

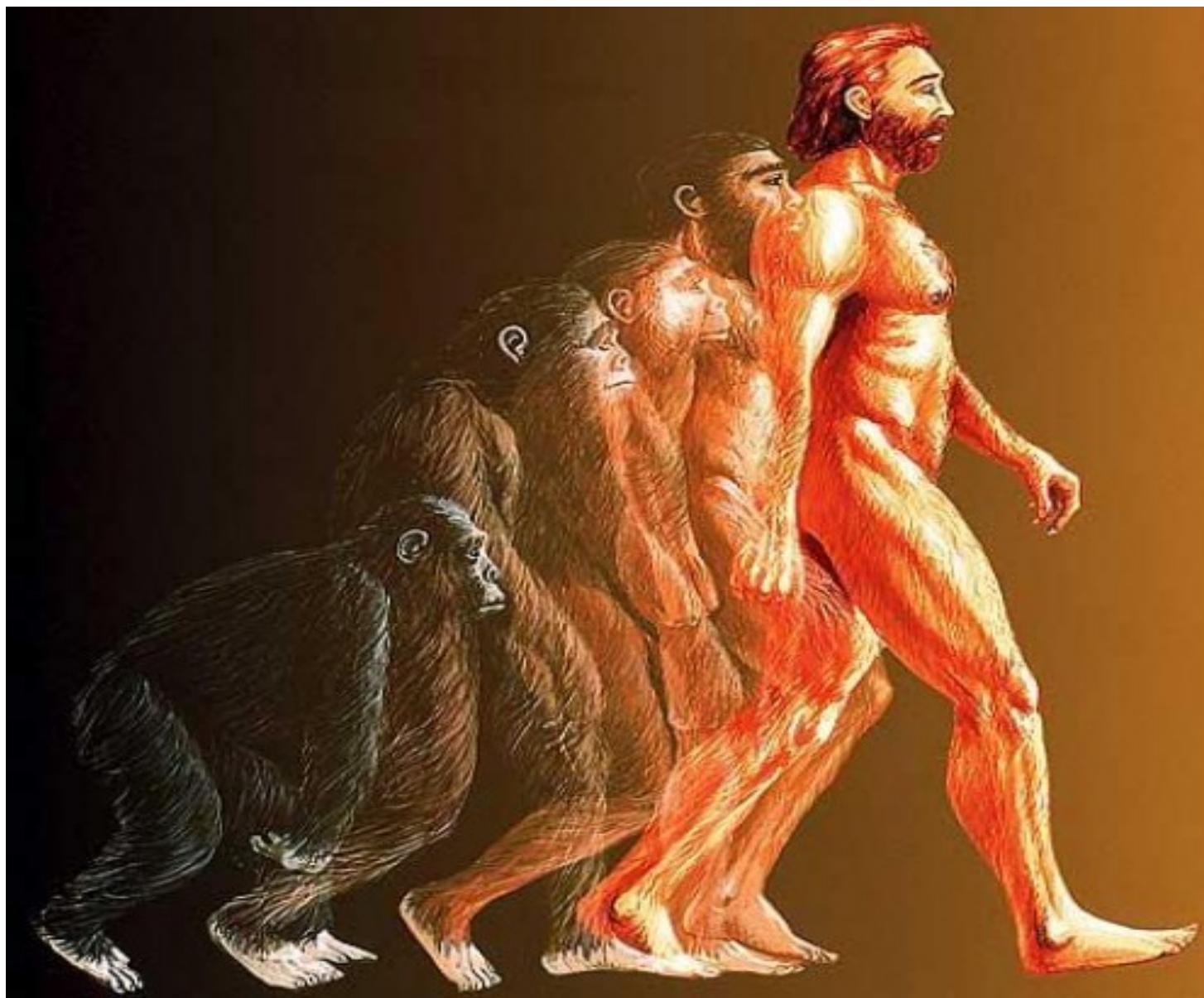
A New Basis for Dialogue Between the Truths of Science and Religion

