

Multiple Levels of the Science-Religion Dialogue

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Abstract

Modern psychological research on developmental stages of thought suggests that the dialogue between science and religion can be roughly parsed into several separate dialogues, each arising through a particular structure or manner of thinking. These structures, while developmental in origin, are found in persons of all ages. They have been studied intensively in the development of the individual, and have been tracked through historical epochs as well. In the language of Jean Piaget's developmental psychology, the first stage of importance is associated with the pre-operational thinking, in which religion is concerned with magic and animism. At this stage science does not exist. The next stage is characterized by concrete operations thinking. For the person at this stage religion emphasizes authority and facts, as reflected in statements concerning truth as well as moral thinking at this level. Typical issues concern the absolute authority of a holy book such as the bible, and the facts it contains. It might be argued that science does not authentically exist at this stage, but in so much as it does it represents facts on file: that is, what is true and what is not true. Abstract thought finally comes into play with formal operations thinking. Here, religion is discussed in terms of general principles, and belief systems are compared in a search for common principles of truth and morality. Science is in its own element with this form of thinking, where it is a search for reliable abstract relationships that undergird empirical reality. These relationships are ideally summarized in mathematical formalities. Beyond formal operations, postconventional thinking often takes on a systems orientation, seeking relationships among relationships. Examples in science include recent TOT theories, and in religion, spiritual and experiential descriptions that undergird and unite the human and cosmic orders. Examples of the above structures will be given in terms of individual development as well as in the histories of thought, art, and religion.

Dialogues between science and religion cannot usefully begin prior to concrete operations thinking, and even here amount to little more than competition between authorities. For example, debates about the theory of evolution and biblical creationism typically make no headway. Formal operations thinking, however, allows parallel abstract discussions about moral questions and truth issues from scientific and theological perspectives, but the two perspectives rarely connect. Each side simply states its own thinking based on different suppositions about truth. Postconventional thinking, on the other hand, opens the possibility of a true connection between the scientific and spiritual vantage points, each extending beyond itself to include something of the other. Thus, much modern spiritual thought includes the big bang and cosmic evolution within its purview, while many scientists are attempting to stretch their own disciplines to allow for larger and more spiritual views of the cosmos. This is seen, e.g., in contemporary discussions concerning the creative aspects of nature, and of the Anthropic Principle.

Key terms: Structures of consciousness, psychological development, moral conflicts.

Biography

Professor Allan Combs is a systems theorist, consciousness researcher, and neuropsychologist at the University of North Carolina at Asheville. He also holds appointments at the Saybrook Graduate School, The California Institute of Integral Studies, the Assisi Conferences, and the Graduate Institute of Connecticut, where he is the director of the Integral Studies program leading to an MA in Conscious Evolution. He is the author of over fifty articles, chapters, and books, including “Changing Visions: Human Cognitive Maps Past, Present, and Future”, with Ervin Laszlo, Vilmos Csanyi, and Robert Artigiani; “Chaos Theory in Psychology and the Life Sciences”, edited with Robin Robertson; “Nonlinear Dynamics in Human Behavior”, edited with William Sulis; “Synchronicity: Through the Eyes of Science, Myth, and the Trickster” with Mark Holland; “Mind in Time: The Dynamics of Thought, Reality, and Consciousness”, with Mark Germinie and Ben Geortzel; and “The Radiance of Being (2ed): Understanding the Grand Integral Vision; Living the Integral Live”, winner of the best-book award of the Scientific and Medical Network of the UK. Professor Combs is the co-founder of the Integral Foundation, The Society for Chaos Theory in Psychology and the Life Sciences, a member of The General Evolution Research Group, the Integral Institute, the Forge Guild and the one hundred member Club of Budapest. He is Editor of Integralis, Associate Editor of Dynamical Psychology, and the Administrative Director of the Human Change Project, sponsored by the Integral Institute. Allan is the winner of the 2002-2003 National Teaching Award of the Association of Graduate Liberal Studies Programs, and holds the Honorary Ruth and Leon Feldman Professorship at UNCA.

