

Honouring Egypt



The Great Pyramids of Giza
over 4,500 years ago



Akhenaten and Nefertiti
3,350 years ago




The Evolving Scientific Mind through a Transdisciplinary Lens:

Perspectives from Postformal Psychology,
Integral Theory and Planetary Imaginaries

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“The significant problems we have cannot be solved at the same level of thinking with which we created them.”


Albert Einstein

Processes of Engaging Transdisciplinarity

Two angles on transdisciplinarity:

- 1) My own intuitive and pragmatic transdisciplinary approach of drawing on postformal psychology, integral theory and global/planetary studies

- 2) Meta-theorising my tacit knowledge using Nicolescu's transdisciplinary epistemology based on:
 - Complexity
 - Levels of reality
 - The included middle



Encountering Complexity



Evolution of Mind

Evolution of Consciousness

- ✿ The complexity of outer trends and global events requires complex, higher order ways of thinking, understanding and action.
- ✿ If we take a transdisciplinary perspective, we can find several bodies of research that identify and/or enact new patterns of thinking that can be cohered under the idea of evolution of consciousness (or the evolution of mind).
- ✿ The evolution of consciousness research can provide insight into the evolving scientific mind.

A Litany of 20th Century Knowledge Shifts

- the transition from Newtonian mechanical physics to Einstein's relativity and quantum physics;
- the transition from classical biology, including Darwin's theories of evolution to the new biologies, such as chaos and complexity theory, self-organisation and emergence;
- the philosophical transition from modernism to postmodern and poststructuralism;
- the transition from fragmented, reductionist thinking to integrated, holistic, thinking-feeling-action;
- the re-vitalisation and re-valuing of indigenous knowledge systems;
- the transition from disciplinary to multi-, inter-, transdisciplinary knowledge;
- the emergence of new rational discourses on spirituality not limited by religious doctrines;
- the transition from formal, factory-model school and university education to a plurality of postformal pedagogies;
- the transition from the dominance of nation-state politics to an emerging global imaginary
- the transition from emphasis on the past to awareness of the value of foresight/futures thinking.

Discourses Identifying Evolution of Mind and/or Culture

Three areas of academic research have pointed to the emergence of significant changes in how humans think:

- Postformal psychology
- Integral theory
- Global/planetary studies

Postformal Psychology

Since the 1970s adult developmental psychologists, especially in the USA have been researching the notion that there are several stages of reasoning beyond Piaget's "formal operations."

They identify such features as:

complexity, contextualisation, creativity, dialectics, dialogue, **integrality**, imagination, **paradoxical thinking**, pluralism, reflexivity, spirituality, values and wisdom

(Michael Commons, Suzanne Cooke-Greuter, Jan Sinnott and many more)



Integral Theory

Key integral theorists whose work I have drawn on:

Rudolf Steiner - integral evolution of consciousness

Sri Aurobindo - integral education

Jean Gebser - integral consciousness

Ken Wilber - integral operating system

And also:

Basarab Nicolescu - transdisciplinarity



Global Imaginary/Planetary Consciousness

Several 20th century thinkers have pointed to the emergence of planetary consciousness:


Teilhard de Chardin - planetization

Edgar Morin - the planetary era

Ashok Gangadean - planetary consciousness

And to the shift from the national to the global:

Manfred Steger - global imaginary



Evolving the Scientific Mind

If the human mind is evolving to think postformally, integrally, globally, how is the scientific mind evolving?

What might postformal science look like?

What might integral science look like?

What might planetary science look like?



Encountering Levels of Reality



Evolving the Scientific Mind




Adaequatio

- Plotinus (205-270 CE)

“The understanding of the knower must be adequate to the thing to be known.”

- Ernst Friedrich Schumacher, in *Guide to the Perplexed*, (1977, p. 39.)

