

**Symbolic Representation:
Creation of Knowledge as an
Ancient Universal
Adaptation
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Abstract

Symbolic representation (SR) is a semiotic system that allows for effective communication of knowledge and information among people. It existed in all tangible forms of prehistory, including paintings, glyphs, proto-language, buildings, monuments, henges, pottery, ornaments, and tapestry. Our ancestors used SR to eventually evolve a regime of cultural control, social bonding, engineering, and power structure. While much effort as to conclusive dating of SR artifacts and identification of their creators has produced meaningful sources of new detail, no comprehensive exploration of either a descriptive or normative cognitive evolution to the overall creation, process, and purpose of SR exists.

This paper investigates the provenance, process, and process of cognitive awareness, discovery, adoption, and practical application of SR among our Mesolithic, Neolithic, and early Bronze Age ancestors. This examination has uncovered a new model of understanding to the phenomenon and supports the existence of a universal high-level domain of holism, resourcefulness, inspiration, and motivation from nature and the cosmos that existed among ancient cultures worldwide. Furthermore, because the transformation of cognitivity from Upper Mesolithic into modern times was not causal of one “eureka” change event at a single moment-in-time, the SR phenomenon was constructed and operated from a transformative feedback loop of a changing attitude and behavior syndrome over millennia and whose driving factors included genetic evolution, psycho-social, environmental, ecological, and reproductive developmental habituation influences. These factors were seminal to its growth and success. Considering this domain structure, I offer a concluding discussion to introduce questions that are intended to be thought provoking and serve as a call to further research into securing an even more comprehensive knowledge base to the provenance of symbolic representation.

Introduction

Key concepts: Cognitivity, symbolic representation, attitude-behavior, feedback loop mechanism, control, power, cultural time bias, egalitarian-to-totalitarian,

The homo sapien-sapien has achieved an accelerated pace of cognitive advancement in the current 70,000 years, more than at any other time in its history. The emergence of the modern human mind, in conjunction with a new enlightened awareness to the notion of self and increasing control over his environment and existence drove the maturation of the human brain to have evolved an exponentially increasing knowledge domain and skill set. Influences on this maturation process included genetic, psycho-social, ecological, and reproductive developmental habituation growth processes.

The Pleistocene and Holocene periods comprise the activity time frame to which humankind selected for the biological capability to obtain and store ever-increasing amounts of knowledge and raise awareness of the dynamic natures of environmental changes on our planet for humankind to evolve a process of untapped potential, and control over his environment.

A human being acquires knowledge and learns by observing nature and his conscious environment in a situation. The person develops an attitude from which a behavior set is molded and applied as a conclusion to this situation. This process embodies a continuous feedback loop mechanism. New attitudes and behaviors are formed and are continually mutable throughout the person's life.

He can also learn by obtaining knowledge from other beings. One skill set humankind acquired early in this current 70-millennia age was that of communicating ideas, information, and memories with one another. Acquisition of this knowledge domain and skill set was expedited by the development of a toolkit highly efficacious to this advancement. The toolkit developed to serve this function was that of symbolic representation.

Symbolic representation (SR) was created in prehistoric times to transfer ideas and perceptions from a user to a recipient. Thinking points to remember when reflecting upon the concepts presented in this paper include the notion that 'we are our ancestors-and they are us.' We are anatomically identical in important neurological areas of anatomy, cognition, and behavior. A proxy argument which contains reasonable support is to infer that ancient humankind's fluid and dynamic cycle of sensory stimulation and the transmission of attitude development into the behavior-response mechanism is the same as modern man on many levels. Humankind is governed by this process of attitude-behavior. It is driven as a continual feedback loop throughout millions of lifetime cycles.

There is a profound inherent cognitive thought process designed into this symbology. Ancestral homo sapien-sapien possessed, within the Upper Mesolithic time frame, the entire anatomy necessary with which to create an awareness of self, mind, and symbolic representation

in correlation to man's best knowledge. This homeostasis of human culture was not achieved because of one single eureka, "big bang event, but as an entire series of cultural sparks that occur...at different parts of the world between 60,000 and 30,000 years ago" (Mithen, 1996, p. 152). This homeostasis was incrementally achieved when humankind's awareness of higher measures of control and power over his environment was kindled and driven to become hard-wired into his genetic phenotype. A symbolic culture of representations created the neural network pathway from the functionality of the executive brain system of functional subsystems that would not otherwise exist (Donald, 2001, p. 200).

Adoption of symbolic representation as a tool further advanced this evolution. It allows for cognitive learning, memory, and re-learning through the exchange of information, and concepts with others. Symbolic representation was synergized, in part, by the development of the larger human brain. The apparatus necessary for this process mechanism to mature was comprised of an expansive larger frontal neo-cortex brain region that increased perception, the storage, and transfer of exponentially more sensory stimulations. This mechanism was the conduit for creation of an enlarged neuro-network of cognitive functionalities to store this expanded information warehouse into more memories to be stored for later retrieval. Archaeological discoveries tell us that the cranial size of the homo sapien-sapien skull has been relatively stable for hundreds of thousands of years. Consensus then holds that the brain size has also remained like the modern era. With the same relative brain size humankind developed the capability to expand his cognitive sharpness in this time.

An early known symbolic representation was found on the South Coast of South Africa at the Blombos Cave site. The Blombos drawing contains a series of geometric figures (hashtags as we know them today and other similar kinds). The earliest known symbolic figure was determined as 64,000 years ago by uranium-thorium dating. The painting is of a lifeform in nature, that of a bovine creature found in Cáceres, Spain. It embodies a representational awareness of the thinking abstract mind on a "first level" dimension, without any inherent, implied, additional, or metaphorical second-level or tripartite meanings. The panel does not tell a story; no other symbols or figures are contained within the scene. But the critical thinking mind who created the SR was consciously aware and motivated enough to communicate the existence of this creature at this location to others. Perhaps it was scripted as a marker identifying this as the location of a food source for other nomadic groups, a place for food processing, an instruction set, or maybe for aesthetic enjoyment. Any of these possibilities define the inherent nature of a knowledge transfer with others. Cáceres also portrays a consciousness of mind; an awareness of self and of others who support the purpose of SR. New discoveries may redate this provenance. This example, of many, suggests that the anatomical cognitive apparatus was present to allow for the growth of the stimulus-response feedback mechanism that gave homo sapien-sapien the capability to practice and evolve SR.

The mind's agency to become consciously aware of such highly sophisticated concepts as control over his material sensory world has a known provenance dated to about 44,000 years ago. The discovery of a cave painting at the Lubang Jeriji Saléh site in Borneo, Indonesia depicts the earliest known hunting scene introducing human anthropomorphs. Whereas the Cáceres

painting is descriptive in form, the Indonesia painting is an enriched story with both descriptive and emotive themes. This serves as a prototype of a second-level dual interpretative form of SR. Because the evolution of SR was influenced by the recursive attitude-behavior feedback loop mechanism, the heightened consciousness of changing attitudinal cues created by the stimulus-response cognitive mind and influenced by the dynamic informational inputs of his sensory environments, manufactured the associated behaviors. Countless iterations later, what has emerged was the brain, the mind, and cognition of modern humankind. This episodic active-static process is individualized for every person in his or her reproductive development to what Zeder called a 'habituation process' of human growth and learning development (2009). Symbolically representative cultures are driven to where, "the potential for directed change in cultural systems is greatly, perhaps even exponentially, enhanced over that found in biological systems by the human ability to evaluate outcomes of behavior and to abandon, adjust, or perpetuate behaviors based on this evaluation" (Zeder, 2009).