Structures of consciousness

Let me begin by introducing the idea of *structures of consciousness*, first articulated by the German poet and philosopher Jean Gebser (e.g., 1949/1986). Similar notions are found in recent works by Ken Wilber (e.g., 1981, 1998, 2000a) and Maik Hosang (2000), the writings of the late Rudolf Bahro (1994), and in the works of others, all of whom have been influenced by Gebser's thought. Beyond these, as seen in Table 1, there are a larger number of theorists whose work carries a family resemblance because they share a common and broad intellectual framework with Gebser. These include Jean Piaget's (Flavell, 1963) stages of cognitive development in the child and Robert Kegan's (1982, 1994) developmental structures of cognition and the self, as well as Cook-Greuter's (1999) model of the post-conventional developmental stages of the self. They include Laurence Kohlberg (1981) and Carol Gilligan's (1993) developmental stages of moral thinking. And they include Clare Graves' (1981) developmental theory of values, which forms the background for Jenny Wade's (1996) developmental theory of the personality and Beck and Cowan's social value memes in their popular model of *Spiral Dynamics* (1996). These theorists followed Gebser in seeing human personal and historical development as progressing through a series of stages of increasing competence, sophistication, and complexity. Gebser understood the highest levels of personal development to incorporate a kind of recapitulation as well as summing up of the major historical epochs through which our entire species has passed. At Gebser's highest, or *integral* stage of human development, which Hosang terms the *homo integralis*, the individual embodies all the earlier stages simultaneously. Modern psychological theories, by contrast, argue for several levels of "postconventional" development rather than a single "integral" structure of consciousness, but this difference does not detract from the ideas I will present here. To get us going, I will briefly review Gebser's structures of consciousness, beginning with the *integral structure*.

Early in the evolution of his thinking Gebser noticed what he came to understand as a new form, or *structure*, of consciousness emerging in the early years of the 20th century. It was appearing in many different contexts. For instance, it could be found in the art of Pablo Picasso, where figures were seen from several perspectives at once. It could be sensed in the poems of Rainer Maria Rilke, who reached past linear time and space into a kind of *atemporal* realm at once real and enchanted. It was apparent in the new physics created by Werner Heisenberg and others, in which the micro-level of the physical universe is characterized by an atemporal and quasi-spatial realm that undergirds the Newtonian world of solid objects and linear time. Gebser's principal work available in English translation, *The Ever-Present Origin*, explores in depth the emergence of this structure in areas as disparate as art, jurisprudence, physics, biology, and poetry.

In the fully developed integral consciousness the world takes on a concrete and immediate quality characteristic of the experience of living fully in the present. At the same time it is paradoxically suffused with a subtle spiritual light, which Gebser called the light of the *Origin*. The *Origin* is a term that Gebser used to refer to the original spiritual ground of all that is, a notion which was probably related to the Neoplatonic idea of the *One* (Combs, 2002). One might recognize in this structure something of the Buddhist notion of *satori*, and indeed such a

notion is verified in the personal correspondence between Gebser and the prominent Zen Buddhist philosopher D.T. Suzuki. Gebser termed this structure of consciousness *integral*, in part because it brings a multi-faceted experience of space and time, but also because it incorporates all the major structures that had apparently dominated humankind in the past. These include *archaic*, *magical*, *mythical*, and *mental* structures of consciousness. In the following paragraphs I will summarize Gebser's theory of these structures. The important thing is that they all continue to exist in us today, each playing its own part in our day-to-day experience as well as in the events of the world. As we will see, they enrich our lives in their own unique ways, while at the same time contributing to the difficulties that humankind faces in today's troubled world.

The oldest or *archaic structure* of consciousness represents a transitional experience from the pre-human, or animal, condition. Gebser did not write very much about this structure, believing it too distant to be very accessible to modern understanding. Recently, however, anthropologists have put considerable effort into illuminate the seminal pre-human mind (e.g., Mithen, 1996). Based on their work, a good guess is that the archaic structure of consciousness is represented by what today is termed *mimetic intelligence* (Donald, 1991, 2001). This is a prelinguistic mind that makes better use of personal memories than do animals but is not capable of reasoning or abstract thinking as we know these today. Cultural learning was carried forward through physical mimicry and ritual.