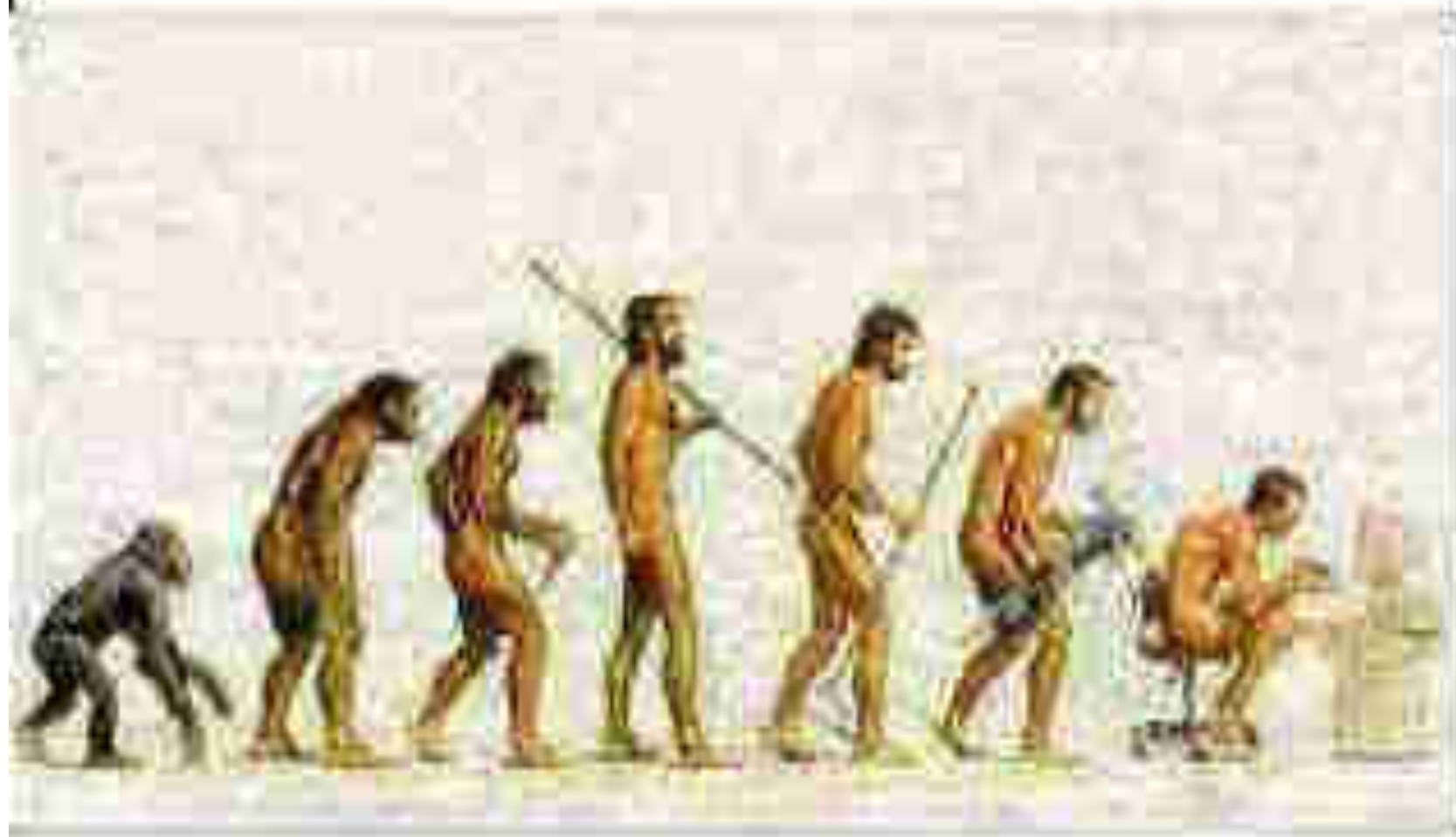
Laying the Conceptual Foundations
for the Emergence of an
Environmental Ethos

