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News To Use: The Creation

An Interpretation Of Michelangelo's Creation Of Adam Based On Neuroanatomy

By Frank Lynn Meshberger, MD



The Creation of Adam (1508-1512) on the ceiling of the Sistine Chapel has long been recognized as one of the world's great art treasures. In 1990 Frank Lynn Meshberger, M.D. described what millions had overlooked for centuries — an anatomically accurate image of the human brain was portrayed behind God. On close examination, borders in the painting correlate with sulci in the inner and outer surface of the brain, the brain stem, the basilar artery, the pituitary gland and the optic chiasm. God's hand does not touch Adam, yet Adam is already alive as if the spark of life is being transmitted across a synaptic cleft. Below the right arm of God is a sad angel in an area of the brain that is sometimes activated on PET scans when someone experiences a sad thought. God is superimposed over the limbic system, the emotional center of the brain and possibly the anatomical counterpart of the human soul. God's right arm extends to the prefrontal cortex, the most creative and most uniquely human region of the brain.

The brilliant Italian Renaissance artist Michelangelo Buonarroti painted magnificent frescoes on the ceiling of the Vatican's Sistine Chapel, laboring from 1508 to 1512. Commissioned by Pope Julius II, Michelangelo performed this work himself without assistance. Scholars debate whether he had any guidance from the Church in the selection of the scenes, and what meaning the scenes were to convey. In the fresco traditionally called the *Creation of Adam*, but which might be more aptly titled the *Endowment of Adam*, I believe that Michelangelo encoded a special message. It is a message consistent with thoughts he expressed in his sonnets. Supreme in sculpture and painting, he understood that his skill was in his brain and not in his hands. He believed that the "divine part" we "receive" from God is the "intellect". In the following sonnet, Michelangelo explains how he creates sculpture and painting and how, I believe, God himself gave man the gift of intellect¹:

*After the divine part has well
conceived
Man's face and gesture, soon both
mind and hand,
With a cheap model, first, at their
command,
Give life to stone, but this is not
achieved
By skill. In painting, too, this is
perceived:
Only after the intellect has planned
The best and highest, can the ready
hand
Take up the brush and try all things
received.*



The sculpture and painting of Michelangelo reflect the great knowledge of anatomy that he acquired by performing dissections of the human body. His experience in dissection is documented in *Lives of the Artists*, written by his contemporary, Giorgio Vasari². Vasari says, "For the church of Santo Spirito in Florence Michelangelo made a crucifix of wood which was placed above the lunette of the high altar, where it still is. He made this to please the prior, who placed rooms at his disposal where Michelangelo very often used to flay dead bodies in order to discover the secrets of anatomy . . ."

The *Creation of Adam* fresco shows Adam and God reaching toward one another, arms outstretched, fingers almost touching. One can imagine the spark of life jumping from God to Adam across that synapse between their fingertips. However, Adam is already alive, his eyes are open, and he is completely formed; but it is the intent of the picture that Adam is to "receive" something from God. I believe there is a third "main character" in the fresco that has not previously been recognized. I would like to show this by looking at four tracings, Figures 1 through 4, and by reviewing gross neuroanatomy, using works by Frank Netter, MD, illustrator of *The CIBA Collection of Medical Illustrations, Volume I – The Nervous System*.

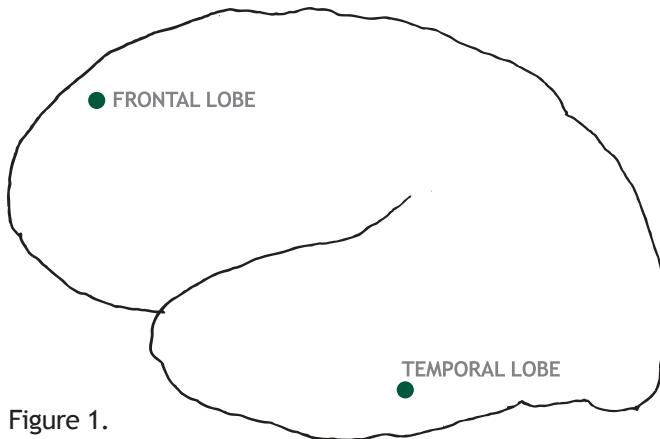


Figure 1.