The first fully human form of consciousness is the *magical structure*, still strongly present in some societies and in many individuals. It is illustrated in the art of the great cave sanctuaries of southern Europe. Magical consciousness experiences all significant events as motivated by magical forces. Nature is filled with spirits, and virtually all natural events carry personal meaning. Space and time have not solidified in consciousness, and events that occur at different times and places interpenetrate, which is the basis of all magic. The shaman is the spiritual guide in the world of magic. Gebser took this world quite seriously, believing that each structure of consciousness carries within it a complete reality.

Each structure, however, continues to live on in human experience even after its time of ascendancy is past. Thus, magical consciousness exists today in music and romantic love, which have power to transport us beyond the ordinary boundaries of day to day experience. On the down side, it is at the root of psychological defense mechanisms such as repression, projection, reaction formation, obsessions, compulsions, and so on, as Freud himself pointed out. Beyond this, too much reliance on magical consciousness limits our effectiveness as citizens of the troubled and complex world in which we live (e.g., Beck & Cowan, 1996; Wilber, 2000a, 2000b). At its worst, magical consciousness can cause people to lose themselves into mindless collective identities, as did so many people in the totalitarian regimes of the first half of the 20th century (Fromm, 1941).

Less virulent but nonetheless problematic are simple magical notions such as the idea that troubles in the world must work out for the best because God would not have it otherwise. Such thinking distracts from effective social and political action desperately needed today. On a similar note, the idea that spiritual practices such as meditation or prayer can, without action in the world, produce significant real-world changes is another magical notion, one that is

paralyzing and nonproductive. The Dalai Lama (1999) recently warned that “change only takes place through action, not through meditation and prayer.” If, however, meditation and prayer are used to open us to clearer understandings of ourselves and the world, our action is made more effective. After many years of political activism that included the building of the *Green Movement* in Europe, Rudolf Bahro (1994) came to believe that a personal meditation practice provides an important foundation for practical action. He found that meditation “serves the most political purpose conceivable today, of liberation from ego-perspective and self-will, and liberation for rescuing action, for building the culture anew, and for the transformation of institutions” (p. 212).

Returning to our review of the structures of consciousness, we note that historically the dominance of the magical structure of consciousness was gradually overtaken by the *mythical structure*, which understands the world in terms of grand narratives or *myths*. Some of these are familiar to us as the mythic tales of the ancient world, stories of the great gods and goddesses of the sky and earth. We see mythical consciousness at play in today’s religions as well. Mythic consciousness tends to emphasize conflicts between grand polarities, such as the battles between good and evil stressed in the Christian and Muslim religions. Tales of paradisiacal afterlives fall into this category as well, as do stories of anthropomorphic gods or goddesses. The mythical structure is of special importance to today’s world because the mythical beliefs still held by many people stand directly in the path of effective action in an increasingly complex and stressed world. Attempting to optimize one’s own chances of entering an imagined paradisiacal afterlife instead of acting to optimize the conditions of this world is not very helpful. Engaging in conflicts motivated by mythical inspirations instead of engaging in useful social action is destructive to a social environment in which cooperation is desperately needed. For instance, the policy held by a many religiously motivated US politicians to withhold funding for family planning that might involve any kind of abortion is in direct conflict with the urgent needs of an overpopulated planet. Thus, while it is true that each structure of consciousness represents a fully adequate world in its own right, today’s complex realities beg for a perspective that can see beyond the limits of any single structure.¹ It begs for an integral perspective that can only come from integral consciousness itself.