Throughout the Upper Mesolithic era, dynamics of natural selection, ecology, geology, geography, and reproduction development unique, habituation cults regulated the maturation of SR in worldwide civilizations to which archaeological and anthropological research was still in the infancy of discovery. This gave the mind of the then hunter-gatherer millennia to grow the neuropsychology attitude-behavior methodology of power and control over his environment. Traditions in Upper Mesolithic Middle Europe embodied the highly advanced concepts of urban living and funerary ceremonies dating back 35,000 years ago. The end of the Ice Age, about 12,000 years ago, became the delineation point to the origins of the Neolithic period. From the time of this geological/ecological transformation into the Younger Dryas periods, the human mind developed a selected attitude-behavior modification to extend its growing sense of self-image and awareness to a relationship with the visible conscious world in what Jacques Cauvin called, 'psycho-cultural changes' (Cauvin, 2000). Discoveries dated to this time include the uncovering of multivariate interpretative "art" forms with dual, metaphorical, and even tripartite meaning, in conjunction with a nurtured concept of urbanized existence. This cognition of duality and multivariate meaning will recur to play a seminal role in later growth of an ethos for the human species; a duality principle of "right vs. wrong" in the worldview of a moral compass. This will be just one duality of many that will come to govern man's philosophical advancement. Along this logic semiology progression, simple cave 'art' was replaced by more sophisticated formats, including trinkets, seals, ornaments, amulets, pottery, relief carvings, monoliths, totems, and architecture in Middle Europe and Southwest Asia. These expressions were new recursive symbolic forms of "external symbolic storage" (Donald, 1998, p. 184). This process appears in external material cultures worldwide (Coward & Gamble, 2008).

This new urban existence drove the creation of new infrastructures for social cognition, order, and cohabitation. A new paradigm of "social life in close quarters" was shaped and naturally selected to phenotype a hard-wired nature to man's social brain and notion-of-self (Barton & Dunbar, 1997).

Symbolic representation of the social brain shows the anthromorphology from a wild animal-in-control motif to man-coexist with-animal, to man-in-control over the animal. The

dimensions of power, control and social agency are metaphorically built into this depiction. Hodder (1990) describes this progression in terms of the *agrios* (the wild); more specifically death and the wild in relation to the ordered (p. 11), the *domus* (the home dwelling), and the *foris* (the door). Maturation of our species was achieved when we drove from initial awareness of the *agrios*, to interacting with it, then learning to dominate and exert power over it or to separate from it (the *domus*). Later creation of the *foris* became the mechanism of reentry into the *agrios* when needed or desired.

These principles of control and power over nature extended into the urbanized landscape. With these new formulations, growth of a new type of 'intrinsic value' became another transformational activity from the Mesolithic to the Neolithic. Hodder (1990) describes these concepts in that "power is a function of value. It is the intrinsic idea of the object, not the external object itself, which confers power" (p. 281).

Hodder's suggestions about intrinsic and extrinsic valuation are valuable but they lack an awareness to a second interpretation. Sometimes the external value of power was realistically depicted in these symbolic illustrations of the dangerous animal or another imposing physical object itself and not just an intrinsic cognitive abstraction. This technique was what weaved a significant portion of the fabric that was humankind's great challenge, namely to wrestle control over his environment during the Meso-Neolithic period. The stress and fear emotive over these powerful and dangerous objects were themselves what caused much of the attitude-behavior syndrome in these situations and shaped the lifestyle of the urban human.

The emergence of the Neolithic social mind represents a philosophical shift from the egalitarian sociopolitical platform practiced by hunter-gatherers. Egalitarianism, as evidenced in the hunter-gatherer archaeological record, did not recognize power and control. Neolithic's saw an encroachment of power cognitivity in a sociopolitical shift from egalitarianism to totalitarianism. This was the cause and effect of urbanization, more complex social structures, creation of the concept of resource ownership, and an increased competitive nature. In addition, a newly created form of within-species social competition manifested the increased emotional and physiological tensions populations experienced when confronted with these situations (Rossano, 2009, p. 5).

Cycles of events that occurred in their daily lives continually influenced and forced the creation of a new attitude-behavior mindset on the individual level. This mechanism shaped our 'reactive-proactive' psychology to changing environments. Creation of an associative SR was influenced not only by this new social culture among individuals, but also by the communities' own group social cultures, geography, environment, and the unique domain of social engineering policies enacted by authorities.

An opportunistic domain of control and mastery over his environment (a first attitude-behavior feedback loop) became the product of the new Neolithic urbanized mind which created awareness. Similarly, climate ecology and geography created a rationale and cognitive reasoning to observe and strategize animal migration pattern changes, planting and cultivation, food storage infrastructure; and, finally, the ability to recognize that by providing animals desired living

conditions and food they can domesticate and herd them for future use. The mind's positive feedback strategy compelled transformation of small, genetic family groups into larger, non-genetically related villages and into ever larger communities. A division of labor ideology was created based on the genius talents of individuals in that community, as well as a gender-based criterium.

If an inspection of the most existential pursuits to maintaining prehistorical human life concludes that food acquisition and fertility were the two most dynamic activities (as they are today), then a gender-based criterium was necessary. According to Leroi-Gourhan, "thus it would seem that gender specialization [of the type argued here] is rooted in physiological characteristics" (1993, p. 153). Among the salient factors to this notion are the inherent aggressivity of males, and the female's anatomical framework. This selected the male for assignment of the hunting routine and the female for birth and habituation of children combined with non-animal food acquisition due to constraints imposed upon the assignment of offspring rearing.

The next big revolution of the mind was a conceptual creation of the permanent structure, first for creation of ritual cults, then of residences uncovered in the Near East record, especially in Catalhoyük, (Mellaart, 1967), and Gobekli Tepe, Nevali Cori, and Karahan Tepe (Schmidt, 2012). Thus, with urbanization, conceptual economies of scale were fabricated on many dimensions suggested by psychologist Abraham Maslow in his *Hierarchy of Needs Theory* (Maslow, 1943).

A cyclic nature is embedded within the pre-history attitude-behavior pathway and built onto the tapestry of a culture shaping, modifying, and massaging it into a mutable context of worldview, lifestyle, and social cultures. Each change in behavior led to changing conditions in society. Its symbology supports humankind's successful mastery over man's natural environments.

The effective development of a larger brain relied upon the genetics of the human, i.e. "turning on" dormant gene sequences. the ecological theatre in which he exists, and social reproductive growth factors of "being human." The latter suggests the presence of the unique human habituation process from birth to adulthood. This preface of how the mind's cognitivity and consciousness grew from its origins into a sophisticated SR culture continues with a detailed view from a descriptive methodology and inspection of a sample scene from early Bronze Age Egypt.

