



# THE UPPER CERVICAL MONOGRAPH

## Preprint for Upcoming Edition of The Upper Cervical Monograph

The Upper Cervical Monograph has long been the traditional place to present new findings in the NUCCA work within our organization. As we are transitioning to publication in peer-reviewed indexed journals, the use for The Upper Cervical Monograph is shifting too. There are many topics of interest to NUCCA clinicians that may not be appropriate for publication in mainstream journals. Our interests are very specific and detailed and while of great import to us, they can be of peripheral interest to those who do not practice orthogonally based upper cervical chiropractic. This doesn't lessen the importance of these papers to our membership. The need for this type of communication will continue into the future.

As always, we invite our members to submit papers, case studies, letters to the editor, reviews, etc. to The Upper Cervical Monograph for consideration of publication. You can send your submissions to :

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Our research team with the full and active support of the UCRF Board members is feverishly working on several papers for publication in the peer-reviewed indexed literature, including a recent submission to Spine and imminent submission to the Journal of Manipulative and Physiological Therapeutics (JMPT). Several other papers and studies are in process at this time. You may have seen Dr. Dickholtz's recent case study on scoliosis, co-authored with Dr. Khauv, published in the Journal of Pediatric, Maternal and Family Health Chiropractic. You can access this paper (you will need to be paid member to read the whole paper) at:

[http://chiropracticpediatricresearch.web.officelive.com/2010\\_1048\\_scoliosis.aspx](http://chiropracticpediatricresearch.web.officelive.com/2010_1048_scoliosis.aspx)

Since the next issue of the Monograph is filling up slowly, all the editors have decided to send out to our membership a preprint from the upcoming issue. Following is an informal paper *The Things We Can't Measure: a clinical look at the phenomenology of posture* by Dr. Michael Thomas that promises to remind us that our patients are more than the "H4 A2 ½, inf. torque in room 2."

The doctor seeking a review is encouraged to reread the following articles in recent Monographs dealing with posture: (1) *A brief History of the Modus Operandi of Measuring and Correcting the Atlas*

*Subluxation Complex Syndrome and the Role of Posture in the National Upper Cervical Chiropractic Association (NUCCA) Standard of Care* by J. Palmer and K. Creswell Vol.7, No. 1, 2008, and (2) *Improvement in Radiographic Measurements, Posture, Pain, & Quality of Life in Non-migraine Headache Patients Undergoing Upper Cervical Chiropractic Care: A Retrospective Practice Based Study* by J. Palmer and Marshall Dickholtz Sr. Vol.7, No.2, 2009. A broader context concerning posture is attainable in NUCCA Protocols and Perspectives: A Textbook for the National Upper Cervical Chiropractic Association, First Edition ( Michael. D. Thomas, Editor; 2002)

## **The Things We Can't Measure:**

### **A clinical look at the phenomenology of posture**

Michael D. Thomas, D.C.

A scientist uses the experimental method to discern objective information about the physical world. A clinician works within a somewhat different sphere. He/she has a first responsibility to do no harm (primum non nocere) and secondly to facilitate return of optimal health in the individual being administered to. These are related but not identical spheres of focus. While a scientist may ignore subjective, non-measurable components of the subject at hand, the clinician does so at the patient's peril.

The concept that events such as posture, occur in a vacuum, unrelated to external (environmental) or internal (physical, emotional, mental, or spiritual) context is an artificial truncation of the actual massively complex interconnectivity that defines the real meanings of such a behavior in one's life. Further, this oversimplification distorts and impedes full understanding of these events. A perspective that attempts to integrate these internal and external aspects is known in philosophy as 'phenomenology' and its importance is becoming more recognized in science and medicine. Phenomenology, founded by the German philosopher Edmund Husserl (1859-1938), is an empirical approach that rejects theories and preconceptions in favor of observation and description.

The idea that how we stand upon the Earth is a function of many factors has been well explored by Hubert Godard, a French dancer, teacher and Rolfer who developed the idea of 'tonic function', a term he developed to encompass the multimodal response of the human being to the influence of gravity.