It is difficult to assign dates to the rise and fall of each structure of consciousness as dominant motifs in human experience, but without doubt the *mental structure* was coming into ascendance by the fifth century BC, when Parmenides could say *to gar auto noein estin to kai einai* (“thinking and being are one and the same”). With the full emergence of the mental structure of consciousness the thinking process itself became conscious, and mental reasoning became the most authoritative way of understanding reality. In its original form the mental structure was characterized by its capacity for *menos*, balanced thought as seen in the dialogues of Plato. Later, during the Renaissance, it transformed into modern *perspectival consciousness*, in which the individual experiences himself as an isolated point at the center of an ever-widening and more alienating world. This ultimately led to *ratio*, by which Gebser meant the divisive hair-splitting reasoning that causes so many problems in today’s world. Thus, while the mental structure of consciousness is vastly more capable than the magical or mythical structures when it comes to dealing with the complex issues that must be addressed if we are to save our planet from social and ecological devastation, it is also prone to take hold of a particular point of view and gnaw at it like a dog with a bone until nothing useful is

accomplished. This tendency is all too common in postmodern and deconstructionist thinkers, who seem paralyzed by their own cleverness.

What is worse, the mental structure often enlists itself in the service of magical or mythical elements in the personality, so that all of its reasoning powers are used to promote some favored social or religious doctrine that may be in abject contradiction with reality. This temptation is strong because mythical narratives breath meaning into our lives in the form of ideals and archetypes (e.g., Jung, 1939) which are put into the service of traditional belief systems, sometimes without regard to the practical needs of the real world.

Oil and water

Though Gebser himself opposed the ranking of structures of consciousness into “better,” “worse,” “inferior,” “superior,” and the like, one cannot overlook the fact that many cultures and subcultures are dominated by one or another of these structures. When they interact with each other they sometimes mix like oil and water—and virtually all cultures and subcultures interact with each other in today’s world. Consider the animosity between “traditional” subcultures dominated by religious narratives—especially those with fundamentalist religions that interpret these narratives literally—and the “modern” world, dominated by the mental structure. In today’s complex and interconnected society these interpenetrate creating social and personal conflict and the values implicit in contrasting structures of consciousness come into dissonance with each other (e.g., Bahro, 1994; Wilber, 2000b). Often, life in a culture dominated by one structure does not prepare people to live in or even interact with another. For instance, life in traditional religious communities such as the Amish of the U.S. can be fulfilling, but does not prepare young people to deal with the intricate and rapidly changing social and technological realities of an emerging global culture (e.g., Kegan, 1994), that require a well developed mental structure.

The problems come when decisions must be made that affect the regional or global community, which includes representatives of different structures of consciousness. What on the surface may appear to be a political disagreement, on probing turns out to be a conflict of values that in turn arise from different structures of consciousness. Such conflicts are very difficult to resolve because adequate resolutions need to take into account the perspectives of more than one structure at once. For example, solutions to pressing global issues that are proposed by mental consciousness may be entirely unsatisfactory to mythically oriented social groups, and vice versa. Consider, for instance, the following propositions. Each makes perfect sense to many people who operate primarily in the mental structure. After each, however, is a contrary reply from the mythic structure of consciousness.

- Unchecked population growth should be curbed by vigorous family planning programs. Such programs might include voluntary sterilization and early-term abortions.
- *Child bearing is both a right and obligation. Conception is a holy act between husband and wife, and would not be subject to planning. What is more, sterilization and abortion are sins against God.*

- All human beings, men, women, and children, are entitled to basic human rights and medical care.
- *Religious and cultural traditions specify the roles and obligations of men, women, and children. There are no other “rights.”*
- Women are entitled to the same legal, financial, and political rights as men.
- *Ditto the above.*
- All children are entitled to an education that incorporates the most current findings of modern science.
- *Children should be taught traditional values and beliefs. Modern science may be opposed to these and cannot be trusted.*

Here we see how each of these “mental” statements is opposed by cultural factions who find them in opposition to their own religio-mythic narratives. In the face of such perspectives “rational” discussion is often futile, and can even spark episodes of violence when one faction draws up laws and enforces them on the other. In first-world countries it is usually the mental faction that holds greatest power, but in second and third world countries this is often not the case. And even in countries such as the US and Israel, long-time rational powers, there is an alarming rise of mythical fundamentalist religious influences even at the level of national and international policy and leadership.

Science and religion.