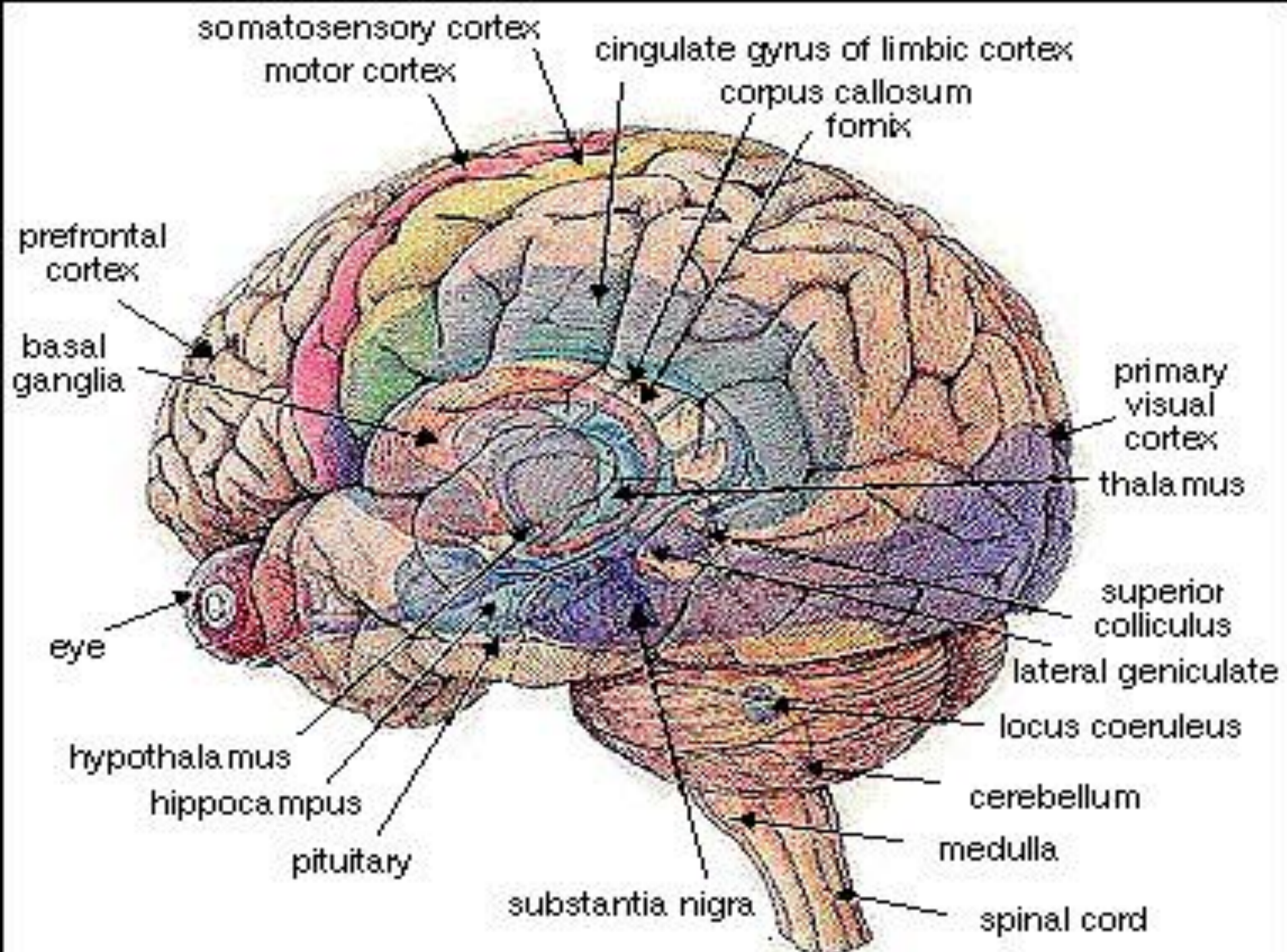


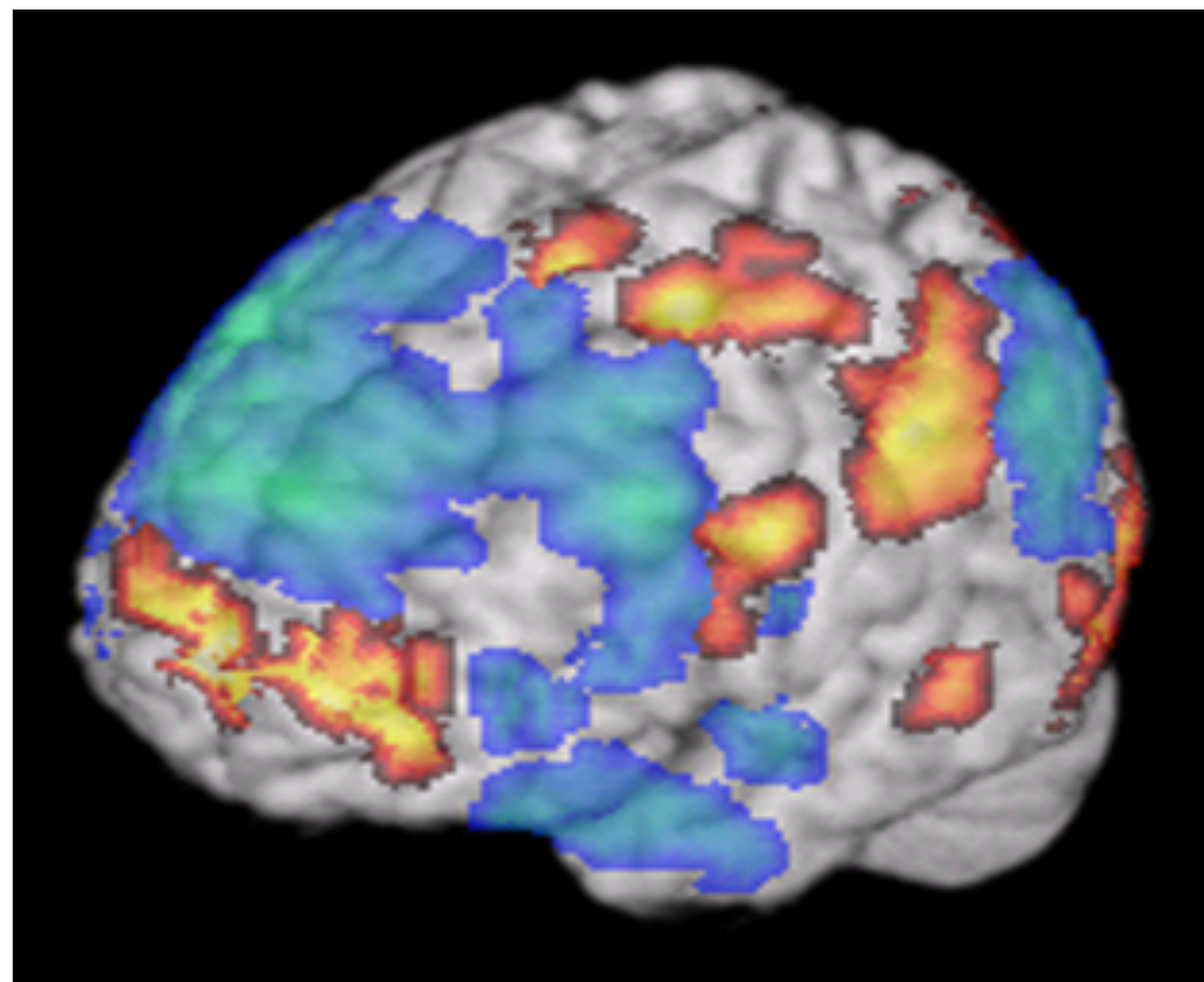








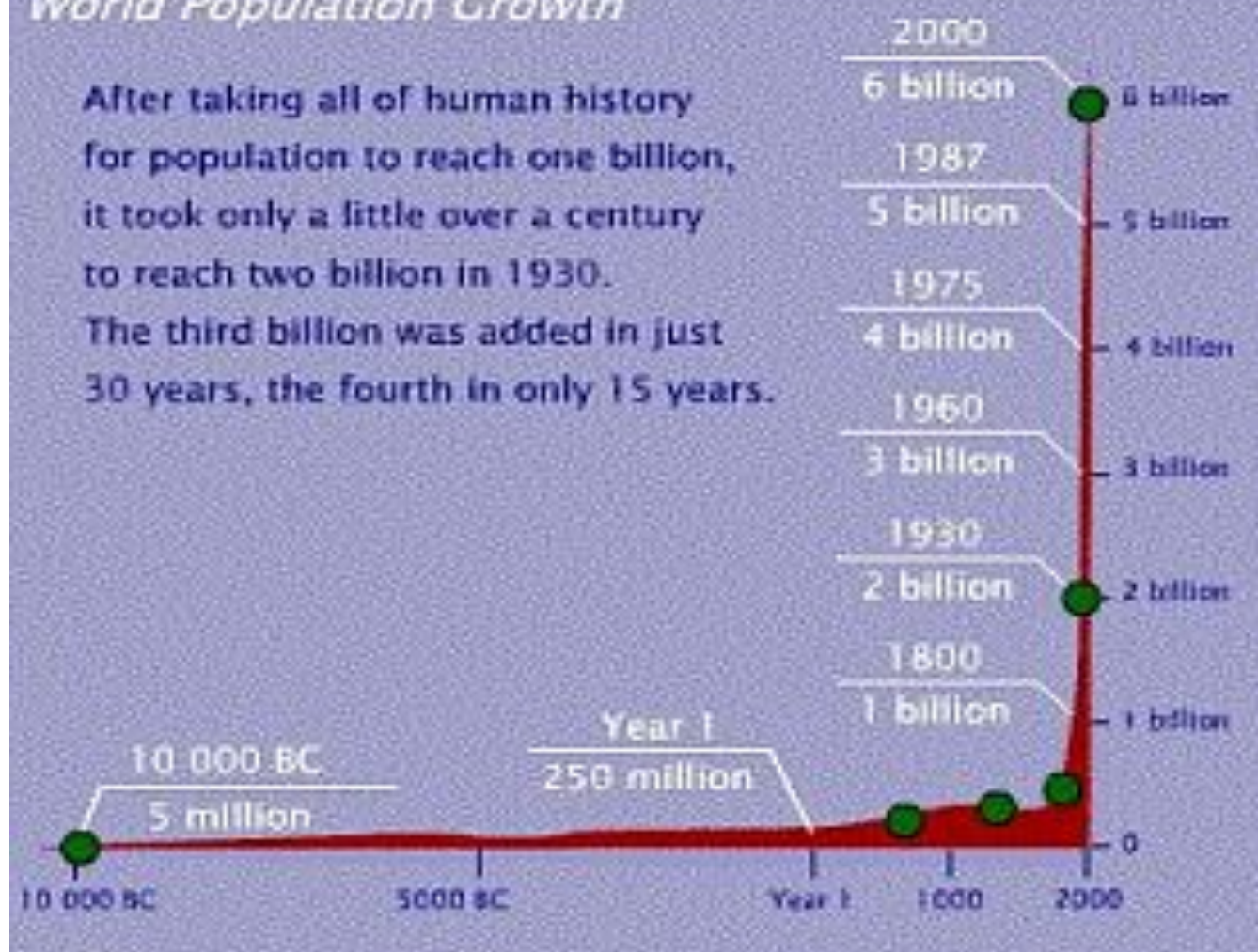






World Population Growth

After taking all of human history for population to reach one billion, it took only a little over a century to reach two billion in 1930. The third billion was added in just 30 years, the fourth in only 15 years.