Domains of Interest	Harman: Levels of Science [Bracketed points added by Gidley]	"Spheres" of Suess, Le Roy, Teilhard de Chardin, Florensky	Popper's 3 worlds	Popper's Cosmic Evolutionary Stages
Domain of spirit	Spiritual sciences [anthroposophy]	Pneumatosphere	World 3 (products of the human mind)	(6) Works of Art and Science
Domain of language, thinking, culture	Human sciences [psychology, anthropology, philosophy]	Noosphere	World 2 (the world of subjective experiences)	(5) Human Language, Theories of self/death
Domain of life	Life sciences [biology]	Biosphere		(4) Consciousness of self/death
Domain of physical	Physical sciences [physics, geology]	Geosphere	World 1 (the world of physical objects)	(3) Sentience (animal consciousness)
				(2) Living Organisms
				(1) Heavy Elements
				(0) Hydrogen, Helium



Encountering The Included Middle (Paradoxical Thinking)



Storying our Home in the Universe

Cosmology 1: Past - Pre-modern

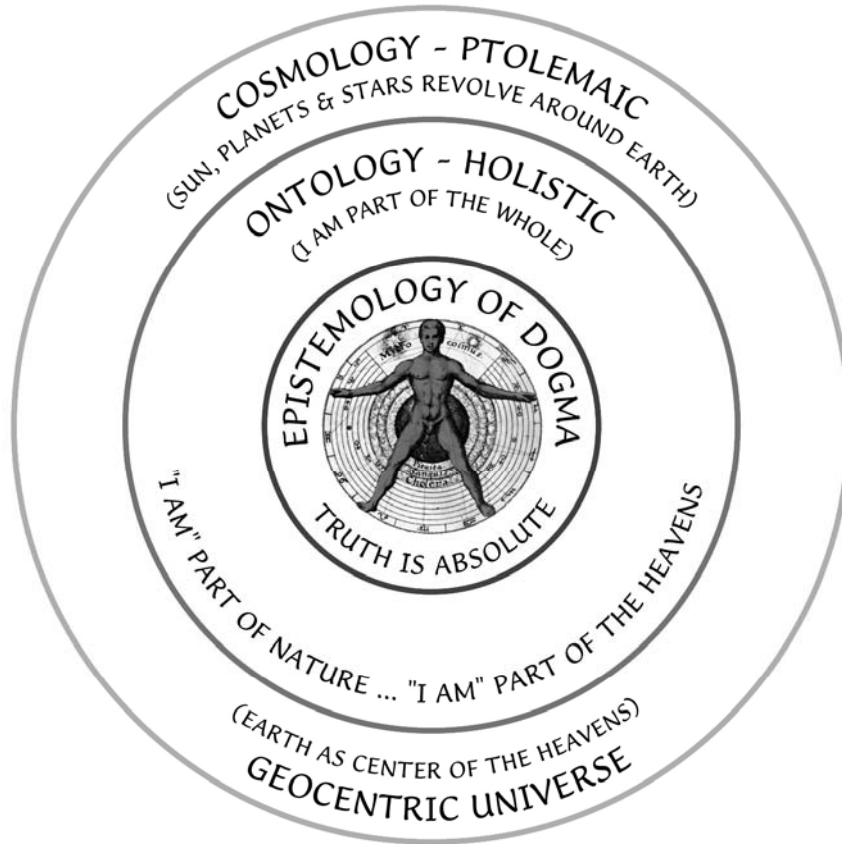
Humans at Home in the Universe

Unconscious

Unitive Knowledge

COSMOLOGY I

Past - Pre-Copernican, Pre-Rational



TYPE OF THINKING:

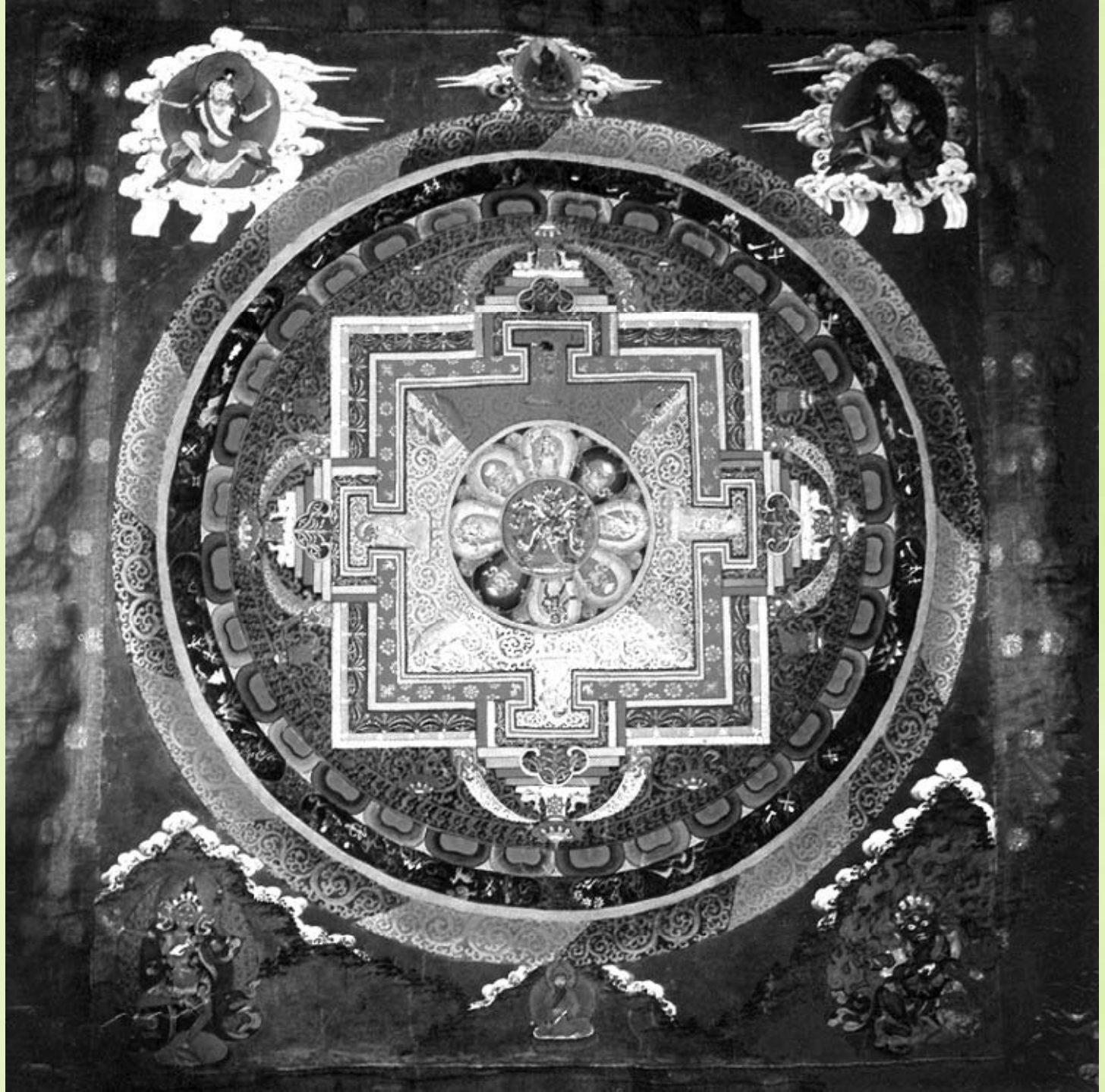
- Pre-Rational, Pre-Logical
- Pictorial, Sentient

