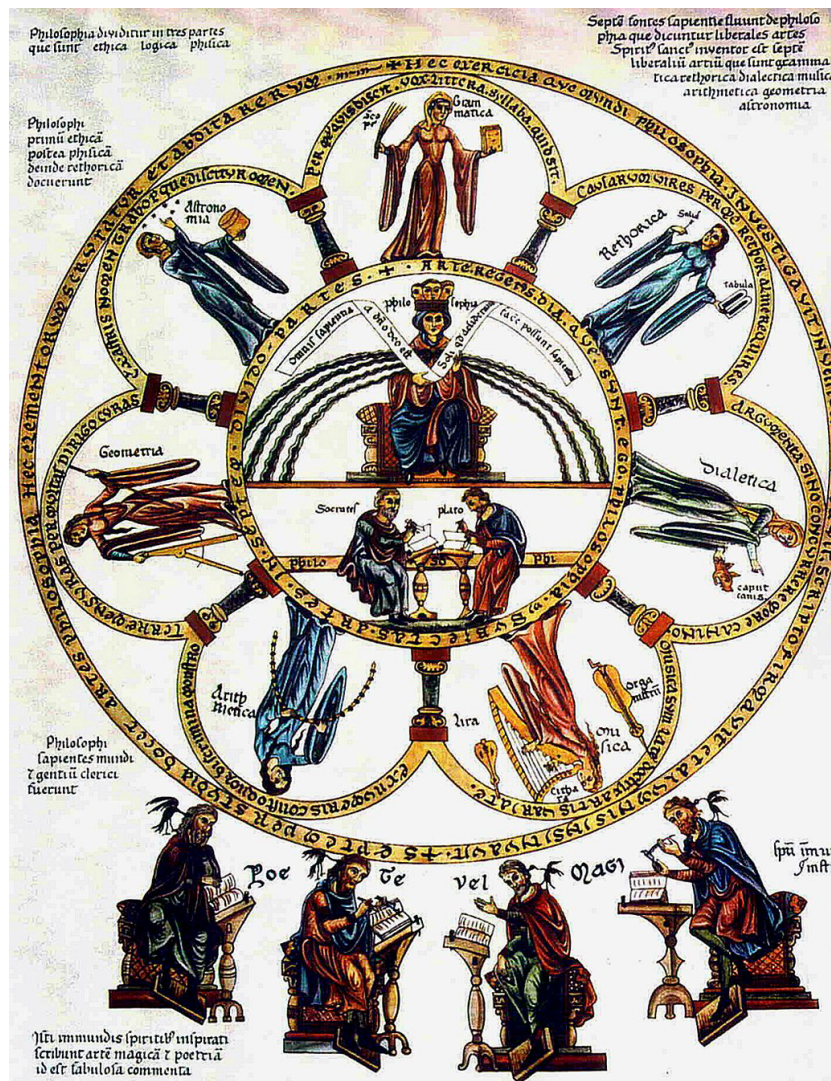
Yet, as we chart this neurocognitive landscape, we are met with stark contrasts. On one hand, the arts, ethics, and neocortical reasoning push us towards open-mindedness, empathy, and critical reflection. On the other, religious dogmatism and strict doctrinal thinking threaten to constrict cognitive freedoms. In such a milieu, a question emerges. How do we navigate the tension between these poles, and what does it mean for the future of human mental health?

This article embarks on an exploration of this terrain, arguing for a renewed emphasis on aesthetics, ethics, and artistic engagement in our understanding of psychological well-being. Far from esoteric pursuits, these elements are posited as foundational to a holistic, enriched human experience—free from the confines of dogma, and deeply rooted in the intricate workings of the neocortex. As we delve deeper, we shall also underscore the imperative of a life lived "in the neocortex," advocating for a mental health paradigm that champions cognitive freedom, artistic exploration, and a relentless pursuit of understanding.

The Seven Liberal Arts

These arts encompassed the breadth of what was considered essential for a well-rounded education in medieval Europe (T, 2021; Tubbs, 2015).

Grammar. Beyond mere language rules, grammar forms the foundational structure for understanding and expressing thoughts. Neuropsychologically, it engages the Broca's and Wernicke's areas, crucial for language processing.