Methodology

What describes the big picture of SR? To understand its realm and impact an historical framework to the provenance, adoption, and practice buildout of SR is in order. This road was long, divergent, and transformative in ensuring the survival of today's *us*.

A significant catalyst causal to his creation of symbology was the natural selection of humankind's brain's neo-frontal cortex region. When applied to an attitude-behavior mechanism our sensory organs direct a stimuli event through this cerebral region to where the information is processed, stored to a memory storage neuro-warehouse; and, if necessary, continues through the network pathway for additional processing of an interpretive attitude and knowledge development. Critical thinking about the event ensues to where an explicit behavior event awaits at the end of this iteration. The attitude-behavior regime is feedback loop that every being repeats countless times in one's life. The knowledge acquired can also be used to acquire additional knowledge about one's environment. The human mind can create attitude-behavior regimes that can be unpredictable and are shaped by the record of a person's life experiences, social cultures, worldviews, environment, geography and events. No doubt countless changes, because this dynamic is mutable, have occurred in the mind of humankind between the Neolithic and today. A most beneficial methodology is to adopt a communication mechanism with other beings. The tool that homo sapien-sapien selected for symbolic representation.

Symbolic representation was the tool which became a practice of all human cultures in ancient times. Symbolic representation transfers meaning and communication. Merlin Donald (1991) suggested the function of three adaptations of the cognitive pathway as add-ons that drove the human mind to today's state of homeostasis. According to Donald (1991) those systems were: mimetic culture (p. 162), verbal language (p. 201), and a theoretic culture made possible by a fuller utilization of the brain's frontal neocortex apparatus for external symbolic storage, which led to creation of an alphanumeric writing tool (p. 269). I identify use of this tool as the third step in a three-step cognitive communication pathway, the one additional cognitive circuit needed beyond the two-step ideology that the mind uses for other SRs, like glyphs, trinkets, buildings, and monuments. The two-step process brain interprets the stimulus as an idea, then directly scripts the SR without cognitively diverting to establish a linguistic syntax third step that enables that form of communication. The human physiology and cerebral apparatus molded the attitude-behavior continuum of SR by first adopting the two-step ideology process. The later linguistics, both verbal and written, completed the invention of transformational knowledge and meaning system development. Symbolic representation in early Neolithic times was achieved in this two-step ideology mechanism because the prehistoric human brain always held the capacity to do so. It melded the mind, spirit, and body together to drive social evolutions. This form of communication was socially constructed and directed de facto. As the communication conduit that bonded social, material, and eschatological cultures, SR was enabling for the newly self-aware mindful human to exert conscious measures of power and control over himself, his natural environments, and other people.

A quick inspection of the worldwide pictorial archaeological record shows a continuum that supports these theories. Among the oldest known morphologic drawing representations found, in addition to the Blombos Cave, Cáceres and Borneo panels, as noted, were created at the Apollo 11 Cave in Africa about 25,000 years ago; Kimberely, Australia about 17,500 years ago; the Caverna de Pedra Pintada in Oklahoma about 9,000 years ago; and at Cueva de las Manos in Patagonia, South America about 7,500 years ago. Note that all these examples except Patagonia, and with special distinction, the Borneo panels, depict only animal figures. The underlying motif

in these “animals only” depictions is contextual only within a rigid first-level observe-and-draw framework. No additional cognitive, metaphorical, or linguistic ideological meaning is reflective from an analysis. The creators drew what they observed. Within this singular domain, while they are themselves SR, they lack any resonance of a dual or tripartite meaning of a power and control consciousness motif that is present in Patagonia and especially Borneo. Borneo is extraordinarily appealing because of its age, theorized to be 44,000 years old or more. We know from the statistical trend line that this first global iteration of SR technology advancement was not invented in a single eureka event. Different civilizations came upon their unique creation thousands of years apart.

The Patagonia and Borneo panels are extraordinary in that they illustrate reasoned and proliferate use of human morph figures in a story-like symbolic representation. Analysis of a similar trend line in the Patagonia and Borneo panels is suggestive of a highly advanced awareness-of-self, and consciousness to a confidence of power and control over his environment. There is a reasoned story being told in these panels with the use of metaphoric, spatial, navigational, and social information and critical thought throughout. An analysis and inspection of the dataset for the dual and tripartite global iterations of SR advancement infers a correlative trend line. The appearance of more sophisticated motifs defines a matured state-of-mind to portray both dual (metaphorical) and multivariate (multiple metaphorical and/or dual) representations. This also suggests that no single global eureka event drove this growth, it was instead, “a multiple, fluid episodes of regional cultural adoption over thousands of years” (Childe, 1954, p. 70).

By the time the Neolithic urbanization framework was realized, the propensity toward social behavior became neurologically hardwired into the homo sapien-sapien anatomy. Symbolic representation exists within ancient architecture, artifacts, written and inscribed symbols, text, language, ritual ceremonies, structures, and so on. It is intrinsically metaphoric in nature, the essence of its existence.

The kaleidoscope of human evolution in the SR realm also grew into a supernatural culture. Watkins posits that a worldview, “involving religious ideas, an ideology, a cosmology and some infectious physical symbolic representations developed rapidly and spread contagiously” (Watkins, 2005, p. 84). While Watkins (2005) is unsure of a definitive provenance to this notion, he attributes the growing awareness of ‘oppositions’ in the late Mesolithic existence to this emerging worldview (p. 87). This version of a ‘duality’ concept is supported to be recurring through history to where a transformation of a mind pattern in the direction of creation of a supernatural culture appeared to have been gradual. The cognitivism of the supernatural cult defines another duality of nature, the natural and typical vs. the *super* natural with extraordinary powers. The minds that created this had numerous natural blueprints with which to adopt the transformative attitude-behavior pattern. Inherent within this cognitivism was a judgmental nature to which the duality of right vs. wrong was mindfully assigned to the competitors in the argument. Good vs. evil was processed as right vs. wrong. Other dualities include yin and yang, right vs. left, light vs. dark, and up vs. down, to name a few. Nature’s objects were resplendent with examples that the newly conscious mind of the time utilized as

attitude cues to develop the representative behaviors and the resulting symbolism. A supernatural being could do more things than a natural one. The manifestation of a supernatural became more desirable and wanting to be mimicked. To be associated with a supernatural gave the user the attitude of feeling and being powerful.

This mindset can also be attributed to the animal deity concept. Mesolithic and early Neolithic man already had the stress psychology associated with dangerous wild animals hardwired into his existence resulting from many ages of experiences. Because the said animal subject was deemed to be wild and powerful, a category of supernatural cult could be reasoned from an inspection of the ancient record of symbolic representations. The absence of human figures in the Blombos panel, located in a cave in South Africa, represents the lack of possessing a supernatural trait, the lack of human confidence to want to depict man together with the wild animal, it is known that sixty-four-thousand years ago other sophisticated symbolic representations existed that depict a mindset of sophisticated reasoning, such as funerary cults, axe tips, bone carvings, and trinkets. It was only in the Indonesia panel 20,000 years later that a confidence motif became visible. Humans were then illustrated with the confidence to successfully interact in wild animal episodes. Is it feasible that at that time, in that geography, the mind had possessed a rudimentary attitude-behavior psychology of power and control over an animal's presence? This presence of an awareness cognitivity, is at least apparent.