From this perspective, the posture of an individual standing in a neutral position, cannot be divorced from its many contexts. Kevin Frank, in his article 'Tonic Function' explores four basic categories that influence response to gravity. A human being must first contend with gravity in a physical, mechanical, structural sense. This would include the structural elements, and principles of tensegrity and hydraulics (fluid dynamics).(1)

There is in addition, an internal impression (perception) that modifies how an individual stands. Where am I? Which way is up? How do I feel about myself? How does this alter how I stand? In addition, the expression of an individual must be predicated on how the individual emotionally feels about the external environment. How do we greet the universe? Is the world perceived to be a safe place or a place in which one must protect oneself? Then there are also 'acquired automatic subroutines' that have developed in the course of living life. These patterns of movement can be seen as the temporally accumulated responses generated by internal, external, and gravity mediated events over time.(2) Walking gaits are, for instance, each unique and people can often be identified even from behind by the way they walk by those who know them.

Response to gravity is basic and primary in sensory development. It is the first learned response and is present in every activity of living. Like water to a fish, it is ubiquitous. In his chapter in *Complex Motor Behavior* (1988) Reed commented on this by asking a question. If you were standing on your feet and were told to raise your arm, which muscle would activate first? His answer, based on electrophysiological studies, were the gastrocnemius and the soleus. It is the muscles of the leg and ankle which fire first to appropriately shift the body's center of gravity due to the incipient change created by moving the arm anteriorly. (3)

Godard noted that the gravity response is embedded in the nervous system and is not changed by direct voluntary control. It is only by fundamentally changing the context of the situation (perception, emotion, meaning) that the ennested gravity response is altered. Movement is not learned in an abstract way from an idealized notion. It is built over time as a result of the multimodal interactions of our being with the environment and within ourselves. The resulting movement is a result of all the thoughts, feelings and constructs (internally and externally) that have developed (been learned) in the individual's life experience. (4) Anticipation is vital when your center of gravity is perched over bipedal, multi-jointed legs. In the human being, the line of gravity bisects the body in the frontal plane and almost does so in the sagittal. This allows a standing posture of ease with need for very little energy input to maintain. Of course, the ASC (Atlas Subluxation Complex) can change these dynamics greatly.

Upright posture is a highly significant issue because it is imperative to survival. If an individual is not able to stand upright, he or she must depend upon others for the basic requirements to maintain life. It is often deeply associated in a moral sense with being good or being 'upstanding'. Standing upright helps us to preserve our ongoing life.(5)

Our relationship with gravity is a fundamental, and as A. Newton notes, "*a primordial, instinctive relationship that is so profound as to be almost invisible.*" (6)

Human beings are characterized by their upright posture. Each of us finds a unique and individual way to stand upright. Each of us must become the person we are. Some functions are nearly automatic like our heartbeat or our respiration. Outside of occasional voluntary contribution, these functions don't demand our constant vigilance. Gravity is however, never fully or permanently overcome; it requires constant vigilance. We must oppose the force of gravity to even stand up. We must always pay attention to it in nearly every activity of our lives. (7)

So how do we stand up? How do we evolve from a helpless infant to a fully functional adult? The most basic explanation involves the relationship between agonists and antagonists in the musculature. As Straus notes: “. *A free flow of tension occurs when agonists are not met with counteraction by antagonists. The constraint in movement, called bound flow of tension, occurs when antagonists contract along with the agonistic muscles.*” (8)

Anyone who has sat for a while with a baby has watched them throw their little arms and legs about in bursts of free flow of tension. You have watched their little fingers and toes contract in the tight flexion of bound flow. As Strauss again observes;” *An influx of suddenly emerging free flow may bring his fist near his mouth, and the ensuing bound flow may enable him to hold his fist there for a brief moment.*” (9) It is the beginning of purposeful movement. Bound flow can allow the positioning of our limbs. Free flow allows us to move from one position to another. Bound flow allows us to create form within us. While our bones act as spacers, it is the tonic tension of muscles, tendons, and other tensile elements down to the cellular level within our bodies that forms the relationships that enable us to eventually stand upright and move about in our external environment. Without this constant tension we would be more like jellyfish out of water; flaccid and immobile.

Newton comments:

*“Tension flow and shape flow are the basis of movement patterns. Godard suggests that these patterns of movement are related to the tonic system. For a baby, learning to move and walk requires the development of the tonic system. Through learning to alternate bound flow and free flow in infancy, the baby develops control over movements that eventually lead to the ability to stand. But as Kestenberg shows, the alternating rhythm between bound flow and free flow also serves another purpose, as significant as locomotion: it is the first communication system.”*(10)

An amoeba moves through growing and shrinking in an asymmetrical manner. We grow and shrink with our respiration. We grow when we eat and we shrink when we expel urine and feces. Like all creatures, we move toward that which pleases us and away from that which does not. A baby learns to alternate between free and bound flow patterns in order to make purposeful movements and ultimately to stand upright. For Godard, tension flow and shape flow are the fundamental qualities that form the basis of movement, and even more, of internal self-regulation. This push and pull forms a basal rhythm that ultimately entrains our whole being. In the embryo, the first organ to form is the heart and this primordial heart sets up an initial rhythm that entrains the growing realization of our physical structures.