Figure 2.

Examine Figures 1 and 2 to see if there is any similarity between them. Examine Figures 3 and 4 and decide if these figures are similar or dissimilar. Take enough time inspecting the figures so that your mind may form its own image of them.

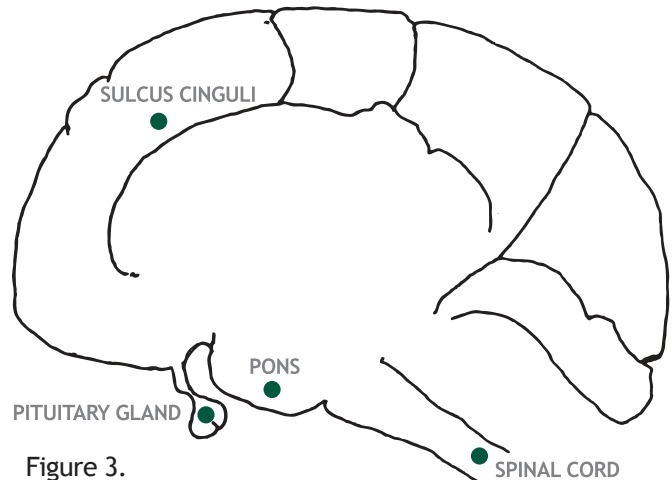


Figure 3.

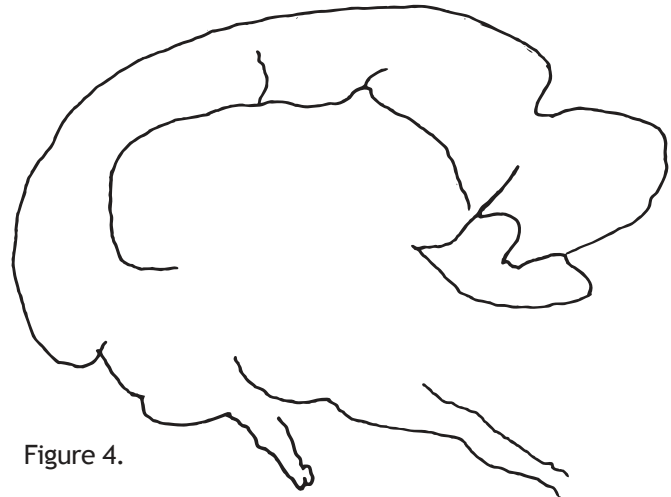


Figure 4.

Proceeding to the neuroanatomy, Figure 5 shows a sagittal section of the skull; the brain, which lies in the cranium, takes its shape from it. Study the picture to gain an overall impression of the shape of the cranium.

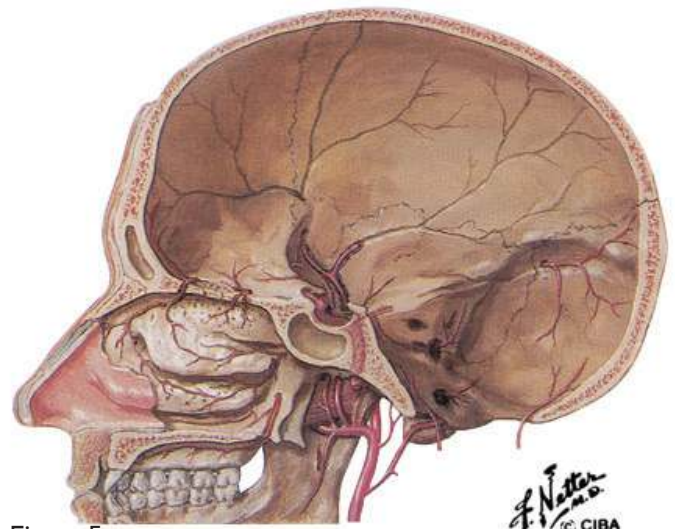


Figure 5.