Philosophia et septem artes liberales, "philosophy and the seven liberal arts."
From the Hortus deliciarum of Herrad of Landsberg (12th century)

Dialectic (Logic). The art of reasoning and argumentation sharpens the frontal lobe's analytical abilities, fostering critical thinking and decision-making.

Rhetoric. As the art of effective expression, it promotes the integration of emotion (limbic system) with logical structuring (frontal cortex).

Arithmetic. Number processing involves the parietal lobe, especially the angular gyrus, facilitating abstract reasoning and spatial understanding.

Geometry. The study of shapes and space, geometry taps into the brain's visual-spatial processing areas in the right hemisphere.

Music. This art integrates both hemispheres of the brain, linking emotional processing (amygdala and limbic system) with pattern recognition (temporal and parietal regions).

Astronomy. As the precursor to modern astrophysics, it connects the visual processing centers with abstract reasoning, bridging imagination and reality.

The Seven Mechanical Arts

Largely connected to practical life, these arts corresponded to essential vocations and trades (Alvares, 2011).



A high medieval construction site from the Maciejowski Bible

Textiles and Sewing. Fine motor skills, governed by the cerebellum and motor cortex, are refined through these crafts.

Agriculture. This discipline involves planning and environmental awareness, sharpening executive functions.

Construction. As a spatial and structural discipline, it engages the parietal lobe and frontal cortex for planning and execution.

Military and Hunting. These disciplines demand high alertness and motor coordination, enhancing the amygdala's response mechanisms and cerebellum.

Trade. This requires a mix of arithmetic skills and human interaction, integrating various brain regions.

Cookery. Sensory integration (taste, smell, touch) enriches the connections between the sensory cortices and limbic system.

Blacksmithing. The precision and rhythm involved stimulate fine motor skills and pattern recognition.

The Six Arts of Zhou

Central to the aristocratic education in ancient China, these arts signified a holistic grooming (Hao, 2012).



Rituals. Encompassing both physical coordination and understanding, rituals promote social cognition and motor skills.

Music. Much like its Western counterpart, music in China integrated emotion and cognition.

Archery. Enhancing focus and motor coordination, it sharpens the connections between vision, decision-making, and action.

Charioteering. As a dynamic skill, it involves spatial awareness, coordination, and executive planning.

Literacy. Reading and writing refine language centers and foster creativity and expression.

Arithmetic. Number skills promote logical reasoning and abstract thinking.

The evolution of these arts and disciplines, embedded within different cultures, signifies humanity's innate desire to understand, express, and grow. Neuropsychology underscores how these arts not only shape societies but also mold the neural pathways, reflecting the symbiotic relationship between culture and cognition. As we delve deeper into the intersections of neuroscience and culture, it becomes evident that our past arts and disciplines were not mere educational tools but powerful shapers of the human psyche.

The Arts and the Shaping of Epochal Skills. A Journey Through Anthropogenesis

The evolution of human society has always been intricately linked with the development and nurturing of key skills through various arts and disciplines. These arts not only reflected the zeitgeist of their respective eras but were also pivotal in shaping the trajectory of social and cultural anthropogenesis. Several researchers and authors have delved into this interplay, highlighting the vital connection between these arts and the development of human society.

The Seven Liberal Arts and Anthropogenesis

The Seven Liberal Arts, dominant in medieval Europe, were reflective of the era's intellectual aspirations. The quest for knowledge and understanding was intertwined with the desire for a divine connection. These arts were pivotal in shaping the clergy and academia.

- Grammar, Rhetoric, and Dialectic. Known as the 'Trivium', these were essential for effective communication and debate. As author

Cassiodorus has noted, mastering these was crucial for understanding divine texts and theological discourse.

- Arithmetic, Geometry, Music, and Astronomy. Termed the 'Quadrivium', they were vital for understanding the world. Boethius, a prominent scholar, emphasized their role in grasping the universe's harmonious order.

These arts, according to scholars like Hugh of St. Victor, were fundamental in shaping a well-rounded individual, capable of both spiritual introspection and worldly understanding (Poirel, 1998).

The Seven Mechanical Arts and Societal Infrastructure

These arts, rooted in practicality, were crucial for societal sustenance and infrastructure.

- Eriugena emphasized that mastering these arts was essential for societal progression. The foundations of urbanization, agriculture, and economy were rooted in these disciplines.