The New Story about Modern Humans

- Human brain is transformed into the human mind through intensive and prolonged learning in complex linguistic environments.
- After the human mind emerged, the world that previous generations perceived as single and entire become two worlds.

The Two Worlds of Fully Modern Humans

- An inner world in which the self that is aware of its own awareness exists, and an outer world in which this self seeks to gratify its needs and establish a meaningful sense of connection with other selves.
- And the most fundamental impulse in the storied lives of fully modern humans has been to close the gap between the inner and outer worlds by integrating all seemingly discordant parts of their symbolic universe into a meaningful and coherent whole.

Meta-narrative of Religion

- The meta-narrative that has consistently served to bridge the gap between these inner and outer worlds is religion.
- But in the seventeenth century, another meta-narrative emerged called science which also promised to integrate all of the parts in our symbolic universe into a meaningful and coherent whole.

Science and Religion

- In classical physics, the universe was nothing more than matter or mass points moving through vector space in accordance with forces associated with completely deterministic physical laws.
- In the worldview of this physics, there was no place for the knowing mind and no basis for believing in the existence of any higher power or spiritual agency.

REBIRTH OF THE SACRED



Science, Religion, and the New Environmental Ethos

ROBERT L. NADEAU



The New Dialogue

- The aspect of the new story of science I will talk about today involves research in neuroscience which provides substantive validity to a claim made by William James.
- The claim is that the most profound religious experience, a wordless sense of communion with the single significant whole of spiritual reality, is the “mother sea and fountainhead” of all the great religions of the world.

Questions?

- Why are descriptions of the most profound state of spiritual awareness in all of these religious traditions virtually identical?
- And why are descriptions of the character of spiritual reality remarkably the same in spite of the differences in ontology, or in conceptions of the nature of God or Being?

Spiritual Awareness

- A wordless sense of communion with a single significant whole in which the sense of self as a separate and discrete identity ceases to exist and there is no passage of time or extension in space.
- And this single significant whole is described as both infinite and undifferentiated and utterly real in spite of the fact that it cannot be described in cognitive terms.

Descriptions of Spiritual Reality

- Bhagavad Gita: “Of all that is material and all that is spiritual, know for certain I am both its origins and dissolution.”
- Tao te Ching: “The Oneness that cannot be named. The Above of this Oneness is not bright, and the Below of this Oneness is not dark. As a continuum, it cannot be named..It is therefore the form of no form, the image of no object.”

Descriptions Spiritual Reality

- Buddhist master Huang Po: “All the Buddhas and all sentient beings are nothing but the One Mind, besides which nothing exists. This Mind, which is without beginning, is unborn and indestructible.”
- Book of Revelations: “I am the Alpha and Omega, the first and last.”

Descriptions of Spiritual Reality

- Book of John: “That they be one; as thou Father are in me, and I in thee, that they may also be one in us..that they may be one, even as we are one: I in them and thou in me, that they may be perfect in one.”
- The Qur'an: “Withersover you turn, there is the face of God.”