Significantly, this primal tonic rhythm develops the eventual basis for communication. The push and pull of the pulsatile beat that comprises the early proto-heart is the first action we ever make in this world. It is how we are first known and is the first communications system with our external environment. As we become able to manipulate our environment through our movements, we begin to make the distinctions between ourselves, our mother, and the rest of the environment. Independence also requires communication. Research by Kestenberg has shown *“the relationship of the tension-flow patterns of the infant with the movement patterns of the mother through each phase of development.”* (11)

This intimate dance between mother and infant builds the internal ‘structure’ from which all future communication will take place. Pushing and pulling, tightening and releasing, dealing with gravity, expressing feelings; an infant finds a way to be embodied and to communicate the needs of this

embodiment. From grasping and releasing behaviors, to expression of emotions and the gradual development of the self, this process forms the tapestry of, as Newton writes, *“the first dialogue between mother and child, a tonic dialogue.”*

Significantly, Godard teaches that the body does not recognize any difference between the gravity system and the expression system. They develop together and are indivisible. (13) We can often know what someone else is feeling long before they speak because of their body language, and often their body language is actually more accurate than the words that do come out of their mouth. Godard reiterates that whenever we work with the tonic system we are also working directly with how we express ourselves; how we communicate. This psychological consequence is intimately woven into the tonic system because of how it has formed. Anytime we significantly alter the function of the tonic system we are inevitably altering the psychological identity too. Newton noted that Ida Rolf and others have all resisted working on the emotional level with their clients. In McLean’s triune brain concept, emotions arise out of the limbic system, the old mammalian brain. The tonic functions are founded in the older, reptilian brain(stem) level. Newton remarks: *“The theory is that by addressing the tonic function we can affect the basic senses of support and orientation without needing to talk about the associations involved. We can help build the basic sense of support in the body (instead of breaking down armor, as in a Reichian model).”*(14) Upper cervical chiropractic understands this in a parallel fashion. We too, address tonic function. We too help build a basic sense of support in the body.

The linking of posture and character is deeply embedded in our spoken and written communication. “He’s an upstanding man. Her head is on straight. He’s a well balanced individual. She is level-headed. He’s a straight arrow.” Conversely, the language is also clear: “She was a twisted individual. He’s not on the level. There was something askew about her. He was crooked, she’s out of line.” Illness or distress is often understood as a deviation away from normal (and away from the vertical) , often with a structural connotation: You don’t have to get bent out of shape!, she’s taken a turn for the worse, he’s out of sync, she’s down with a cold, or under the weather. This doesn’t prove anything other than that in terms of long-standing semantic meaning, our structure and function share a close relationship. We would rather stand tall than be laid low.

Over a lifetime, behaviors become habitual. Traumas accumulate. Tension and stress must be dealt with and are often sublimated. No one has ever figured out how to not age, but the suffering of aging has been a principle focus of the healing arts for as long as there have been healing arts. For an interesting perspective on the progressive degeneration that seems to accompany aging it may be instructive to examine the work of Thomas Hanna (1928-1990), a founding figure in the field of Somatics. Hanna too, wondered why posture seems to worsen with age. He found that this was due to a sensory/motor amnesia. He developed a method to “reduce the effects of sensory-motor amnesia that normally occur by middle age.”(15) He called his program “Somatic Exercises” to differentiate it from mere physical exercise. His aim was to make changes in the sensory-motor area of the brain so “maximum conscious attention” is required. Hanna found that while there is an underlying tonus to the musculature, when a muscle is at rest, its electrical activity should fall to zero. Just as we may hold onto troubling thoughts, often in our subconscious, we also don’t allow our muscles to completely let go. Aside from the unhelpful over-usage of energy, he found that chronic stress causes us to go into two major reflexes. He saw these as archetypal postural patterns, dividing the variations into two polarized strategies. The first, he calls The Red Light Reflex. He characterizes this postural set as :

*“From head to toe, the Red Light reflex involves the following movements: closing eyes, tensing jaw and face, pulling forward of neck, lifting of shoulders, flexing elbows, clenching fists, flat contracting diaphragm and holding breath, contracting perineum (including sphincters of anus and urethra), contracting gluteus minimus muscles to rotate thighs inward (feet are pigeon-toed), adduction of thighs, contraction of hamstrings to bend knees, flexing and supination of feet (each foot lifts and inverts, tilting up arch). The sensory feedback of all these movements constitutes the subjective feeling of the Red Light reflex: fear.”(16)*