No evidence exists claiming humans of that period possessed a language, written or verbal, that included use of identification tags, such as names for group members. From temporal evidence uncovered in various caves and glyph panels around the world there was a universal mindset that attributed metaphoric identification markers to various members of a hunting group. Examples include the use of animal heads in anthropomorphs and other animal adornments in Native America, Aboriginal Australia, and others. This means there was an assignment of metaphorical identity and a delineation as to what role different members of the group were assigned. The animal metaphoric assignment was based on behavioral characteristics that were present in the human and animal subjects. If the human exhibited a personality trait of power, for example, an ecologically local animal metaphor would be assigned to that person's identity. A bear or ram was used in Native America. In ancient Egypt, the inventory of power animals included the crocodile, boar, eagle, falcon, and many more. Consequently, the Egyptian documented record contains countless attributions of animals to deities and god/goddesses based on the power characteristic. The SR obsession with predatory animals in this manner is another early Neolithic characteristic that appeared on paneled inscriptions worldwide. The identification characteristic assignment could, of course, be substituted with other biological metaphorical traits. This was the case as illustrated throughout ancient history.

Another ancient characteristic of identity assignment involved the use of role assignment based on talent, intelligence, or expertise. Any hunt may have been planned to utilize members in separate roles based on what efficacious qualities the individual could bring to the activity. A Mesolithic hunt, as early as Indonesia, depicts the group using orientation elements including size, spatial and adornment characteristics. Many early Neolithic hunting scenes have been found displaying similar patterns, including at Çatalhöyük, dated to 9,000 years ago.

Transformations like these in the late Mesolithic and Neolithic periods were product of an increasing web of entanglement to the existence of these elements of the ‘social man’ psychology. A logical extension to the theory that “the web of social relationships is produced through dependences and dependencies between humans-to-non-humans and non-humans-to-humans,” can reasonably infer to include “dependences and dependencies between humans and other humans” (Hodder, 2012, p. 268). These social factors created the necessity to form a new framework of communication between people and a means to transfer embedded knowledge and meaning. The catalyst needed to prove the truth and functionality of this theoretical framework was the invention of SR.

From the perspective of the creators and users in situ, the social process; the dynamic of attitudinal and behavioral growth and change over the years in a society constructs, resurrects and repopulates meaning and knowledge. Hodder supports the notion that concepts are categorized from within a framework of observation. Hodder’s example of “death,” “the wild” and “the ordered” states of nature (1990, p. 11) can infer a wider comprehensive creator-user interface that operates by the following mechanism:

The observer is cued by sensory stimulation. The mind, being hardwired to categorize and compartmentalize meaning, takes the new stimuli, recalls associated data, inserts it into his analysis and births an attitude. Finally, the creator creates a story and a cultural behavior regime with which to share this knowledge.

Emerging Neolithic humankind was not in complete control over his environment; therefore, the emotional attitudes of stress, conflict, fear, and fight-or-flight were real manifestations that needed to be addressed. Lastly, the embedded pedagogy dictated that an apparatus be created that could impart this knowledge onto others, including inter-generational users. Symbolic representation became that apparatus.

Symbolic representation enabled the formation of the ritual cult whose pedagogy included mimesis, a process where knowledge is redundantly communicated by the user to the recipient using SR’s pathway to experiential learning. The mimetic ritual activity in humans involved the invention of intentional representations, the attitude-behavior mechanism. It incorporated both mimicry and imitation and added a representational dimension to both. The presence of an audience completed the purpose of social communication (Donald, 1991, p. 169). This process allowed for reinforcing long-term memory learning. Small group hunter-gatherer cultures then established a proto-symbolism and mythology as a pedagogical routine after the mimicry cognition process had developed. Mythic integration was contingent on symbolic invention and deployment of a more efficient symbol-making apparatus. (Donald, 1991, p. 268) Symbolism facilitated adoption and practice of the myth as the myths existed before the means to communicate them. Donald suggested that “before visual symbols could be invented, the modeling intellect had to perceive a need for them...symbolic invention is generally driven by the demands of mental modeling” (1991, p. 278).

The concept of a ritual model was an opportunistic strategy by an authoritative figure to reinforce his power, control, and efficacy of social engineering as a highly effective form of

cohesive glue. Rituals were social bonding exercises compelled by royalty to assume and consume power and control over a society. If the ritual activity somehow lost its appeal and/or efficacy to successful societal endpoints or did not produce the desired objectives, whether sociopolitical, economic, or spiritual, the public's perception of that authority would change; the changed public attitude would produce a modified behavior perception. This entire principle was causal to the Neolithic urbanization of people and defined a modification of the socio-political landscape from egalitarian (hunter-gatherers) to a totalitarian (royalty controlled) society.

These characteristics drove cognitive evolutions in early modern cultures and whose procedure followed this pathway. An even older example of mindful cognition is exemplified by the learning mechanism of mimicry, noted earlier. That behavior was used as a hunting strategy and was itself ritualistic in nature. Today's animal kingdom, as a surrogate, exhibits countless examples of the utilization of mimicry as a ritual exercise for activities of food acquisition, competitive displays of authority, bellicose attitude-behavior episodes, or ceremony cults. Maturation of this process led to the development of specific social cults for this purpose and was enriched by the creation of SR and then, eventually, language. (Donald, 1991, p. 197).

Symbolic representation is triggered from either a new observation attitude-behavior model or a new iteration of an existing one. In this regime, an object of cognitive interest is detected, attitudinal cues are interpreted, and a correlative association made possible for the creation of a symbolic representation. The object must contain features with enough alluring sensory stimulation and cognitive appeal to activate the mind's recording and memory apparatus. The object, as the 'natural resource' is mined and then cognitively fabricated through to manufacture the symbol representation. Finally, the operative practices of social culture define and reshape all contextual values. This adds substance to Hodder's argument that in addition to the symbolic (structures) of representation being cognitively organized and manipulated, that are localized, changing, often conflicting and reproducible by local social practices, the object must originally be discoverable and suitable for use to start the attitude-behavior pathway (Hodder, 1990, p. 13).

It is suggested that the visual perception of an object is deconstructed and reconstructed by our brain in a patterned way. This object imagery is neuronal but strongly constrained by encultured practices and traditions (Zeki, 1999). I add to this thesis by suggesting that, while there may be constraint parameters present in some encultured scenarios, a similar opportunistic endpoint of learning and enhanced transfer of knowledge is also possible, proven by the nature and practice of SR itself. This class of perceptions has been manifested by the creation of countless examples of universal symbolism from disparate civilizations worldwide. This is evidence that the human brain contains a cognitivity that is not influenced solely by, or in conjunction with, environmental conditions. This cognitive pathway is central to the construction of everyday meaning and is also used for reasoning, thinking and understanding the person's environment (Fauconnier, 1994).