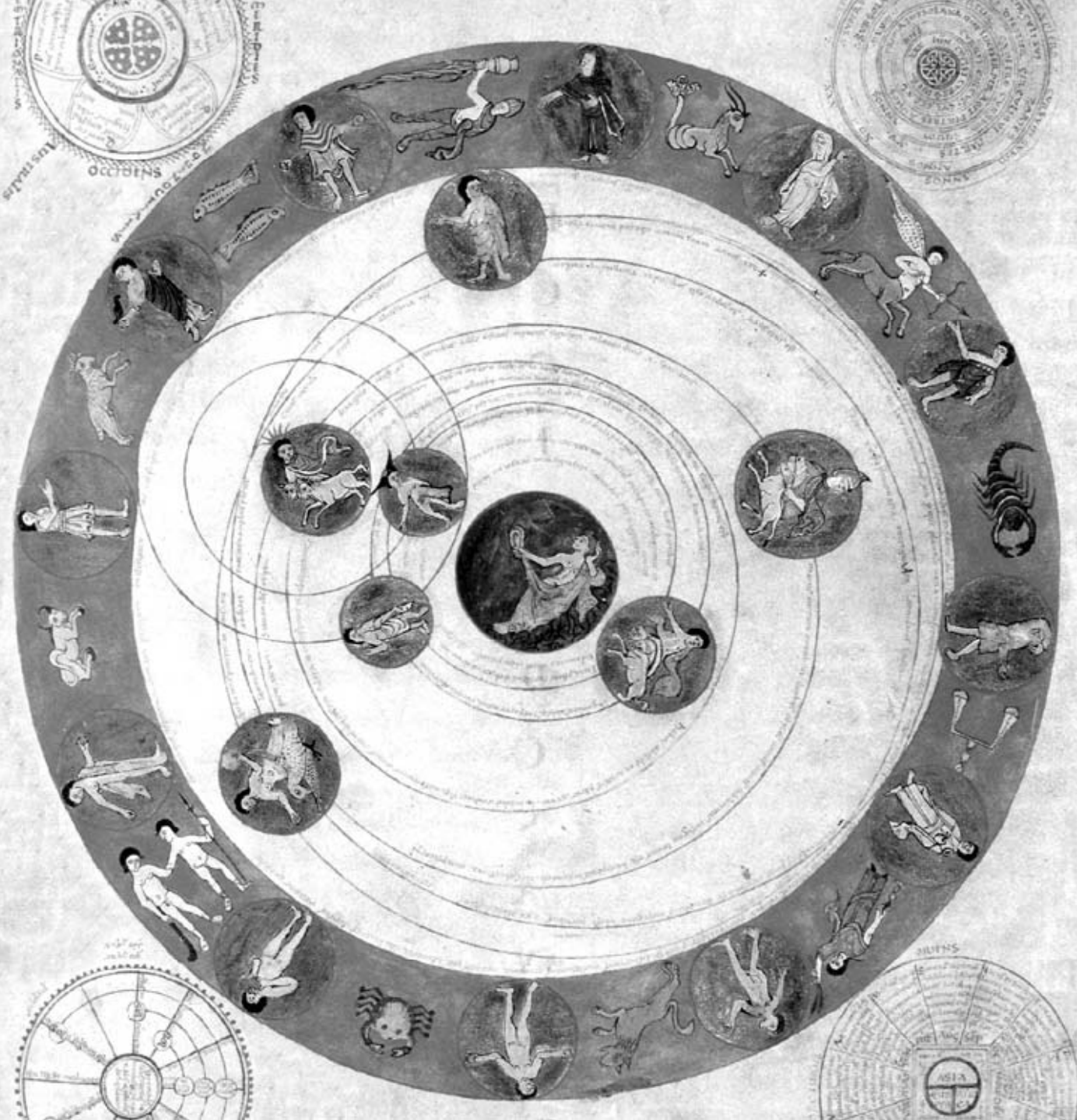
*Figure 5: The Human Being Within the Cosmic Womb
The Pre-Modern Condition*