Science is the unique product of the mental structure of consciousness, especially the perspectival mental structure that first developed with the Renaissance and found full abstract expression in the Enlightenment. In Newton’s perspectival conscience space and time became linear and scalar, “observation” became measurement, and measurement became the systematic assignment of numerical values. Explanations became causal, and causality became logic. We are all intimately familiar with this mode of thinking because we are steeped in it; all educated people in today’s world are trained in to think and see the world in this way. The architects of the Renaissance such as Tycho Brahe, Galileo Galilei, Rene Descartes, and Isaac Newton, gave birth to a penetrating, powerful, and enormously successful form of knowledge acquisition creation known as *modern science*. It is indeed true that the ancient Greeks, as well as certain non-Western cultures, had independently invented their own forms of science, sometimes with impressive effects, but none matched the particular combination of careful observation, measurement, mathematical and logical thought, and cumulative knowledge that was created in the Enlightenment and led straight down in a continuous stream to modern quantum physics, electronic computers, and Mars landings. Neither mythic consciousness with its search for right answers based on grand cosmic epics, nor magic consciousness with its innocent submergence in the richness of the emotional and sensory world of nature, could produce anything like modern science. Lest we become too heady about the impressive accomplishments of science, however, it is well to remind ourselves that the experience of human meaning flows from both

the great mythic as well as personal narratives in our lives, in other words the stories that give our lives their contexts and richness, and much that adds zest to our lives is magical, even in the modern world. Without these we find ourselves in an existential desert trying to decide again each morning whether to commit suicide, or go ahead and get out of bed and have some coffee. It is not a pretty picture.

But returning to the matter at hand—science and religion—the point I would like to make from all this is that questions tend to come from one or another structure of consciousness, and their answers usually come from the same structure. Questions about the meaning of life come from the mythic structure, and are answered from it in terms of religious mythic narratives if not personal mythic stories. We seek meaning in the large stories of humankind and its position in the cosmos as well as in the smaller stories of what our own individual lives are about: our struggles, our rewards, and our achievements. Beyond this, it has been suggested by more than one philosopher and psychologist that the search for meaning cannot find its final fulfillment even in personal narratives alone, but requires a greater spiritual context. In a similar vein, logical and scientific questions can only be adequately addressed by logical or scientific answers. One cannot find the meaning of life in the Periodic Table.

This line of thinking might suggest that we ought to leave moral issues, for example, to mythoreligious thought, and scientific questions to logical thinking. This works pretty well in traditional societies where rules of conduct and the meaning of one's life is determined by customary answers that are not questioned by its members. Tribal societies, where you can find them, still seem to get along well, and even isolated pockets of traditional folks such as the Amish of Ohio and Pennsylvania seem enviable in their absence of existential angst. Unfortunately, there are few locations left in the world that are isolated from the internet, the lure of McDonald's hamburgers, or *Bay Watch*. Cultures around the globe are mixed together in a kind of global media Cuisinart. Even before the current sweep of globalization, however, new technologies from the printing press to the automobile, from birth control pills to the telephone and internet, have turned traditional values topsy-turvy. This is a well-known story. The result is a world too complex to realistically conceptualize or effectively deal with in magical or mythical terms, but requires the highest order of cognitive processing that one can muster. But it is not a matter of simply seeking logical answers to every question. As noted above, logical answers are inadequate to many of the most essential enigmas of human life.

The result of all this complexity in our social and technological environments is that important issues get caught between two or more structures at once. When this happens, solutions offered from one structure seem irrelevant, or worse, when seen from other structures. For example Darwin's theory of evolution and its more recent incarnations as neo-Darwinism and sociobiology are products of the mental structure of consciousness working at full throttle. The evidence in favor of biological evolution, at least painted in broad strokes, is as uncontestable as is the evidence for the laws of thermodynamics, but it is widely challenged because it runs directly counter to the mythic notion of *creationism*. Rational debate slides off creationists like water off a duck because they are operating in a structure of consciousness in which reason is not the final authority. On the other hand, romantic and emotional appeals to scientists, or half-baked efforts at beating them at their own game by flashing pictures of the recently unearthed Noah's arch on a mountainside in Iraq have yet to win over many scientists. The notion of