Here, one of the most recognizable subjects in nature will be used for an explanation of this schema. The night sky was visible to our ancestors as an unsurpassed sensory discovery and evolved to embody the most expansive social meaning of human life on Earth in its own

universal social contexts. This cosmic theatre is still there in the same form and frame of reference as is sensed today. Our cultural mindsets have placed surprisingly similar contextual meanings onto the same subject matter, though our perspective is often far more contextually empirical in nature than similarly from our ancient brethren. Perhaps a synergistic connection that supports a homeostasis of thought between our ancients and ourselves is reflected in Plato's quote from the *Timaeus*, (Plato, in Beck, 2006, p. 79) as he yearns for us to:

See the revolutions of intelligence in the heavens and use their untroubled course to guide the troubled revolutions in our own understanding, which we are akin to them; and so, by learning what they are and how to calculate them accurately according to their nature, correct the disorder in our own revolutions by the standard of the invariability of those of god.

These ties that bind offer a parallel reflexology between our ancestors and ourselves and support the notion that 'we are them and they are us.'

It is from this sample cosmological subject that an investigation into the origins of the symbolic representations which explain the attitude-behavior syndrome in ancient Egypt is undertaken here.

If one adopts the notion that 'we are them and they are us,' then the concept of ritual, as an ingredient for understanding the universe of ritual behavior. This concept can be effectively studied by interfacing modern man with our Neolithic ancestors. Ritual was a natural response to anxiety (Xygalatas, 2022, pg. 71). The more tense and severe the existential threat, the more acute "out-of-control" attitudes formed that led to a higher incidence of deity appeal methodology and ritual function.

According to Xygalatas (2022), when the barrier was removed through iterations of attitude-behavior, the tension was also removed and social equilibrium was restored, all of which are learned (p. 17) and part of human nature (p. 20). The ritual culture largely embodies the dynamics of individual consciousness. Merlin Donald (2001) correlates the habituation characteristic of SR with the development of the "executive brain." This is a lifelong recursive attitude-behavior dynamic that is neurologically circuitous to all other brain subsystems that are required for SR to function and flourish.

A factor to the growth of ritual behavior was a manifestation of the early urbanized man fight-or-flight neuropsychology. Ritual behavior became a cognitive connection to a confrontation with a threat. If man did not know the most empirical methodology in which to survive the threat, he created an alternate regime by connecting its presence to enactment of an activity that, was temporally followed by its deflection or eradication. If the result was successful, the ritualized mind reasoned that the attribution cause-to-the-effect was the conduct of the ritual activity. Symbolic representation was the toolkit which drove the continued success of the ritual activity and its possession was an opportunity for exploitation by royal authority. Inherent within the practice of SR was a realization by the authority that knowledge and cognitivity can be exploited as tools themselves, as well as development of a ceremonial worship activity, all of which can be exploited to exert social control. Knowledge was power (and is

thought of as power today). Symbolic representation was also power if it was controllable as a means of communicating all this cognition to others.

Another means of exploitation used by authorities was in knowing the psychology inherent in the human reaction to the severity of a life threat. The higher the severity of the threat, the more out-of-control society would become. The public looked to, and the authority was aware that in order to defeat the threat, they needed to uncover the answer that would physically end the threat. Threats can come from other people, in a war, or from nature in many forms. The ritual activity of prayer, sacrifice, and other appeals to a deified manifestation was perceived as successful if the activity led to an end to the threat after a time. When successful, the ritual cult would continue to be undertaken. Social order and engineering were achieved from public adoption of cooperation, the competitive natures of empowerment and governance, and life purpose transformations of the community. This process included the rigidity and recursive nature of the ritual ceremony process which is practiced by society today. This regime, as an acute social function, leads to an increased orderly life (Xygalatas, 2022, p. 81). It has been achieved in both societies (we are them and they are us). The community, by comparison, obtained access to social bonding, order and protection not necessarily available to hunter-gatherers, and a means to personal fulfillment. The public was compelled, and in many cases required, to attend the regular ritual ceremonies that honored their royalty, both alive and passed. When those environments created potential catastrophic existential barriers, the use of SR as applied to the ritual culture helped alleviate the tensions caused by those catastrophes. Ritual was a causally transparent foundation for evolving social cognition, allowing humans to align their minds with social conventions... These systems of coordinated thought and memory allowed humans to function as a single organism (Xygalatas, 2022, p. 6).

A strategy that became predominant to the exploitation of SR within the ritual design framework was to synergize proficiency of the practice mechanism with a “hook” of attraction toward an intended audience. The cognitive creation of the mnemonics of objects and their applications to power, control, and ritual was an SR achievement that continues in today’s mind. Merlin Donald (1993) called this phenomenon “external symbolic storage.” The objects themselves, as symbolic representations of either true depictions in nature, metaphorical associations, and/or multivariate representations, served as a mode of communication, pedagogy, and as mnemonic devices (the symbolic storage). The continued presence and opportunity to view these objects reinforced the viewer’s memory of the knowledge and meaning, many generations after its creator(s) had since passed. This sequence, combined with the ritual cult, fabricated a formidable means of learning, social bonding, and social engineering through SR. To those in authority knowledge was power.

Some ancient societies permitted public inspection of many temple adornments. Egyptian royalty, however, did not permit the public to observe as much of the magnificent SR adornment that adorned their temples. In this way social psychology was easier to engineer than through a ‘threat management’ doctrine, despite its existence in all ancient cultures.

A progressive manifestation of this semiotic system development can be evidenced in the Egypt template. Two examples which embody these authority characteristics include: the old

kingdom pyramid dynasty and the rise and fall of the King Akhenaten regime. The early dynastic kingships of Sneferu, Khufu, Djedefre, Khafre and Menkaure were obvious regimes inherent with all the ritualistic traits: competitiveness, social bonding, public confidence, increased morale, and the engineering psychology (both social and scientific/industrial) utilized to drive the success of all these dominions. The course of King Akhenaten's rise and fall from royalty, and the subsequent cultural and physical eradication of all symbolic representations of the monarch demonstrates the threat management phenomenon, though with mutinous undertones.

A natural phenomenon which has mesmerized the conscious mind throughout history and that could be referenced to this exploitation was an obsessive curiosity about the sky above. All ancient civilizations held the cosmos 'object' as the most important natural phenomenon to their existence. Outer space inspired our ancestor's critical thinking, and life purpose philosophies and encouraged the newly emerging mind to create new patterns and perspectives about an expansive meaning of life, and an eschatology of eternal life, in most profound ways. The sensory stimulation encountered when one looks up at a light-filled universal expanse is both neurologically vivifying and so transformative as to encouraging one to animate a seemingly religious experience. The neurological apparatus that exists in everyone allowed for the formation of patterns to the cosmos, objects (constellations, the moon, sun, planets, comets) within a larger object (the entire sky), if you will. Iterations of the attitude-behavior syndrome eventually grew a catalogue of these SR objects. When those who were already established in power roles obtained the knowledge with which to construct a semiotic *language* of symbolic representation, a ritual cult, and a means to drive an efficacious outcome to social life issues and to support ongoing traditions, a power and control structure became reality. Those in authority retained and reinforced their dominion over society in this exercise.