Such arts, as per Isidore of Seville (Medieval Bestiary: Encyclopedia: Isidore of Seville, n.d), played a key role in shaping the medieval social structure, distinguishing between the nobility (those who prayed and fought) and the working class (those who worked).

The Six Arts of Zhou and Aristocratic Grooming

In ancient China, the Six Arts were pivotal for aristocratic grooming.

- The blend of spiritual (rituals) and practical (archery and charioteering) disciplines signified a holistic approach to leadership. Historian Confucius believed that mastering these arts would lead to a harmonious and balanced individual, capable of governing with wisdom (READ, n.d.).

Furthermore, scholars like Zisi and Mencius expanded on Confucian teachings, emphasizing that these arts weren't merely for the elite but were crucial for societal harmony.

Cultural Anthropogenesis and the Arts

E.B. Tylor, one of the pioneers of cultural anthropology, asserted that understanding such arts is essential for deciphering the evolution of culture (Peter Melville Logan, n.d.; Street, 1998). The nurturing of

these disciplines aligns with the progression from simple to complex societies. The codification of knowledge, the move from practical to abstract reasoning, and the emphasis on moral and ethical grooming through these arts signify the milestones of human societal evolution.

Claude Lévi-Strauss, a structural anthropologist, believed that these arts, much like myths, provide a structure to societies, offering insights into human cognition and societal organization (Doja, 2010).

The arts, throughout history, have not merely been expressions of human creativity. They've been vital in shaping the social, cultural, and cognitive trajectories of humanity. By revisiting the works of ancient scholars and modern anthropologists, we gain profound insights into the profound impact of these disciplines on the course of human evolution.

The Arts and Human Neuroevolution. A Neural Tapestry of Progress

The intricate tapestry of human evolution is not just written in our genes or evident in our physical attributes, but it's also embedded in the neural pathways of our brains. The arts, often seen as a reflection of our culture and civilization, play a pivotal role in shaping these pathways. Delving into how the arts intersect with the neuroevolutionary journey of Homo sapiens provides profound insights into our species' uniqueness.

The Seven Liberal Arts and Cognitive Expansion

Grammar. The linguistic centers of the brain, primarily Broca's and Wernicke's areas, have evolved significantly in humans. The study and sophistication of grammar have likely contributed to the enhancement of these regions, fostering complex language abilities unique to humans.

Dialectic & Rhetoric. Engaging in logical reasoning and persuasive speech requires intricate interplay between the frontal lobes, responsible for critical thinking, and the limbic system, governing emotion. Our ancestors' engagement in debates and discourses might have contributed to the evolution of these intricate neural connections.

Arithmetic & Geometry. Abstract numerical and spatial reasoning primarily engage the parietal lobes. Our prehistoric ancestors' need for quantifying resources or building shelters may have been the

rudimentary beginnings, but the later formalization of these arts surely refined our unique mathematical and spatial abilities.

Music. Music, both in its creation and appreciation, involves widespread brain areas. The evolution of the auditory cortex and its connections with the emotional centers (limbic system) might have been significantly influenced by our species' engagement with music.

Astronomy. Observing patterns in the skies and forming cosmological narratives requires both observation (visual cortex) and pattern recognition (parietal and temporal lobes). This art could have honed our ancestors' predictive abilities, crucial for survival.

The Seven Mechanical Arts and Sensorimotor Refinement

The mechanical arts, being more tactile, have implications for the evolution of our sensorimotor systems.

Textiles, Blacksmithing, & Cooking. These crafts demand refined motor skills, likely influencing the development of the cerebellum and motor cortices.

Agriculture & Construction. Beyond physical labor, these require planning, fostering the growth of the prefrontal cortex, associated with executive functions.

Military & Hunting. The alertness and rapid decision-making required here could have contributed to the evolution of the amygdala and its connections, vital for rapid threat assessment.

Trade. Integrating mathematical skills with social interaction, this art could have played a role in shaping the evolution of both parietal and social cognition regions of our brain.

The Six Arts of Zhou and Holistic Brain Development

Rituals & Literacy. Both require memory and sequence processing, implicating the hippocampus and surrounding temporal regions.

Archery & Charioteering. These demand coordination and spatial awareness, fostering cerebellar development and visual-spatial processing.

Music & Arithmetic. As discussed, these arts have implications for both emotional processing and abstract reasoning, reflecting the holistic nature of the Zhou educational system.