Figure 6 shows the left lateral aspect of the brain and illustrates the sulci and gyri that are present in the hemispheres. The fissure of Silvius, or lateral cerebral fissure, separates the frontal lobe from the temporal lobe. Figure 1 is a tracing of this illustration.

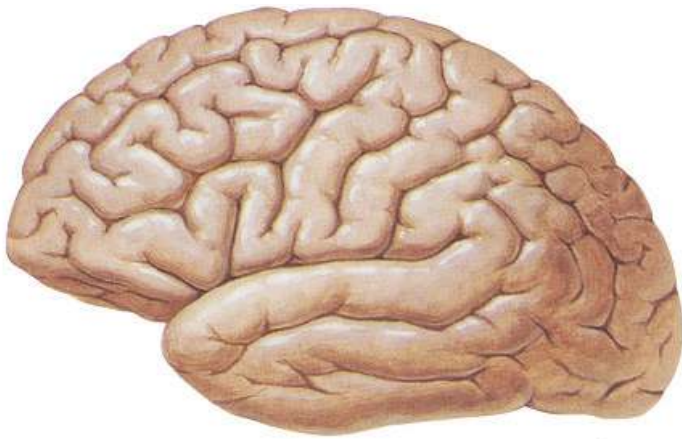


Figure 6.

Figure 7 depicts the medial aspect of the right hemisphere; Figure 8 is a tracing of the brain and spinal cord portion of this illustration. The sulcus cinguli separates the gyrus cinguli from the superior frontal gyrus and paracentral gyrus. The

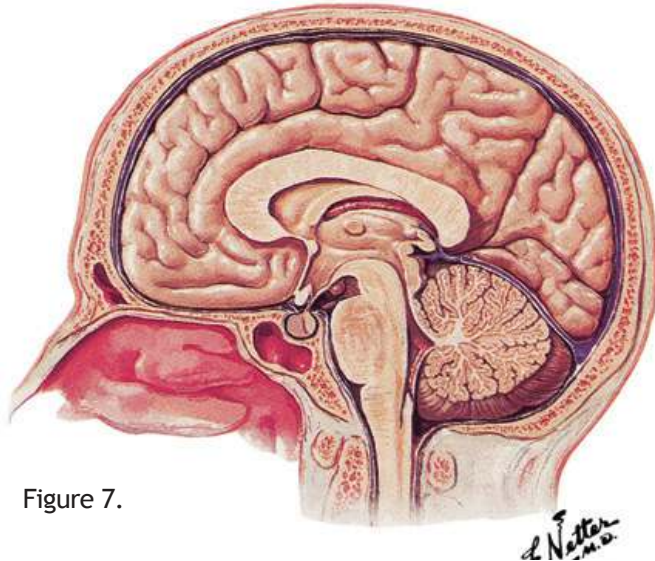


Figure 7.

parietal lobe is divided into the cuneus and lingual gyrus. The pituitary gland is seen lying in the pituitary fossa; the fact that the pituitary is bilobed can be seen grossly. The pons, the bulbous upward extension of the spinal cord, is

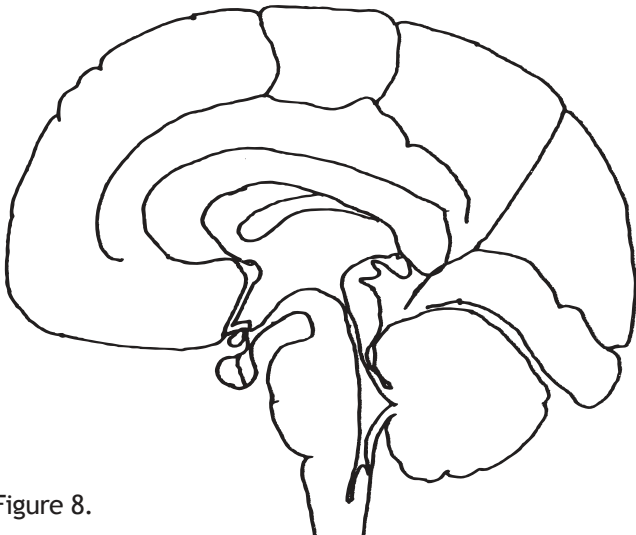


Figure 8.

noted. Immediately in front of the pituitary gland is the cross section of the optic chiasm. Figure 3 is derived from Figure 8 by removing both the cerebellum and the midbrain structures inferior to the gyrus cinguli and rotating the spinal cord posteriorly from the standard anatomic position.