One additional microcosmic feature within the prehistoric SR theatre was the notion of sacred geographies. Symbolic representation exists at all ancient cultural geographies. Inherent within the canon ascribed to many of these civilizations is supreme ethical governance of a highly holistic, eschatological, spiritual, cosmic, materialistic but at the same time, orderly existence. Egypt is known for a resplendent and acutely rigid manifestation of these traits. The longevity and awe-inspiring magnificence of this culture is quintessentially portrayed by the knowledge they painstakingly communicated to their descendants through the toolkit of SR.

The Egyptian pharaonic and royalty temples, for example, depict a principally eschatological SR context, but which also is acknowledged to broadcast a lavish adornment to the power people of the time. The use of SR in the hieroglyph inscriptions and at all ritual festivals were prime examples of this concept. The architectural style, geographical location, and spatial orientation of buildings within that geography in this SR provided a method of social engineering, learning and cultural bonding and was reinforced by holding regular, and recurring ritual activities. Ancient Egyptian society also exemplified the existential nature of our species to a cognition and practice of social bonding and cultural conventions.

Having developed a theoretical basis for the provenance and appearance of SR among our species, a methodological example can be introduced that supports this theory. Many such examples exist in the ancient record. Here is an inspection of data from one sample.

One feature that is evidential in all ancient civilizations is the redundancy of the ritual phenomenon and its representative semiotics. This is borne out by an examination of one of these snapshot samples. I spent an extensive amount of time studying the Egypt Temple of Hathor complex at Edfu; including the Dendera crypt. The basement consists of many rooms containing ceremonial objects, created with SR memes, and used by middle and later dynasties. The uncovered statues, amulets, sculptures, talismans, and artifacts are symbolic references to a practice of 'external material culture' as suggested by Colin Renfrew, former director of the McDonald Institute of Archaeological Research, to an understanding of ancient culture that can be gained from the storage and transmission of knowledge, ideas and concepts built into the objects (Donald, 1998).

Adjacent to the storage warehouse are two rooms, identified as r C and G, that contain six main panels of storied symbolic representation. These panels and their associated texts share the redundancy and rigidity features that Xygalatas (2022) describes for the ritual phenomenon. The panels all tell of the same ceremonial story in slightly different scenes, to be interpreted like acts in a contemporary play, though they were created over 3,500 years ago. Recurring themes in these portrayals include life celebration, earthly death, eschatology, and the journey of the soul to the judgement decision and eternal afterlife. The protagonist is Harsomtus, son of Hathor the sky goddess, and to whom the entire temple complex at Edfu is dedicated.

All the symbols and figures in the Dendera C and G panels contain cultural information and are metaphorically assigned learning memes identifying specific attributions. This is an advancement from the depictions at Mesolithic Chauvet cave paintings of bovines and deer of 36,000 years ago. Each figure on the C and G panels was symbolically representative of metaphorical dual and even multivariate attributes. For example, in an earlier work, *The Dendera Light Theory: A Refutation*, the "container" which appears in all six panels, described, according to popular culture theorists, as an elongated light bulb was refuted to be known as a visual representation of our Milky Way galactic center in the direction of the Sagittarius constellation (Seland, 2024). The science and methodology of SR was far advanced in the Bronze Age, Egypt. But a metaphorical symbolism also existed in Upper Mesolithic Central Europe, Early Neolithic Southwest Asia, and other geographies as well.

The panel considered within this inspection is identified as C-1. The Dendera crypt panel rooms are examples of a popular recurring theme of creation, life, death, burial, and the eschatology of the soul which were vital and profoundly represented in global civilizations, including Egypt. The existence of Middle Kingdom Egypt is emphasized in this inspection and illustrates a Bronze Age chronology closer to our date today than to early Neolithic brethren.

There is a multi-level redundancy feature present in the other five panels comprising the remainder of the C and all the G rooms. Similar theoretical attitude-behavior syndrome support that nodes exist in these other panels. A recurring ritual exists where attitude cues depict the social bonding behaviors desired by the authorities. A description of the C-1 panel's contents is next.

This author's earlier paper on the Dendera light theory refutation, identified many areas of contention of which arguments over symbolic representations have been framed for decades. A significant debate suggested a disregard for the inscribed hieroglyphs obviously present and surrounding the panel's core story, or its semiotic illustration. As the true nature of hieroglyph science dictates, these symbols themselves embody a pedagogy full of meaning that, by their presence, transfers knowledge to the viewer. This SR is in the form of an alphabetic linguistic with detailed letters and syntax. Use of the hieroglyphic "letters" in this way can offer more precisely defined meaning with higher flexibility to each letter in a collective sense. These cartouches, in conjunction with the panel imagery, are graphic examples of today's concept of 'photograph and caption.'

The contents within the illustration itself was the protagonist in the refutation argument of the Dendera Light theory. Ten object segments were analyzed and reinterpreted to infer a more accurate and comprehensive synergy with the associated inscription glyphs. A description of these ten objects is illustrated in Figure 1. Inferences from each object and associations of dual and multivariate interpretations are developed from a micro perspective and their connectivity to the framework of the creators' SR cognitivism process are presented. An additional interpretation from a macro perspective is also examined.



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Figure 1

Object 1: The Bulb: While it may appear that the contesting interpretations of the bulb are depicting an electric light, the body of a sky goddess, the reproductive system of the goddess Nut, and even the sun god Ra constituting a multivariate nature of SR, the most efficacious explanation is that of a dual level assignment. The Egyptian record shows countless examples of a dualistic motif. One part takes the illustration of the real natural object on the first level, and the other takes a metaphorical attribution. The bulb shows, as the first of a possible dual attribution, a substantial size and is easily the single largest object in the entire panel. This artistic trait depicts a protagonist viewpoint, the importance of which is effectively illustrated here. The largest object in their universe (and ours) was the night sky and was obviously the most consciously stimulating phenomenon in their lives. This galactic landscape spans our entire visual peripheral from terrestrial horizon to horizon. An artist, whether ancestral or modern-day, purposely identifies the largest structural element in an illustration as a protagonist, without whose presence eliminates the meaning of the story. Therefore, the most accurate depiction is that of the cosmos.

The second dual attribution could reasonably define a human identity metaphor. This is one example of the highly sophisticated nature of Egyptian semiotic representation.

To assist in identifying the second dual attribution, a description of the strategic analysis methodology that is required in studies of this nature is warranted here. Ancient worldwide glyph panels must be investigated by studying and correlating the contents of the entire panel. Stories here are being communicated for others to transfer meaning, knowledge and/or ritual orientation. The Dendera C1 panel, as are all other panels in the crypt space, tells of a theme of creation, life, death, heaven, hell, reincarnation, resurrection, harmony, and balance in the universe. The panel is reflecting the ethos of Egypt as it existed at the time of creation. The panel is a script of a ritual ceremony performed annually throughout the Edfu Hathor temple complex. The most precise and accurate interpretation requires application of this technique to all the panel's objects and accompanying hieroglyphs. When this investigative technique is employed, it becomes apparent that only a couple of answers make the most sense. Yes, the dual attribution can reasonably be that of a god or goddess. For this example, it is of the primordial Nut, goddess of the sky. Her metaphorical attributes fit most accurately in this story.