Throughout human history, our engagement with various arts and disciplines has been a driving force for the neuroevolutionary changes that set us apart. While our ancestors adapted their brains to their environments, our societies, through the arts, continually reshaped those very brains, creating a feedback loop of cultural and neural evolution. As we understand more about the brain through modern neuroscience, it becomes evident that our historical arts and disciplines were not just reflections of human culture but powerful sculptors of the human neural landscape.

The Influence of Arts on Human Brain Development. A Dive into Scientific Studies

The interplay between the arts and the development of the human brain has been a topic of interest for researchers for decades. Accumulating evidence from various studies suggests that engagement with diverse artistic disciplines has tangible effects on neural structures and functions. Let's delve into some significant research that explores this fascinating nexus.

Music and Neural Plasticity

Numerous studies have examined the effects of music on the brain, both in terms of appreciation and performance.

- Gaser and Schlaug (2003) found that professional musicians had increased volume in certain areas of the cortex related to auditory processing and motor control.

- Research led by Dr. Nina Kraus (2014) at Northwestern University found that musical training in children could improve neural processing of sounds, which has implications for developing language skills.

Visual Arts and Brain Connectivity

The influence of visual arts, especially in terms of creation, has shown distinct impacts on neural connectivity (Gold, Ciorciari, 2020).

- A study (Bolwerk, Mack-Andrick, Lang, Dörfler, Maihöfner, 2014) revealed that art education can enhance the connectivity between the frontal and parietal cortices, regions linked to introspection, attention, and fine motor skills.

Literacy, Grammar, and Neural Integration

Engaging with language, both in terms of reading and understanding complex grammar, leads to tangible effects in the brain.

- Dehaene et al. (2010) in their book "Reading in the Brain" explored how literacy transforms the neural architecture, especially the visual word form area (VWFA).

Mathematics and Spatial Processing

Complex numerical and spatial reasoning tasks have long been associated with distinct brain areas' activity.

- Dr. Sian Beilock (2011; 2017) and her team at the University of Chicago found that math anxiety could lead to decreased activity in regions responsible for mathematical reasoning, highlighting the deep connection between mathematical understanding and the brain's workings.

Dance and Motor Control

Dance, being a blend of auditory appreciation and intricate motor control, offers insights into the interplay between various brain regions.

- Brown et al. (2006) demonstrated that when dancers learn and execute choreographed moves, there's enhanced connectivity between the auditory, motor, and mirror neuron systems.

Rhetoric and Emotional Processing

The art of persuasion and understanding human emotions requires a blend of cognitive and emotional brain centers.

- Dr. V. S. Ramachandran, in his work, often cites the amygdala's role, responsible for emotional reactions, and its connection to regions governing language and critical thinking (Anthony, 2017).

While this is just a brief overview, the body of research underscoring the connection between arts and brain development is vast. The consensus emerging from this research is clear. The arts aren't just for cultural appreciation but are integral to the holistic development and evolution of the human brain. These findings provide a compelling argument for the integration and emphasis of arts in educational and developmental paradigms.

Integrating Traditional Arts into Modern Professional Training. A Necessity for Today's World

In a rapidly changing, technologically-driven world, the foundation and teachings of traditional arts might seem distant or perhaps obsolete. However, these arts, rooted in centuries of human evolution and culture, offer invaluable lessons that can significantly enrich modern professional training. Understanding the need for this integration, and actively embedding it into our contemporary educational frameworks, is not just beneficial but essential for the holistic development of today's professionals.

Broadening Cognitive Horizons

The study of traditional arts such as grammar, rhetoric, and dialectics equips individuals with structured thinking, logical reasoning, and articulate expression. By engaging with these disciplines, modern professionals can develop enhanced critical thinking and communication skills, crucial in a world filled with information overload and the need for discernment.

Enhancing Analytical Abilities

The mathematical arts, like arithmetic and geometry, don't just instill numerical skills but also nurture analytical thinking. Such capabilities are invaluable in today's data-driven world, whether one is interpreting complex datasets or forecasting market trends.

Fostering Creativity and Imagination

Music and visual arts play a crucial role in stimulating the right brain, fostering creativity and imaginative thinking. In professions that demand innovation and out-of-the-box solutions, drawing inspiration from these arts can provide a competitive edge.