Figure 9 is the inferior surface of the brain. From the optic chiasm, the optic nerves extend rostrally, and the optic tracts pass backward across the cerebral pedicles. The basilar artery, formed by the junction of the two vertebral arteries, extends from the inferior to the superior border of the pons.

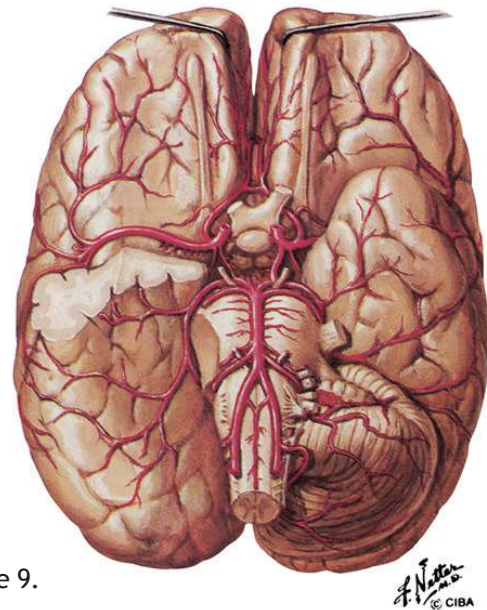


Figure 9.

Figure 10 shows the vertebral artery running cranial-ward through the foramen in the transverse processes of the cervical vertebrae to the inferior surface of the skull. The vertebral artery bends abruptly around the articular process of the atlas and makes another abrupt bend to enter the cranial cavity through the foramen magnum, where it joins the other vertebral artery to form the basilar artery.

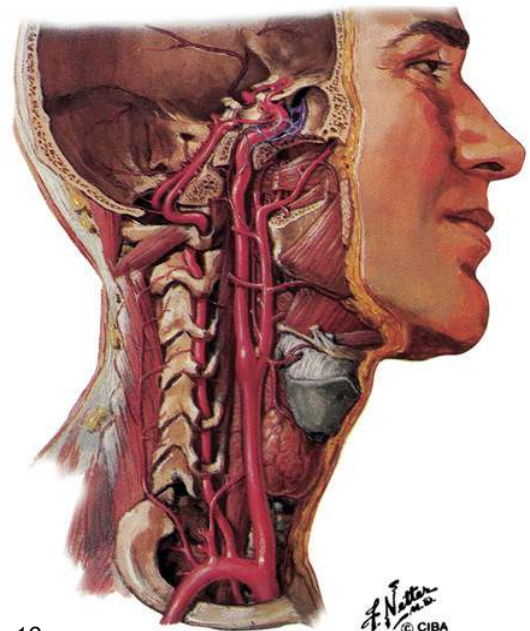


Figure 10.



Figure 11.

Having studied these images of neuroanatomy, proceed to Michelangelo's *Creation of Adam* (Figure 11) and look at the image that surrounds God and the angels.

This image has the shape of a brain.

Figure 12 shows that Figure 2 is obtained by tracing the outer shell and the sulcus. Figure 13 shows that Figure 4 is a tracing of the outer shell and of major lines in the fresco of God and the angels. Therefore, Figures 1 and 3 are tracings of neuroanatomy drawn by Frank Netter, and Figures 2 and 4 are tracings from the *Creation of Adam* by Michelangelo.