Object 2: The Pedestal and Occupant: A possible tripartite SR perspective exists in this object. A serech (serekh) is a façade in the first perspective; the pedestal on which the occupant, in this case the god Heh, is perched. He is the depicted real object from which the tripartite associations derive. Heh, known as the “bearer of heaven” and (itself a dual attribute) of eternity, was the best navigator of the primordial flood waters in the time of Zep Tepe. The panel depicts a recurring ritual cult transporting the god Harsomtus across the Nile River, as piloted by Heh and Hathor, to prepare for his journey into the afterlife (eternity).

A second attribution is that of the Late Period epithet of Shu, primordial god of peace, the air, wind, and atmosphere. Shu was adorned as a facilitator to the separation of earth and the sky during the Creation story, as well as (another dual attribute) the father of Nut and great, great

grandfather of Harsomtus, another protagonist in the story. A third interpretation is that of the sun god Ra. This is supported by the omnipotence of the Ra legend to the Egyptian ethos.

Object 3: Goddess Nut: Shown behind the Djed Pillar with arms upraised in a reflexive behavior one expects to visualize when one is holding up something or providing support for that activity. Nut is shown connecting with and upholding the object that has the same precise meaning to all ancient cultures. This object, described as Object 10, is a real natural illustration of our Milky Way galactic center and the Great Rift, in the direction of the Sagittarius constellation. Seland (2024) shows visual evidence and proof that this is the real object known to ancient Egypt and all other ancestral cultures.

The Milky Way was heaven to our ancient brethren. The Great Rift was hell. Nut was the goddess of the sky. This symbolism is central to the theme of the entire ritual cult, that being celebration of the Creation story, all its accoutrements and the existential necessity for all Egyptian descendants to socially bond in knowing that they will enjoy the same eternal existence if they follow the ethical life course on their earthly journey.

Object 4: The Djed Pillar: This is a representation of the real object. The Djed Pillar is universally known in ancient Egypt and beyond refute. The first level rendering takes the definition of being the backbone and spine of the great god Osiris in reflection upon his miraculous resurrection from the dead. The Djed offers strength and support for whoever needs its assistance and guidance and is one of the most replicated objects in the entire Egypt culture. The goddess Nut enlists the Djed to help her support the Milky Way and the Great Rift, or heaven and hell, and to help guide a successful but dangerous journey of her great grandson, Harsomtus, to the afterlife and eternity.

Object 5: Lone Kneeling Female: This is most synergistically interpreted to be a rendition of the goddess Hathor, mother of Harsomtus and the hostess of the temple at Edfu that bears her name. The compositional characteristics bear this identification out in that this object is larger than most of the others except for objects 8 and 9. Hathor wore many representative 'hats' in Egyptian culture. This panel uses her attribution as goddess of motherhood as she helps Heh pilot the day barge and depicts her as being pregnant to celebrate and reinforce the ritual journey of Harsomtus, her soon-to-be son, into eternal bliss. Hathor's adornments as guider of birth, life, death, and the soul's resurrection provide social engineering, bonding, and recurring symbolism as attitude cues for behavior reinforcement and modification.

Object 6: Two Kneeling Figures: There are both multiple dualities and metaphorical contexts embedded within the meaning of this object. The male and female icons illustrate an epithet of the dualistic and harmonious nature to the universe. A duality is contained in the two parental figures where both are harmonically needed to process a cycle of creation and a birth home for the earthly soul, known as the 'ba.' Additional context is associated with the Egyptian linguistic concept of a determinative. They used, for both hieroglyphs and symbolic representations, placement of a figure directly to the right of the main 'sentence.' This example depicts a determinative, that of the pregnant Hathor, situated directly to the right of the couple.

Object 7: Lotus Flower: When examining this object from a through a broad view, the blue lotus pictorial demonstrates intertwined meanings in conjunction with most all the other objects in this panel. The other Dendera panels exist similarly in this nature. There is also a tripartite meaning set present in this object's cognitivity. The first meaning takes a horticultural epithet from its biological traits and is portrayed as a day barge used to celebrate the Egyptian worldviews of creation, resurrection, and eternal life opportunity of the ba. The second meaning derives directly from the biological characteristics themselves. These are: presence of a long stem that is permanently submersed in the earth underwater, a leaf apparatus that opens with life every day and closes each night, and the length of this biological system. These are all directly allegorical to the Egyptian cultural belief since the time of Zep Tepe and represent the duality of birth and rebirth. The third tripartite meaning is immersed in the celebration of the ba's journey down the road of this life cycle and directed to strive for the eternal afterlife in heaven (the Milky Way). Along this way, as another multivariate meaning, the blue lotus sailed down the Nile waterway, the great life-giving body of water that harbored a great eternal source of food for both the lotus and the ba as it is fed for the duration of its everlasting existence.

Object 8: Lone Figure Holding Up Base of Bulb: This is an epithet for Egyptian ancestry. The object is symbolic of the eternal life destiny of royalty and all the pharaoh's people in recognition that the people of their great nation are only capable of eternal life from the combined efforts of royalty and the people themselves. I note that this object is the largest single symbol representation on the entire panel. This suggests that upholding the ethos of Egyptian ancestry is the most important protagonist in this celebration. An additional depiction raises consciousness to the attitude-behavior mechanism of the ritual social bonding reinforcement strategy imposed by royal authority over its dominion.

Object 9: Baboon with Knives: The animal deity Babi is depicted here as a direct illustration of the highly worshiped baboon species, and also that of Thoth, the primordial god of knowledge and wisdom. The symbolism derives its attributions from the real-life characteristics of the species. These include great strength, intelligence, and aggressiveness, the context of which is reinforced by the presence of the two knives. The zoomorphic and anthropomorphic representations are that of a protector and destroyer of the evil and unrighteous bas that try to pass unjustified through the Ma'at judgment purgatory.

Object 10: The Serpent: Also known as the filament of the bulb to those advocates of the Dendera Light Theory, this is a most curious symbolic representation in the entire record. The zoomorphic inscription shows the real-life image of the Milky Way, irrefutably known as the most existential natural phenomenon to all ancient civilizations and probably ours today. The worldwide context that can be uncovered from this imagery is multivariate, universally congruent in their cognitive development and timelessness. For the Dendera example here is a list of argued identities to a symbolic representation of the serpent. Waitkus (2002, 1997) suggests that it is a representation of Harsomtus, the main protagonist. He also suggests a similar attribution to Horus, god of the Earth. Others include the vulva of Nut (Waitkus, 1997) or the womb of Nut, (Waitkus, 1997; Grenville, 2010), and the sun god Ra.