Grounding with Earth and Environment

The mechanical arts, especially agriculture and architecture, emphasize our connection with the environment. In an era of environmental consciousness and sustainability, understanding these arts can drive eco-friendly decision-making in businesses and industries.

Enhancing Multitasking and Coordination

Skills derived from the arts of the Zhou dynasty, such as archery and charioteering, are symbolic of multitasking, coordination, and spatial awareness. These can be translated into modern contexts like project management, coordination between interdisciplinary teams, and more.

Developing Empathy and Emotional Intelligence

Engaging with the arts enhances our ability to perceive, understand, and regulate emotions. Emotional intelligence is becoming increasingly recognized as a crucial soft skill in leadership and team dynamics, and the arts play a pivotal role in its development.

Incorporating these traditional arts into contemporary professional training doesn't mean reverting to ancient practices but involves extracting the core principles and adapting them to modern contexts. By doing so, we ensure that professionals are not just technically proficient but also possess a breadth of skills, from critical thinking to emotional intelligence, ensuring they are well-equipped for the complex challenges of the 21st century. Integrating arts into modern education isn't a return to the past, but a step forward, acknowledging the time-tested wisdom and relevance of these disciplines in shaping holistic professionals for today's world.

Aesthetic and Ethical Education in the Modern World. The Role of the Neocortex and the Imperative of Art over Religious Dogmatism

In today's fast-paced, technologically-driven world, the role of aesthetics and ethics in individual growth might be overlooked. However, their impact on the development and function of our most evolved brain structure, the neocortex, cannot be understated. A proper understanding of this connection underscores the importance of aesthetic and ethical education as pillars for developing enlightened, free-thinking individuals.

The Neocortex and Human Evolution. A Deep Dive into Advanced Cognition

The neocortex, often dubbed the "seat of humanity," has been a focal point of intrigue for neuroscientists, anthropologists, and evolutionary biologists alike. Its unparalleled expansion in *Homo sapiens* has sparked a multitude of hypotheses surrounding the evolutionary advantages it conferred and its role in our unique cognitive capacities.

Anatomy and Structure

The neocortex, distinguished by its wrinkled appearance, covers the larger part of the brain's surface in humans. Composed of six layers, it's dense with neurons, intricately connected in a web that allows for complex processing.

Evolutionary Expansion

While the neocortex exists in all mammals, its remarkable growth in the human lineage is undeniable. This expansion is believed to be a pivotal factor that set us apart from other species.

- Bipedalism. Some scientists posit that bipedal locomotion freed our hands, which in turn led to tool use. The cognitive demands of creating and using tools could have driven the growth of the neocortex.

- Social Interactions. The "social brain hypothesis" suggests that the complexities of human social interactions, including cooperation and competition, may have been a driving force behind neocortical expansion. Managing these social intricacies required advanced cognitive functions, which the neocortex could provide.

Role in Advanced Cognition

The neocortex is fundamental to a slew of higher-order cognitive functions.

- Spatial Reasoning. This involves understanding the organization of objects in space, essential for activities ranging from hunting in ancient times to modern-day navigation. The parietal lobe, a part of the neocortex, plays a crucial role here.

- Complex Planning. From organizing hunts in prehistoric times to contemporary project management, the ability to plan is central to human success. The frontal regions of the neocortex are largely responsible for these planning capabilities.

- Conscious Thought. Consciousness, self-awareness, and introspection are largely attributed to neocortical processing. Our ability to reflect on our actions, predict consequences, and make informed decisions is intrinsically tied to this region of the brain.

Aesthetics, Ethics, and the Neocortex

Research has consistently shown that exposure to art and aesthetic experiences stimulates the neocortex.

- Zeki's (2017) studies on the "Art of the Brain" revealed that art appreciation and creation activate numerous neocortical regions, enhancing sensory perception, cognitive analysis, and emotional processing. Both aesthetic perceptions and ethical judgments, which form the crux of human culture and civilization, are closely linked to neocortical function.

- Aesthetic Perception. The appreciation of beauty, whether in art, nature, or design, activates various parts of the neocortex. This includes regions associated with visual processing, emotional resonance, and memory.

- Ethical Judgments. Our moral compass, which dictates our understanding of right and wrong, is deeply embedded in neocortical functions. It's here that we process complex ethical dilemmas, weighing potential outcomes and empathizing with others.