intelligent design is perhaps the most hopeful effort at a resolution of the whole matter, because it honors the scientific evidence while tipping its hat to a yet unknown divine principle in nature. It is left up to the reader to decide if this principle is evidence of an Old Testament God, the Buddhist Creative Void, the Tao, or some self-organizing process still unfathomed. Reconciliatory approaches to theology and science such as Mathew Fox's (1988) *creation theology* and Thomas Berry (1998, 1999) and Brian Swimme's (1985) "Universe Story" (1994) emphasize the divine creativity of the cosmos and the internal subjectivity of its life, as moves toward celebrating and honoring the scientific story of the universe in theological contexts. Deep ecology makes a similar appeal. All these approaches look to mend the rift between the mental and mythic answers to the origin of the universe and humankind's place within it.

Similar analyses can be useful for shedding light on other seemingly intractable issues, some of which are less complex. For instance, should flag-burning be criminalized? Well, the flag, like apple pie, is a kind of magical emblem of America and all that it stands for. Burning it is a bit like poking pins in a Voodoo doll. In a world of magic such acts can be very disturbing if not downright destructive. On the mythic level the flag is a *symbol* of America and what it stands for. To burn it is an act of disrespect, repugnant to those who honor it. At the mental rational level the flag is a piece of cloth, and the principal consequence of burning it is a bit of air pollution and possibly some wasted money.

Similar but more important questions concern the embryonic origins of human life in relationship to research using embryonic stem cells, as well as contests over "women's rights" as opposed to the "right to life" perspective. Let us consider the first of these. I am told that a notable Christian moralist recently stated that to take an embryonic cell is immoral and wrong, and thus no matter what you do with it, or what the long-term consequences in terms of life-saving medicine, etc., might be, the outcome is wrong as well. Such a statement represents magical thinking, reminiscent of the ancient notion that if the king is morally compromised then the whole kingdom will suffer. King Oedipus, unknowingly sleeping with his mother, brought blights to the local farms and a plague to the whole city. From a mental perspective, however, again the matter is straight forward. The embryo is hardly a human being by any thing other than genetic criteria, and its use for research seems unproblematic. Why should anyone object?

The abortion issue is runs along similar lines but is more complex. The mental approach is to decide just when a prenatal embryo or infant becomes fully human, with all the rights that come with that status. From a purely logical perspective the decision is nominal, an arbitrary call. This, with nothing but logic to guide the decision, it is possible that people may elect very late term abortions, which is beginning to feel like murder. A purely magical approach, however, is not very helpful either, because it tends to mindlessly latch onto a particular point of view and cling to it adamantly and without reason or compromise. It has been said that those most inflexibly opposed to any kind of abortion are also the most likely folks to support the death penalty. This may or may not be true, but it would not be entirely surprising, because the magical structure tends to seek clan justice of the "eye for an eye" variety, rather than mythic compassion or rational fairness. Indeed, perhaps mythic compassion is the only hope of sorting out the abortion conundrum. But mythic thinking often tends to slide back into collusion with

magical consciousness resulting in a dogmatic and mindless “escape from freedom” (Fromm, 1941) into a collective mentality at the lowest octave.

The Catholic Church did not recant its 1616 edict against the Copernican doctrine that the Earth goes around the sun until 1992, and still actively opposes family planning. In the U.S., large numbers of citizens continue to dispute the seemingly undeniable fact of biological evolution. Indeed, anti-evolution rhetoric is on the rise in many quarters, and the mythical “religious right” has combined forces with self-serving reactionary elements in the political arena to create a downright frightening situation, one in which the traditionally rational U.S. government, born out of the thinking of the Enlightenment, has become the obstructionist bully of the world on issues ranging from ecology and human rights to arms control. Certainly, an argument can be made that all this is driven from behind by financial and political self-interest, as well as by fear of attacks by terrorists, but its success at the poles is in significant part due to the mythic-religious and magic-nationalist rhetoric of politicians.

References

Bahro, R. (1994). *Avoiding social and ecological disaster: The politics of world transformation*. Bath, UK: Gateway Books.