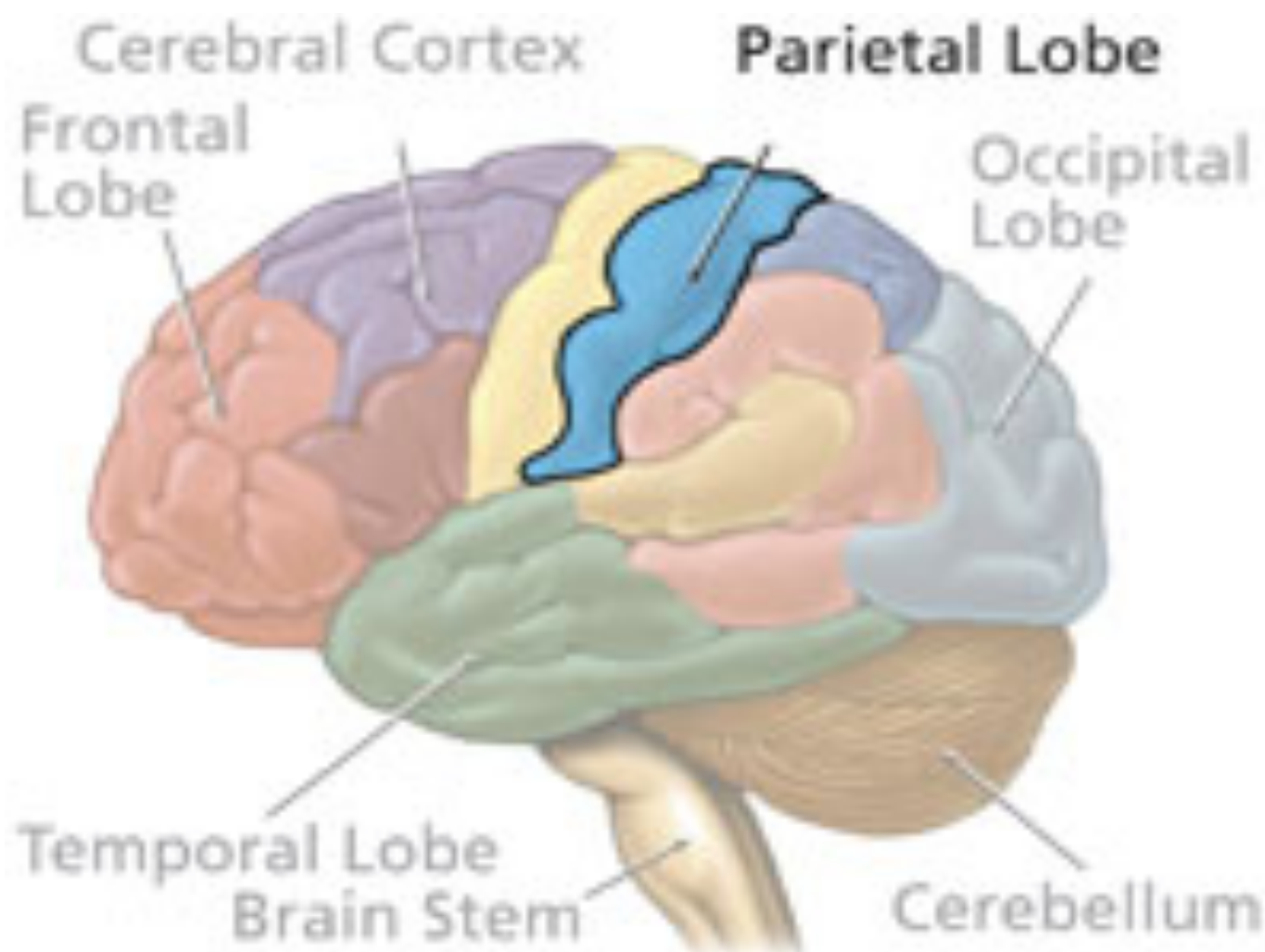


Results of Scans

- A dramatic decrease in neuronal activity in the left or dominant hemisphere that contains the major language centers which generate narratives about a self separate from world.
- A dramatic decrease in the neuronal activity in areas of the posterior parietal lobes.

Self as Skin Encapsulated Ego

- The sense of the self as a separate entity existing in three dimensional space is associated with inputs from the parietal lobes which are located at the rear portion of the brain at the top of the skull.
- One region in the left parietal lobe contributes to the mental sensation of having a limited and physically defined body bounded by the skin.
- Another region in the right parietal lobe contributes to the sense of the body existing in three dimensional space.



Lateral or Side View

Brain sections illustrated above are not to scale.

States of Profound Spiritual Awareness

- The Buddhist monks and Catholic nuns said that during states of profound mystical awareness, they experienced a wordless and joyous sense of absolute unity with the spiritual reality that is the source of all being and becoming in the vast cosmos.
- But when they were asked to describe the meaning of this experience, they did so within the context of their respective religious traditions.

Neurological Explanation

When the monks and nuns were in the most profound state of spiritual awareness, the cognitive processes associated with narratives about self and the sense of self as separate from world were deactivated.

But when they asked to describe the meaning of this experience, these processes were reactivated and the descriptions were based on narratives about the relationship between self and spiritual reality in their respective religious traditions.

Implications

- Since the brain scans of the monks and nuns in states of profound spiritual awareness were virtually identical, this strongly suggests that they were in very similar states of spiritual awareness.
- If this is the case, it seems reasonable to assume that this experience is, as William James said it was, the “mother sea and fountain head” of all of the great religious traditions of the world.

Why this Matters

- The most fundamental truth in all of the great religious traditions of the world is that self is emergent from and embedded in the whole of spiritual reality and any sense of separation from this whole is an illusion fostered by a lack of understanding of this reality.
- And the most fundamental truth in the new story of science is that self is emergent from and embedded in the seamlessly integrated whole of the cosmos on the quantum mechanical level and the seamlessly interconnected whole of the biosphere on the macro level.

The Most Profound Moral Truth

- Hinduism: “One should never do that to another which one regards as injurious to one’s self. This is the rule of dharma.”
- Taoism: “Regard your neighbor’s gain as your own and your neighbor’s loss as your own.”
- Buddhism: “Hurt not others in ways that you yourself would find hurtful.”