The neocortex, with its rich neuronal architecture and expansive surface area, is arguably the epicenter of what makes us uniquely human. Its role in shaping our advanced cognitive abilities, aesthetic appreciations, and ethical considerations cannot be overstated. As we continue to delve into its mysteries, it remains a testament to the evolutionary journey of our species and the pinnacle of cognitive evolution.

Ethics, Morality, and the Neocortex. A Deeper Exploration

The brain, with its myriad of structures and functions, serves as the wellspring of human behavior. Among these behaviors, our moral and ethical decisions stand out for their complexity and profound impact on society. The neocortex, particularly, plays a paramount role in shaping our moral compass.

Moral Cognition and Neocortical Involvement

The neocortex is deeply intertwined with our capacity for moral cognition – the ability to process, reason, and judge ethical situations. Certain neocortical areas are activated when individuals confront moral dilemmas or evaluate moral statements.

- Dorsolateral Prefrontal Cortex (DLPFC). Often associated with logical reasoning and decision making, the DLPFC is active when individuals weigh the pros and cons of a moral decision.

- Ventromedial Prefrontal Cortex (VMPFC). Linked to emotions, this region often lights up in fMRI scans when individuals consider moral problems with personal or emotional components.

- Anterior Cingulate Cortex (ACC). This area is associated with conflict detection and is activated when moral decisions involve internal conflict or are particularly challenging.

Greene and Haidt's Findings on Moral Judgment

Greene and Haidt's research has been groundbreaking in the realm of moral neuroscience. Their studies used functional magnetic resonance imaging (fMRI) to observe brain activity in individuals presented with various moral dilemmas.

- Emotion vs. Reason. One of their significant findings was the dichotomy between emotion-driven and reason-driven moral decisions. While the VMPFC was more active during emotionally charged moral decisions, the DLPFC was more involved in abstract, impersonal moral reasoning.

- Trolley Problem. One of the famous dilemmas they used was the 'Trolley Problem'. The emotional distress caused by the decision to directly harm someone (by pushing them onto the tracks) versus the logical reasoning of sacrificing one to save many highlighted the tug-of-war between the VMPFC and DLPFC.

The Interplay of Emotion and Reason in Morality

While the neocortex is integral to moral reasoning, it doesn't operate in isolation. The older, more primitive brain regions, especially the amygdala (linked to emotions), also play a role. In some scenarios,

emotional responses can override logical reasoning, leading to decisions that might seem illogical but feel right emotionally.

Ethical Development and Neocortical Plasticity

The brain's plastic nature means our moral compass isn't static. Experiences, societal norms, and education can reshape our ethical landscape. This plasticity suggests that with the right interventions, such as ethical education or exposure to diverse perspectives, we can cultivate a more compassionate, understanding society.

The intricate dance between different neocortical regions, in tandem with other brain areas, crafts our moral judgments. Research like that of Greene and Haidt provides invaluable insights into the neurobiological underpinnings of ethics, underscoring the profound interplay of emotion, reason, and societal context in shaping our moral universe. As we continue to unearth the nuances of the brain's role in morality, we're reminded of the vast potential and responsibility we bear as ethical beings.

Art and Ethics vs. Religious Dogmatism

The delicate balance between art, ethics, and religious dogma has been a point of contention throughout human history. As societies evolved, so too did our understanding of these domains and how they shape human behavior and cognition.

Art and Ethics. Pillars of Humanistic Thought

- ***Open-mindedness***. Art, by its very nature, is subjective. Its appreciation relies on an individual's ability to accept and celebrate multiple viewpoints. Researchers like Ellen Dissanayake have proposed that the evolutionary role of art is to enhance cohesion and shared understanding in societies. By immersing ourselves in diverse artistic expressions, we learn to view the world through others' eyes, thereby broadening our own horizons.

- ***Empathy***. Ethical teachings often center on understanding and valuing human experiences. Neuroscientists such as Dr. Marco Iacoboni

have studied how mirror neurons, which activate both when we perform an action and when we observe someone else perform that action, can be a neurobiological foundation for empathy. Engaging with stories, whether through literature or visual media, allows us to live vicariously through characters, building our empathic capacities.