The sulcus cinguli extends along the hip of the angel in front of God, across God's shoulders, and down God's left arm, extending over Eve's forehead. The flowing green robe at the base represents the vertebral artery in its upward course as it twists and turns around the articular process and then makes contact with and proceeds along the inferior surface

of the pons. The back of the angel extending laterally below God represents the pons, and the angel's hip and leg represent the spinal cord. The pituitary stalk and gland are depicted by the leg and foot of the angel that extends below the base of the picture. Note that the feet of both God and Adam have five toes; however, the angel's leg that represents the pituitary stalk and gland has a bifid foot. This same angel's right leg is flexed at the hip and knee; the thigh represents the optic nerve, the knee the transected optic chiasm, and the leg the optic tract.

The important point, however, is not to identify minute neuroanatomic structures in the fresco, but to see that the larger image encompassing God is compatible with a brain. Michelangelo portrays that what God is giving to Adam is the intellect, and thus man is able to "plan the best and highest" and to "try all things received".

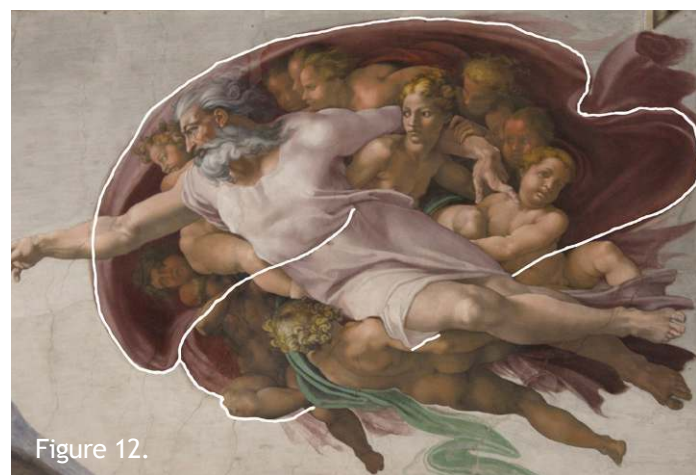


Figure 12.



Figure 13.

References

1. Tusianai J. *The Complete Poems of Michelangelo*. New York, NY: Noonday Press; 1960:146-147.
2. Vasari G; Bull G, trans. *Lives of the Artists*. Middlesex, England: Penguin Classics; 1965:332-333.

The above article appeared in the October 10, 1990 edition of JAMA®, The Journal of the American Medical Association, Volume 264, No. 14. The drawings by Frank Netter, MD (Figures 5, 6, 7, 9, and 10) were reproduced from this article.

Wellcorps International wishes to express our sincere gratitude to Dr. Frank Meshberger for having the clear and objective perspective to correlate his many years of medical training and knowledge into an objectivized understanding of one of the world's great art treasures and gifts – allowing us a glimpse into the mind of a spiritual artistic genius who asks us to see beyond the bounds of religion into the deeper meaning of the cosmos.