Most Profound Moral Truth

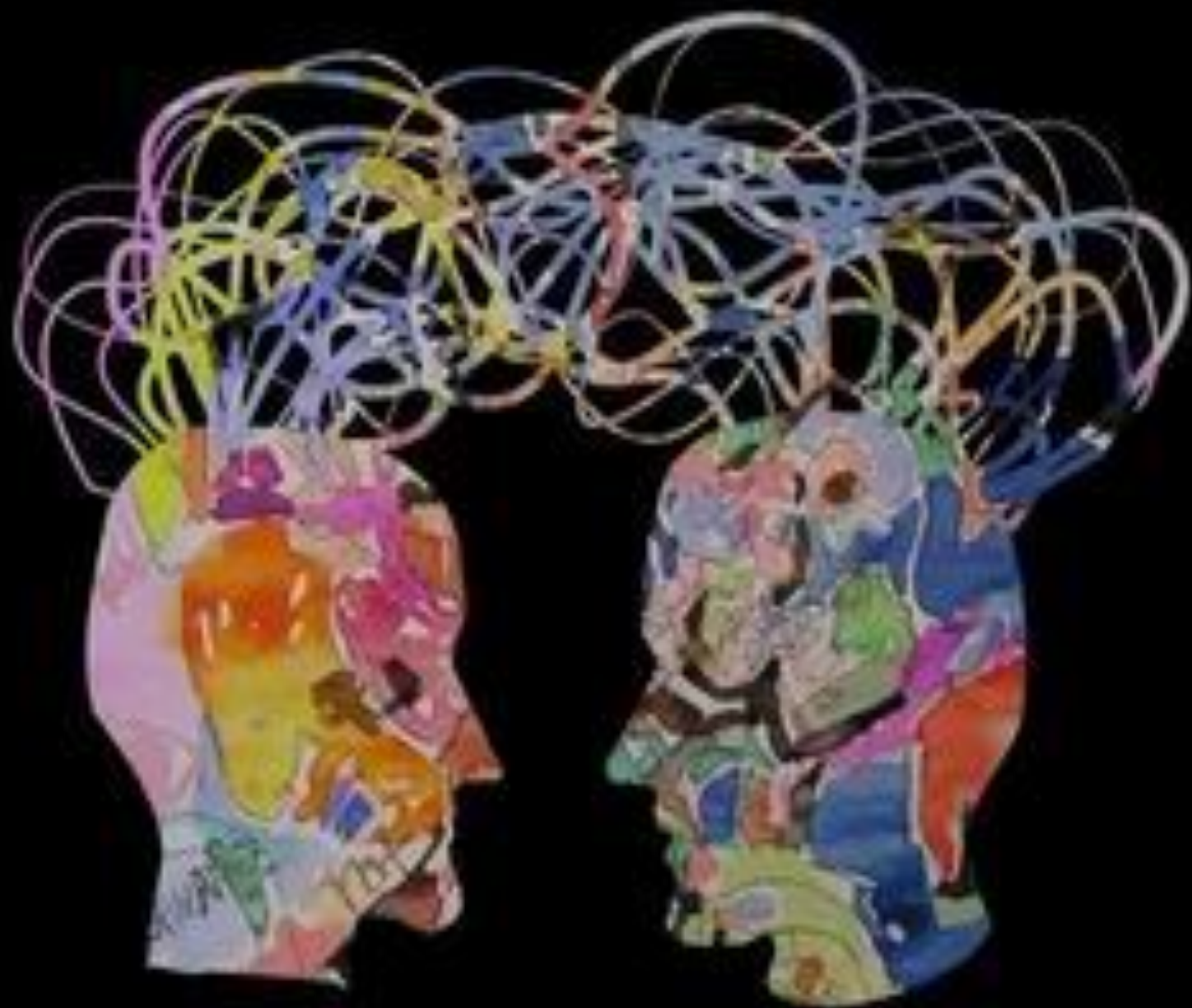
- Judaism: “The stranger who resides with you shall be one of your citizens; you will love him as yourself.”
- Christianity: “All things whatsoever ye would that men do to you, do you even so to them.”
- Islam: “None of you believes until he wishes for his brother what he wishes for himself.”

Mirror Neuron System

- Research in neuroscience has also revealed that we have evolved an innate capacity to experience the other as oneself in the absence of feedback from brain regions and neuronal processes associated with linguistically constructed narratives about self and world.
- Mirror neurons fire when we perform a particular action or watch this action performed by someone else.
- This system simulates the action or behavior of others in our brains and allows us to feel the emotion and grasp the intent associated with the action.

Mirror Neuron System

- The mirror neuron system operates with little or no feedback from the higher level cognitive processes associated with conscious reflective behavior.
- Rissolatti: “Mirror neurons allow us to grasp the minds of others not through conceptual reasoning but through direct simulation. By feeling, not by thinking.”