- **Critical Thinking.** The fields of aesthetics and ethics inherently promote critical evaluation. Philosopher Martha Nussbaum has often highlighted the role of literature in nurturing our moral insights, emphasizing its capacity to stimulate critical thinking about human experiences and ethical dilemmas. Unlike certain religious doctrines that may demand blind adherence, art and ethics equip individuals with the tools to question, ponder, and arrive at their own conclusions.

Religious Dogmatism. The Double-edged Sword

Religion has undoubtedly played a pivotal role in shaping civilizations. While it offers solace, community, and moral guidance to many, its stringent doctrines can sometimes hinder free thought.

- **Doctrinal Rigidity.** Some religious frameworks can be strict, discouraging questions or deviations from established beliefs. Historian Karen Armstrong has detailed how religious fundamentalism can arise as a reaction to the perceived threats, leading to an uncompromising adherence to dogma.

- **The Balance Act.** Balancing religious beliefs with open-mindedness is a challenge. Scholars like Richard Dawkins and Sam Harris argue for the supremacy of rationality and critical thinking over blind faith. On the other hand, theologians like Alvin Plantinga and John Polkinghorne propose that religious belief and rational thought can coexist harmoniously.

The intersection of art, ethics, and religion presents a vast tapestry of human experience. While religious dogmatism can sometimes limit our worldviews, a robust foundation in aesthetics and ethical reasoning can counterbalance these limitations. Emphasizing the latter can usher in societies where open dialogue, mutual respect, and intellectual growth are paramount.

It is evident that for the modern individual to thrive, they should be nestled within the realms of aesthetics, ethics, and the arts. These domains, deeply linked to our advanced neocortical functions, provide a

holistic approach to life, free from the confines of rigid religious dogmatism. They offer an avenue for continuous growth, open-mindedness, and a deeper connection to the essence of humanity. In a world that sometimes seems fragmented by beliefs, the universal language of art and the guiding light of ethics might indeed be our most potent tools for unity and progress.

Discussion

The Impact of The Seven Mechanical Arts, The Seven Liberal Arts, and The Six Arts of Zhou on Human Neurology

Both The Seven Mechanical Arts and The Seven Liberal Arts, along with The Six Arts of Zhou, have played formative roles in molding human cognitive development and philosophical perspectives. Each of these systems, rooted in differing cultural and historical contexts, has undeniably contributed to shaping how humans think, reason, and understand their environments.

The Seven Mechanical Arts—consisting of practical disciplines such as weaving, agriculture, and navigation—represent a set of tactile and hands-on skills that shaped societal progress. These disciplines stimulate areas of the brain concerned with motor coordination, spatial reasoning, and tangible problem solving.

On the other hand, The Seven Liberal Arts—grammar, logic, rhetoric, arithmetic, geometry, music, and astronomy—are designed to foster higher cognitive functioning and abstract thought. Their focus on linguistic dexterity, mathematical reasoning, and musical comprehension offer a rich tapestry of experiences for the neocortex, the area of our brain responsible for advanced cognitive activities, emotional control, and abstract interpretation.

However, The Six Arts of Zhou, originating from ancient China, bring an amalgamation of both practical and abstract disciplines. Consisting of rites, music, archery, charioteering, calligraphy, and mathematics, they represent a holistic approach to education. While rites and music speak to the cultural and philosophical ethos of a society, disciplines such as archery and charioteering focus on precision, focus, and physical mastery—all crucial for neocortical development.

Furthermore, the integration of calligraphy in The Six Arts is especially fascinating from a neurological standpoint. Calligraphy, with its intricate strokes and patterns, requires a blend of cognitive attention, fine motor skills, and artistic expression. It's a powerful mediator for both mechanical precision and aesthetic appreciation—two dimensions crucial for a balanced neocortical development.

Considering the profoundly abstract and conceptual nature of The Seven Liberal Arts and the multidimensionality of The Six Arts of Zhou, it can be posited that together they provide a comprehensive regimen for the neocortex. In a juxtaposition, while the Mechanical Arts build the external world, the Liberal Arts and The Six Arts of Zhou collectively mold the inner cognitive landscapes. These landscapes, enriched by varied disciplines, can serve as antidotes to rigid dogmatic thinking, propelling the human mind towards broader horizons of understanding.