The Use Of Symbol As A Metaphor Of Meaning

By Carter M. Throckmorton



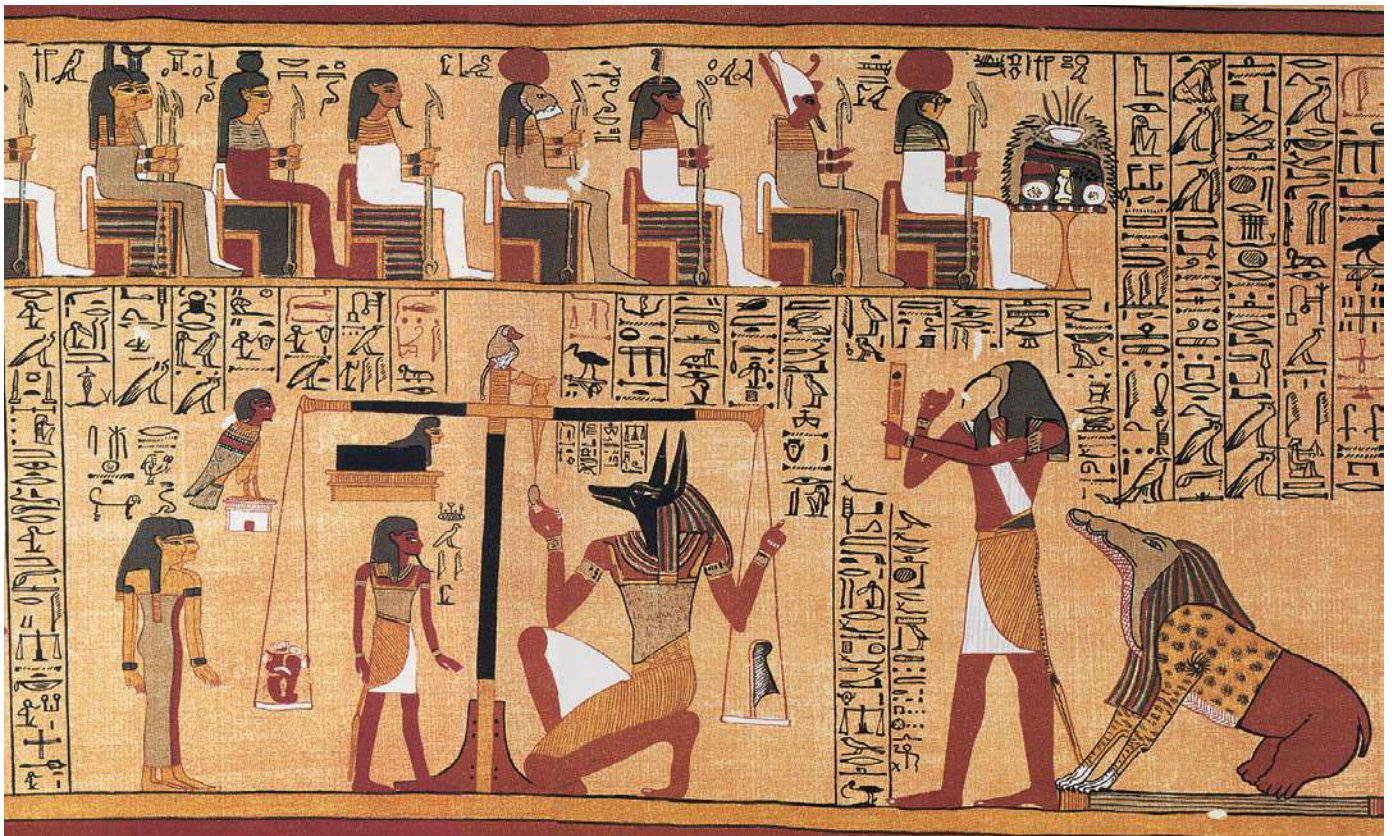
Perception: The degree, angle, and percentage of judgment.

In its simplest form the symbol has been used by countless civilizations to relay, to impart, to generate a responsive understanding of meaning. In its purest form the symbol not only communicates a meaning, it communicates a contextual meaning which carries an emotionally-based message individually interpretive by the observer – the full extent of which is not readily apparent without further, reflective understanding.

The transformation of knowledge into understanding and wisdom is at the heart of all sacred disciplines and practices. From the ancient rainforests, where entheogenic potions brewed by the shamans brought transformative and symbolic visions and ecstatic understandings of man's relationship to himself and to the universe, to the modern laboratories of chemists and physicists, where the symbolic equations of mathematics and science bring a seeming endless stream of technology, the power of the symbol remains inextricably fixed in the human experience.

Rulers of the ancient worlds understood the power of language and the inherent danger of misinterpretation of the written word. This knowledge was the reason texts were forbidden and the only forms of acceptable communication were carefully-crafted symbols which carried contextual meanings intended to include the common man within a higher, inspirational focus. Petroglyphs and hieroglyphs, in connection with artistic representations of life, communicated practical knowledge as well as inspirational, spiritual wisdom.

The Observer, Observing Himself, Being Observed.