In sum, the evolution of the human mind, an awakening to new domains of sentience, awareness and development of a recursive conscious attitude and behavior response to strategies of power and control over his environment and others, drove prehistory from the Upper Mesolithic to the Bronze Age. I offer an extension of this argument to state that today we continue to drive this manifestation process. Archaeological record contains countless examples that support a lengthy and iterative nature to this evolution. From the most accurate known time of study dated over 70,000 years ago, the baseline for establishment of this evolutionary framework was in place. Symbolic representations, in the form of cave paintings, show a phenology whereby power and control are observed and is owned by the wild animal kingdom. This phenology continues well into the Neolithic, as evidenced from many sites dated to about 11,000 years ago that include Nevali Cori, Gobekli, and Karahan Tepes, among others. Animals of a well-known wild nature were the dominant biological force of nature still then. Human figures started to appear in the same illustrations when more pervasive iterations of climate change, i.e., the end of the Ice Age and the Younger Dryas iterative periods. Eventually, more recent motifs portrayed humans slowly establishing more mindful dominance over their world. For a while, divergent cultures showed this manifestation either by the female as powerful dominant and the bull as proxy for the male gender, or by the male gender predominant in the hunting role. The latter conscious psychology survived this SR competition. With few exceptions, the male gender has been depicted as dominant manifest ever since.

Discussion

We are them; they are us.

Our ancient brethren operated their lives via visual flight rules (VFR). Today, in contrast, we operate our lives by instrument flight rules (IFR). Too much of one thing (IFR) prevents knowledge and meaning acquisition from direct sensory observation. When we expand our observational universe to sense the entire environmental theatre using VFR or IFR in order to observe characteristics of nature unobservable by our human senses, we obtain information and knowledge that otherwise would be missed if we chose to just focus on an instrument device for guidance through that environment.

We may have created a dependency on IFR without even realizing it. In some situations, we are given no choice in this matter, as coerced by our cultural preferences and pressures. Our ancestors were forced to operate solely by VFR though they had no technological alternative. Which option is better?

Ancient Egypt left its descendants (us) a truly inspiring manuscript associating the successful development of symbology as a tool of communication. The completeness of their historical record is highly pedagogical and embodies the effectiveness and recursive nature of the attitude-behavior mechanism in determining the course of their customs. They experienced the same cognitive constraints, opportunities and driving factors of biological/genetic, psycho-social, environmental, and reproductive habituation influences as we do today.

Our attitudes and behaviors are a lot like theirs, in anatomical, neurological, and phenotypical realms. Our species' modern cognitive mindset defines a different worldview, lifestyle, and some ways of seeing the world. On the other hand, we need to relearn how to observe on the same holistic level that our ancestors did. Remember that our modern critical thinking about the subjects of deities, worship to the Milky Way, and the heavens is constructed from a wholly expansive knowledge base that our ancestors, even early Bronze Age Egypt never possessed. The attitude-behavior practice was the same, though the inherent critical thinking of ritual, deities, adornments of various cosmic objects to us is so foreign as to seem not at all practical. But to the indigenous it was entirely practical for them in their time, in their worldview, and in their resource possessions, to view the universe in the way they did. This said, efforts to acquire a comprehensive understanding and enlightenment of their lives will fail if the investigative researcher falls into a cultural time bias trap. To be considered as effective researchers we must also acknowledge their effective intuition and ingenuity with far more limited resources in laying the groundwork for our knowledge base today.

A framework for future study could be concerned with discovery of a relationship that the notion of life role norms had with the growth of SR in the way that it did. Life role norms define the division of labor assignments that were impressed onto the male and female genders in an earlier era before the emergence of SR. The male gender, being anatomically built as physically stronger with a propensity for a hunting mentality somehow assumed or acquired the ancient roles of securing game foodstuffs, and to more recent creation of pillars, henges, monoliths, and buildings. Females, in contrast, were anatomically selected for reproduction and neonatal development. The female anatomy and neurology were and are better structured also for a primary role in child rearing. This was why most of a child's growth years are spent in the presence of its mother.

This allocation of roles predates urbanization and the Neolithic Revolution from the available archaeological record. Was this anatomical phenology the biggest single reason that the Upper Mesolithic female was assigned or inherited the life roles of domestication, more recent plant cultivation, and the weaving of symbolic knowledge into amulet, textile, and pottery production and which those roles were transported without controversy into the Neolithic? The framework varies slightly in administration among some ancient cultures but, "seems to be rooted in physiological characteristics" (Leroi-Gourhan, 1993, p. 151, 153). Future study could take a framework in developing a confirmation to this argument, as well as an exploration of questions as to how the life role norms influenced production of SR. Were females' special talents for creating these forms of symbolic representation inherent, genetically selected, or circumstantially conferred? Was the role of hunting game foodstuffs similarly assumed to the male gender in any of the same ways? Was the role of erecting adorned pillars, glyph panels, henges, and buildings empirically selected to males because of their physical strength, or were these manifestations also circumstantially induced? At the time of their creation decisions had to be made as to proceeding with an allocation of life roles. Were these methodologies somehow naturally compelled by inheritable traits, environmentally, ecologically or from an unknown outside influence not yet known or recognized? Why did males come to globally dominate the occupations of shaman, temple scribes, artisans?

It was noted in the Methodology section that trend lines of the manifestation of the first and second iterations of the SR technology advancement theory inferred a curious nature. I stated that there was no single eureka event that birthed each generation. The rigid observe-and-draw generation was created in different ancient geographies at times that span thousands of years. The second generation of dual and tripartite cognitivity and meaning developed in a similar manner. The curious nature of the data suggests that further investigation may be warranted to help better understand some additional questions within the study of this phenomenon.

Monuments and temples were Neolithic centers of the world in any culture. This cognitivity is present even today in modern man. Egyptian royal architecture design and purpose was no different (in the temple and pyramid cultures) in its embedded symbology context than, for example, the modern presidential library or contemporary religious architecture except that for the cognitive cultural mindset back then the authoritative message from royalty ritualized the afterlife as a life force compass. By extension, all our ancestral cultures adopted this life ideology that enabled and drove their unique canon of spiritualism and eschatology. Today, we have practiced a separation of church and state for a couple of millennia in Western cultures. The practice of religion, complete with all its ritual cultures, social bonding, and its redundant, repetitive and rigid attitude-behavior syndrome, still embodies the spiritual and eschatological mindset, but its role is separated from the Calvinistic manifest to varying degrees among the practiced religious sects today. Today's perspective, due to the focus of immediacy in our attitude-behavior syndrome, is to say that our civilization practices an 'in the moment' mindset that would be perceived as entirely foreign from the perspective and critical thinking of our ancient brethren. Examples in the microcosm of life today abound with this instinct.

We now know that the concept of symbolic representation would not have been possible without factors of biological, psychological, ecological and habituation influences. From these influences, our brain and mind dynamic charted this unique course in the way it did. Naturally, if one of these influences evolved differently, an entirely new SR realm would have been created. It is curious and awe-inspiring to wonder, given that multiple universes did exist, how symbolic representation would have originated and developed for us given the change in one of these factor influences. What a fantastic landscape for investigation!

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