The Pre-
modern Human
“Unconsciously
at Home in the
Universe”

Unitive
Cosmologies











Storying our Home in the Universe

Cosmology 2: Present - Modern

Humans thrown out of the Universe

Conscious Reasoning

Rationality

Formal Thinking - Binary Logic

Kantian Differentiation

COSMOLOGY II

Present - Copernican, Rational

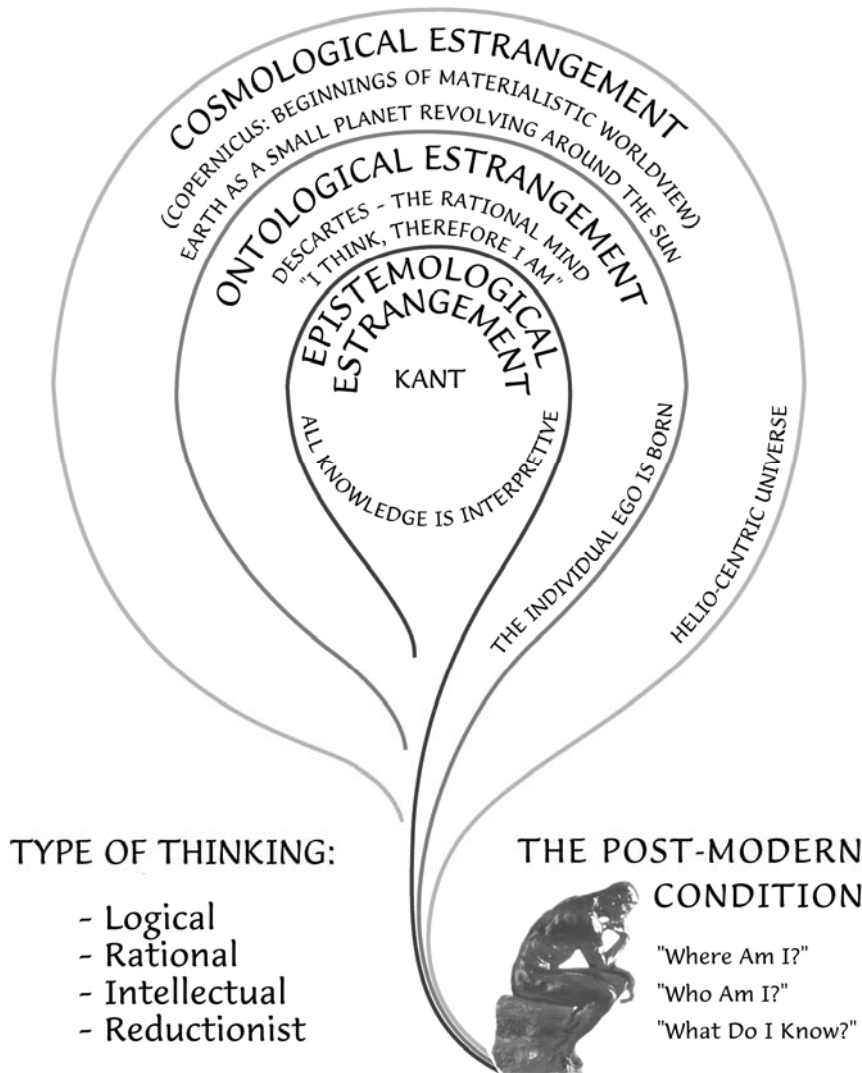


Figure 6: The Human Being,
Hurlled Out of the Cosmic Womb

The Modern
and
Deconstructive
Postmodern
Human

"I think,
therefore
I am"
Descartes

Estranged from
Nature and
Cosmos



Storying our Home in the Universe

Cosmology 3: Futures - Transmodern

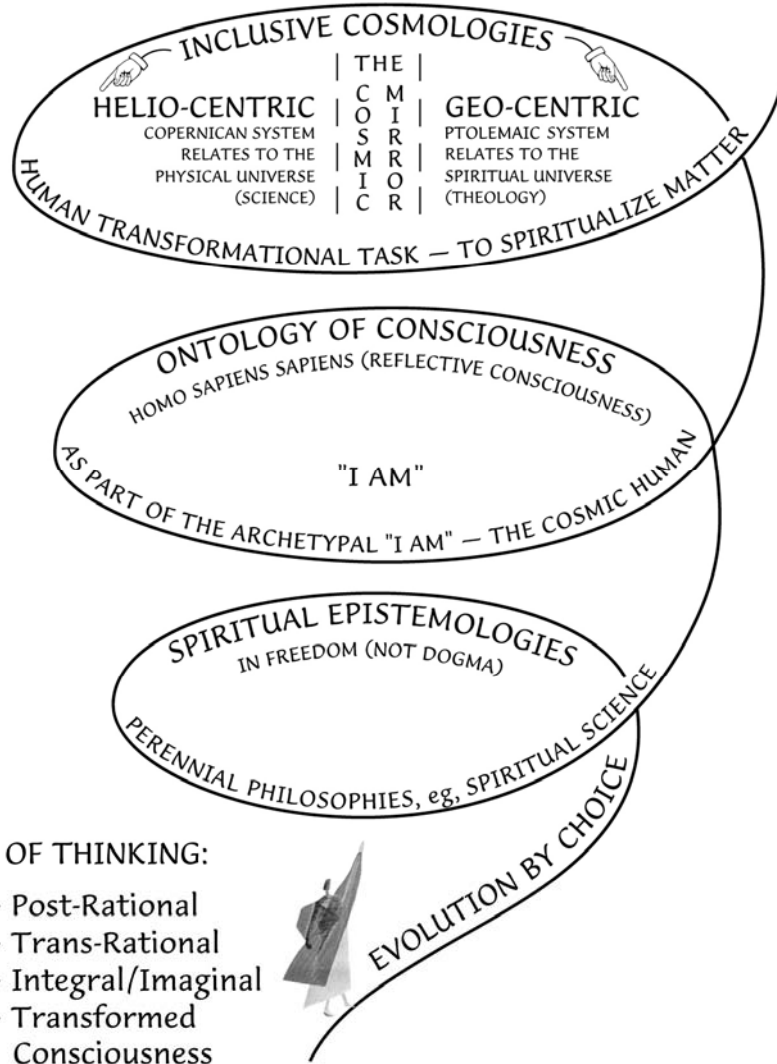
Humans “in Search of our (Lost) Home in the Universe”

Postformal, Integral, Planetary thinking

Re-Integrating Knowledge Content and Processes

COSMOLOGY III

Future - Trans-Rational, Integral



The Postformal
Integral
Planetary
Human

“I am, therefore I
create”

Consciously
evolving and
recreating our
connections with
Nature and
Cosmos

Figure 15: The human being steps in freedom up the ladder of Spiritual Epistemologies to a conscious ontology, reintegrating the cosmological schism between Science and Spirituality.

Cosmological Paradox

Heisenberg states:

[The] precision-oriented language of natural science tries to give its concepts objective meaning. But religious language (closer to that of poetry) must avoid this cleavage of the world into its objective and its subjective sides; for who would dare claim the objective side to be more real than the subjective?

Heisenberg also states:

In the astronomical universe, the earth is only a minute grain of dust in one of countless galactic systems, but for us it is the center of the universe—it really is the center.



Recreating our Home in the Universe

We need to re-integrate:

Mythic, Picture Thinking
(Science, religion and philosophy were integrated through art)

Rational, Formal Thinking
(Binary Logic, Kantian Differentiation, Disciplinary Knowledge)

Postformal, Integral, Planetary thinking
can re-integrate knowledge content and processes
(Complexity, Paradoxical thinking, Ethical values)

As above... so below...