Engaging with these multifaceted arts, irrespective of one's professional trajectory, equips the brain with diverse cognitive tools. It nurtures a brain that is both receptive and critically analytical. Embracing the teachings of these arts in contemporary pedagogies ensures not just the development of specialized skills but also a holistic cognitive foundation—a foundation that is paramount in navigating the complexities of modern existence without being tethered to dogmatic chains.

Throughout human history, the arts and sciences have played an indelible role in shaping the trajectory of our evolution, both biologically and culturally. In the panorama of this evolution, the 'liberal arts', which encompass subjects like Grammar, Rhetoric, Logic, Arithmetic, Music, Geometry, and Astronomy, emerge as critical contributors to the present-day anthropogenesis.

The undeniable intersection of these arts with the growth and functions of our neocortex—the advanced part of the brain responsible for our highest-order cognitive abilities—underscores the intrinsic link between artistic engagement and human cognitive advancement. By participating in and understanding these arts, we don't just acquire knowledge; we fundamentally enhance the neural structures that drive our most advanced cognitive processes.

Living 'in the neocortex', in this context, means transcending mere instinctual or dogmatic thought processes, and embracing a life defined by critical thinking, introspection, and a quest for understanding. The neocortex, with its capacities for abstract thought, moral reasoning, and

artistic appreciation, becomes the very cradle of our higher human experience. To "live in the neocortex" is to prioritize these complex cognitive functions, allowing them to guide our perceptions, judgments, and actions.

Yet, as humanity progresses, there's a looming challenge. The seduction of dogmatic and mystical religious interpretations, often described as "mind games". These can, at times, sidestep reason, promote non-evidentiary beliefs, and deter questioning. While they might offer solace to some, they can also limit the potential for critical thinking and inhibit the full flourishing of the human cognitive experience.

In the face of such challenges, the role of aesthetics and ethics becomes paramount. These are not mere philosophical or artistic endeavors but are foundational to our neurocognitive health. A holistic education, focusing on the liberal arts, can help foster a society where aesthetic appreciation and ethical reasoning become as fundamental as any other life skill. Such an education offers an alternative to dogmatic thinking, grounding individuals in the tangible, the real, and the reasoned.

In conclusion, as we reflect on the path of modern anthropogenesis, the emphasis should be clear. Our collective future rests not in the confines of dogmatic mysticism, but in the expansive realms of the neocortex, where art, ethics, and reason converge. To prioritize the liberal arts is to acknowledge and embrace the fullness of our human potential, ensuring that as a species, we live not merely by belief but by understanding.

Conclusion

As we journey through the annals of human cognition, the intertwined dance of the neocortex and the liberal arts emerges not merely as a historical curiosity, but as an enduring beacon for modern psychological well-being. Our exploration underscores the profound connection between our evolved neocortical structures and the realms of art, ethics, and non-dogmatic thinking, painting a holistic picture of human mental health that transcends traditional boundaries.

The Seven Liberal Arts, which have historically informed our intellectual and socio-cultural trajectories, remain vitally relevant in the contemporary landscape. They serve as conduits to stimulate our neocortical functions, enhancing our capacities for open-mindedness,

empathy, and critical thinking. In this context, the ethos of living "in the neocortex" emerges as a clarion call. to embrace a life steeped in art, ethical contemplation, and aesthetic appreciation, fostering a rich cognitive landscape that nurtures psychological well-being.

Conversely, the restrictive bounds of religious dogmatism and doctrinal thinking can stifle our cognitive freedoms and curtail the richness of human experience. It becomes evident that for a thriving human psyche, it is pivotal to move beyond mere doctrinal confines, and towards a realm that values cognitive diversity and artistic expression.

Moreover, the intricate relationship between labeling, cognition, and the neocortex provides compelling evidence that our mental health is closely tethered to our ability to comprehend, categorize, and engage with the world. This understanding is crucial, as it paves the way for a more informed, art-centric approach to mental health, where aesthetics and ethics replace doctrinal rigidity.

Looking ahead, it is imperative to embrace a new paradigm of mental health that foregrounds the significance of the arts and the neocortex. Such a framework champions cognitive freedom, celebrates artistic exploration, and fervently seeks a deeper understanding of the human psyche. As we advance into the future, let our commitment be to foster an environment where the mind thrives, informed by art, guided by ethics, and profoundly rooted in the expansive capabilities of the neocortex.

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