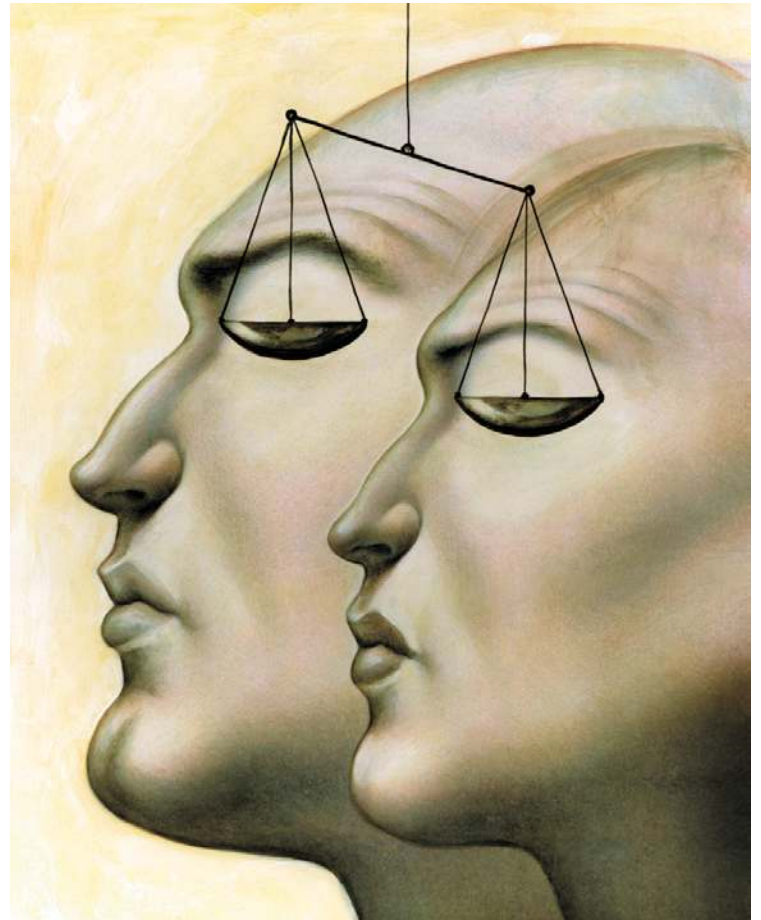


Weighing of the Heart. Papyrus of Ani; The Egyptian Book of the Dead.

Symbols help us to see beyond the ordinary realms of conscious interpretation, to include ourselves and our historical reference of experience into the translation and the meaning. And, in every true symbol lies art — an inspirational capturing of a whole greater than the sum of its parts — oftentimes providing an unwritten, nonverbal realism to aspects and perspectives overlooked, forgotten or ignored.