Joan Miró, 1969

Neuronal Substrate of Moral Behavior

- Epstein: “People apprehend reality in two fundamentally different ways, one variously labeled intuitive, automatic, natural, non-verbal, experiential, and the other analytical, deliberative, verbal and rational.”
- Recent research in neuroscience and the behavioral sciences has begun to explain why this is the case.

Neuronal Substrate Moral Behavior

- The brain regions and neuronal processes associated with spontaneous moral behavior are essentially the same as those involved in human perceptual processes.
- The brain regions and neuronal processes associated with making conscious moral decisions are associated with the more recently evolved language centers and the medial and dorsolateral areas in the frontal lobes.

Neuronal Substrate of Moral Behavior

- The neuronal processes associated with spontaneous moral behavior encode reality in images and metaphors, make connections through the process of association, mediate behavior based on past experiences, and invoke powerful feelings of empathy, sympathy and compassion.
- The more recently evolved system involved in making conscious moral decisions encodes reality in abstract symbols, makes connections by logical analysis, mediates behavior by conscious appraisal of events, and does not invoke powerful feelings of empathy, sympathy and compassion.

The Nonverbal System

- The system that results in spontaneous moral behavior probably enhanced the prospects of survival in small hunter gather tribes where the lives of individuals were often threatened by present and immediate dangers.
- The legacy of this evolutionary past is apparent in research in the social sciences that shows that people are much more willing to provide aid that could relieve the suffering of identified individuals with names and faces than for unidentified individuals or groups.

Moral Behavior

- When we encounter the suffering of identified individuals, the system associated with spontaneous moral behavior is activated and feedbacks from the limbic system result in feelings of empathy, sympathy and compassion.
- When we confront numerical and statistical information about the suffering of large numbers of unidentified individuals, the system associated with making deliberative moral decisions is activated and there is minimal feedback from the limbic system.

Moral Behavior

- Mother Teresa: “If I look at the mass I will never act. But if I look at the one, I will”
- Annie Dillard: “There are 1, 198, 500,000 people living in China. To get a feel for what this means, simply take yourself—in all your singularity, importance, complexity and love, and multiply by 1, 198, 500,000.”

Research in Social Sciences

- It now appears that the human capacity to engage in spontaneous moral behavior, like the capacity to acquire and use fully complex language systems, is a product of evolution and innate.
- This conclusion has been reinforced by research in the social sciences which suggests that the moral concepts and emotions associated with spontaneous moral behavior are universal in spite of the differences in standards for ethical behavior in diverse cultural contexts.

Research in Anthropology

- The anthropologist Donald Brown has made a convincing case that the list of these universal concepts and emotions includes:
- Distinctions between right and wrong, empathy, fairness, rights and obligations, prohibitions against murder, rape and other forms of violence, shame, taboos and sanctions for wrongs against the community.



Standard Social Science Model

- The new story about humanity challenges the validity of two assumptions in the standard social science model that is still widely used by historians, literary critics, anthropologists, sociologists and psychologists.
- The first assumption is that the human brain is an infinitely pliable blank slate that serves as the basis for assimilating diverse cultural narratives.

Standard Model

- The second assumption is that the imprinting of cultural narratives on this blank slate results in constructions of reality in diverse cultural contexts that are utterly different from each other.
- If these assumptions were correct, there would be no prospect of achieving the totally unprecedented level of good will and cooperation between peoples and governments required to resolve the environmental crisis.

The New Story About Humanity

- All normal human beings are born with virtually the same neuronal organization and with the innate capacities to acquire complex language systems.
- Born with virtually the same perceptual systems.
- This is apparent in fact that all human cultures have words for space, time, motion, speed, mental states, flora, fauna, weather, and logical connectives such as not, same, opposite, etc.

Lessons From the New Story

- This research suggests that we have the capacity to experience the other as oneself in spite of linguistic barriers and diverse religious beliefs and political ideologies.
- Research on the neuronal systems and processes associated with spontaneous moral behavior and decision making also suggests that the discourse we now use in the effort to resolve environmental problems is badly in need of revision.



The Normative Discourse

- This discourse features abstract quantitative descriptions of environmental problems, risk assessments and cost-benefit analyzes.
- This neuronal processes and pathways in this discourse are largely devoid of feedbacks from the limbic system associated with feelings of sympathy, empathy and compassion.
- This discourse effectively precludes the prospect of engaging in the implicit, automatic and pre-reflective human interactions that result in good will and shared understanding.

The Scientific Discourse

- This research also explains why most people are not motivated to take actions that could resolve environmental problems by scientific descriptions of these problems.
- If we are to resolve the environmental crisis, this will require the rapid development and widespread dissemination of narratives in both print and electronic media that describe the existing and projected impacts of deteriorating conditions in the biosphere on the lives of identified individuals with names and faces and with the full panoply of human needs and emotions.