Beck, D., & Cowan, C. (1996). *Spiral dynamics: Managing values, leadership, and change*. Cambridge, MA: Blackwell.

Berry, T. (1999). *The great work: Our way into the future*. New York: Bell Tower.

Berry, T. (1988). *The dream of the earth*. San Francisco: Sierra Club Books.

Berry, T., & Swimme, B. (1994). *The universe story*. San Francisco: HarperSanfrancisco.

Combs, A. (2002). *The radiance of being: The grand integral vision; Living the integral life*. St. Paul, MN: Paragon House.

Cook-Greuter, S. (1999). *Postautonomous ego development: A study of its nature and measurement*. Harvard University: A doctoral dissertation. [Available from the author: Cookgsu@aol.com]

Dalai Lama. (December 8th; 1999). Comments at the *Parliament of the World's Religions*. Capetown, Africa.

Donald, M.D. (1991). *Origins of the modern mind*. Cambridge, MA: Harvard University Press.

Donald, M.D. (2001). *A mind so rare: The evolution of human consciousness*. New York: W.W. Norton.

Flavell, J. H. (1963). *The developmental psychology of Jean Piaget*. New York: Van Nostrand.

Fox, M. (1988). *The coming of the cosmic Christ: The healing of Mother Earth and the birth of a global renaissance*. San Francisco: Harper & Row.

Fromm, E. (1941). *Escape from freedom*. New York: Farrar & Rinehart.

Gebser, J. (1949/1986). *The ever-present Origin*. (N. Barstad and A. Mickunas, Trans.). Athens, Ohio: Ohio University Press.

Gilligan, C. (1993). *In a different voice: Psychological theory and women's development*. Cambridge, MA: Harvard University Press.

Graves, C. (May 20, 1981). *Summary statement: The emergent, cyclical, double-helix model of the adult human biopsychosocial systems*. Unpublished paper. Boston.

Hosang, M. (2000). *Der integral mensch: Homo sapiens integralis*. Verlag Hinder + Deelmann, Gladenbach (Hessen).

Jung, C.G. (1939). *Conscious, unconscious, and individuation*. CW 9, i, 489-524.

Kegan, R. (1982). *The evolving self: Problem and process in human development*. Cambridge, MA: Harvard University Press.

Kegan, R. (1994). *In over our heads: The mental demands of modern times*. Cambridge, MA: Harvard University Press.

Kohlberg, L. (1981). *Essays on moral development (Vol.1)*. San Francisco: Harper & Row.

Mithen, S. (1996). *The prehistory of the mind: The cognitive origins of art, religion and science*. New York: Thames and Hudson.

Swimme, B. (1985). *The universe is a green dragon: A cosmic creation story*. Santa Fe, NM: Bear.

Wade, J. (1996). *Changes of mind: A holonomic theory of the evolution of consciousness*. Albany, NY: State University of New York.

Wilber, K. (1981). *Up from Eden*. New York: Doubleday/Anchor.

Wilber, K. (1998). *Integral psychology*. Boston: Shambhala.

Wilber, K. (2000a). *Sex, ecology, spirituality: The spirit of evolution; 2nd ed.* Boston: Shambhala.

Wilber, K. (2000b). *A theory of everything: An integral vision for business, politics, science and spirituality*. Boston: Shambhala.

Table 1. An approximate comparison of developmental stages.

Gebser's Structures	Piaget	Kohlberg	Kegan	Beck & Cowen	Wade
Integral		Universal principles	Postformal interindividual	Yellow	Authentic
Mental	Formal operational	Social contract	Formal institutional Interpersonal	Green Orange	Achievement or affiliative
Mythic	Concrete operational	Authority orientation Conformity	Imperial	Blue Red	Conformist Egocentric
Magic	Pre-operational	Native hedonism	Impulsive	Purple	Naïve
Archaic	Sensory-motor	Pain avoidance	Incorporative	Beige	Reactive

ⁱ Also see Robert Kegan's book, *In Over Our Heads*, that articulates this notion powerfully in terms of psychological development.