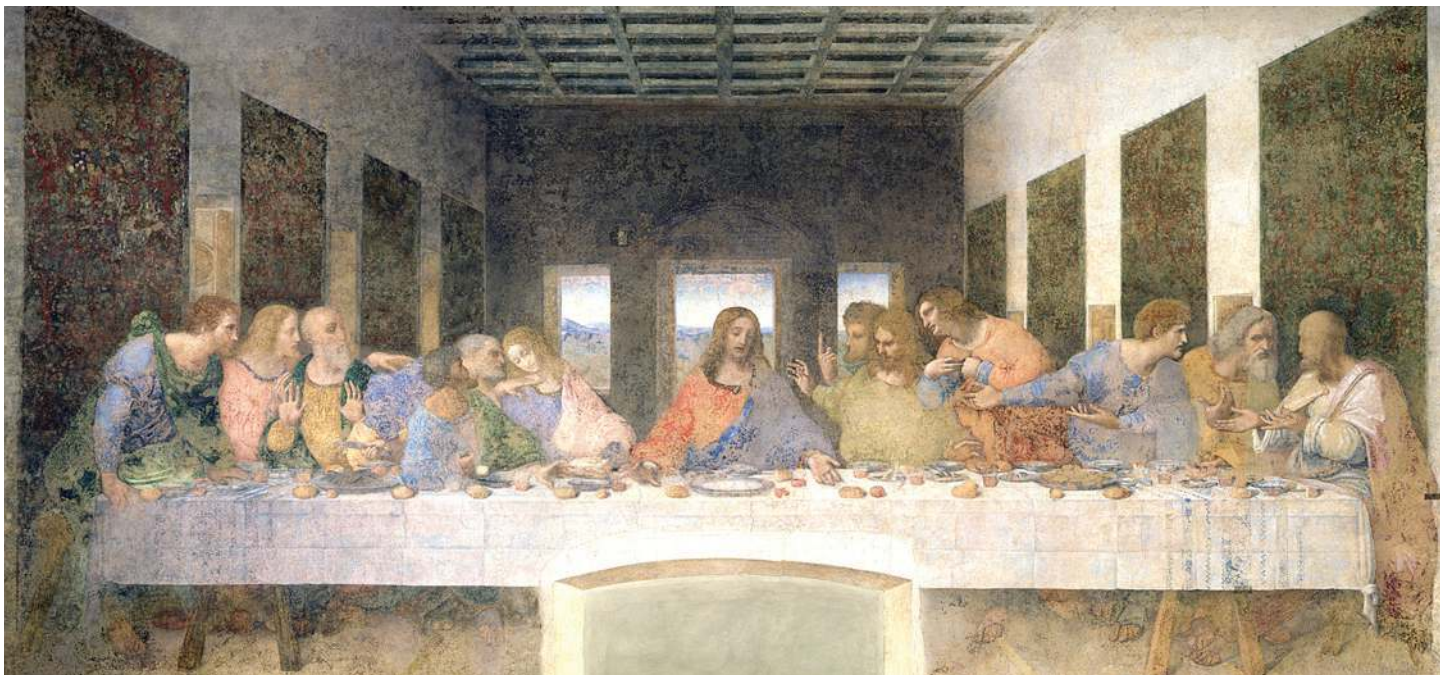
It is a constant idea of mine, that behind the cotton wool {of daily reality} is hidden a pattern; that we — I mean all human beings — are connected with this; that the whole world is a work of art; that we are parts of the work of art.

— Virginia Woolf in *A Sketch of the Past*



Scale. Artwork copyright Anita Kunz. All Rights Reserved.

Some, so perfectly designed, it may take generations to realize the full meaning and challenge of the representation.



The Last Supper: Leonardo da Vinci

The world in which we find ourselves today is a world increasingly obvious to be intricately inter-woven, inter-connected and inter-dependent. The walls of judgment, the illusions of separation and the exclusion of the ecological impact of our daily activities are quickly coming down and coming to an end. These modern-day realities are requiring all of us to look at our lives, our careers, our families and our communities in ways we had never imagined. Our ability to thrive, indeed, our very survival, depends upon this expanded awareness. In short, life itself is demanding that we change our perception and gain a new perspective.

***If I am not for myself, who will be?
If I am for myself only, what am I?
If not now, when?***



Eve. Artwork copyright Anita Kunz. All Rights Reserved.

This call to sustainability and stewardship — a return to indigenous wisdom in a modern world — is requiring from each of us a renewed level of energy, a new enthusiasm and an inner confidence that only a healthy lifestyle, a positive mental attitude and sharp thinking can provide. If we are to remain competitive in today's global marketplace, keep our creative edge, and provide sustainable income and lifestyles for ourselves and our families, we are going to have to out-think, outsmart, and outrun our contemporaries — in ways and means that no longer negatively impact the planet and the future health of our own children.

***The significant problems
we have cannot be solved
at the same level of
thinking we were at when
we created them.***

— Albert Einstein

It's time to get real and get well. From the foods we eat and refuse to eat, to the ways in which we move and get our groove, today's watchwords are respect and responsibility — for ourselves and others. It's all about becoming self aware. And in that awareness, a transformation of conscious understanding of our intention in everything we do, everything we say, and everything we choose to believe.

Now's the time to think harder, longer, deeper, wiser. To ask ourselves the question "Why?" until we have an answer and not a reason.

***You'll never know what you have to lose
until you can see the things you're missing.™***