Hanna further describes the other end of the scale archetypal postural pattern as the Green Light reflex. He characterizes it as:

*“From head to toe, the Green Light reflex involves the following movements: opening eyes, jaw and face, pulling backward of neck, pulling downward of shoulders, extending elbows, opening hands, lifting chest, lengthening abdominal muscle, relaxing diaphragm and free breathing, relaxing anal and urethral sphincters in the perineum, contracting gluteus maximus muscles to extend thighs, contraction of gluteus medius muscles to extend thighs, contraction of gluteus medius muscles to rotate thighs outward (feet are duck-like), abduction of thighs, contraction of thigh extensors to straighten knees to hyper-extension, extension and pronation of feet. The sensory feedback of all these movements constitutes the subjective feeling of the Green Light reflex: effort.”(17)*

Further Hanna found that life situations cause the two reflexes to recur a multitude of times, gradually becoming habitual. He notes: *“Gradually the Red Light and Green Light reflexes interfere with each other. When one is partially contracted, the other cannot contract fully. This is the sum of neuromuscular stress, a state of muscular immobility caused by the gradual buildup of chronically opposing contractions.”(18)*

He writes that the summation of these two postures over time is the senile posture which is common to many. As Hanna describes it: *“The powerful contraction of the spinal muscles in the Green Light reflex continues its pulling of the lower back and neck into a curve. But the equally powerful pull of the abdominal and shoulder contractions in the Red Light reflex tilts the entire trunk forward, rounding the back and shoulders and projecting the head forward.” (19)*

Sometimes the Green or the Red Light reflex predominates the senile reflex. Either way, it results in six pathologies identified by Hanna: stiff and limited movements, chronic pain, chronic fatigue, chronic shallow breathing, a negative self image, chronic high blood pressure and the “Dark Vise [static isometric contraction causing chronically high blood pressure and progressive physiological deterioration]”. (20)

We work with people of all ages and we see them through all the stages of their lives. The profound effect that the adjustment can have creates very strong bonds of relationship between the doctor and the patient. Because of the nature of the intervention, we can turn life on instead of turning it off like so many of their other physicians. This distinction is not lost on the patient. Many patients turn to their upper cervical chiropractor as their primary physician. How many times have you heard a patient remark that they came in to see if an adjustment would take care of whatever problem they are having before deciding to negotiate the medical bureaucracy? What other single procedure has the wide-ranging power of the upper cervical adjustment? It is primary healthcare.

Postural set is not simply a function of gravity and the integrated input of sensory receptors. The phenomenological factors briefly explored above reveal that mental, emotional, personal historical factors, and social environmental factors also contribute to postural set and muscular function. It would seem that the importance of these factors can vary dramatically over time and between individuals.

As upper cervical chiropractors, we are able to see all of this in a very different way, but we are all looking at the same human beings. We all see the progressive degeneration that takes place in so many. We all see the cascade of suffering that robs us of our health. Identification of the Atlas Subluxation Complex coupled with the corrective biomechanics allows upper cervical chiropractors to intervene in a uniquely powerful and definitive way in the life of an individual. The changes wrought by the adjustment often greatly eclipse what can be measured in the posture or even in relief from pain. Anyone who has been in practice for even a short time knows exactly what I mean.

It is obviously not possible to directly measure the subjective aspects of posture. The multifactoral nature of posture means that some aspects contributing to posture cannot be given quantitative values (or even if, at a moment in time, it is possible to place a precise value, there is no guarantee that this value remains stable over time.). Once again, when all of the aspects of a given element of study are examined, it is not possible to obtain precise measurements. It is however, possible to meaningfully model the system and measure patterns of movement that contribute to posture. The pertinent point here is that just because certain aspects of behavior cannot be measured, does not mean that they do not exist. At the same time, acknowledgement of these subjective factors does not preclude objective modeling of the behavior in question.

In orthogonally based upper cervical chiropractic we have become consumed by the task of removing neural interference to expedite the optimization of posture and function in relation to gravity. Like Rolf, Godard and many others, we too shy away from the emotional sphere in our work. We are aware that restoration to the vertical axis constitutes a self-organizing shift that fundamentally restores quality of life in those who are properly adjusted. We don't 'treat' components whether they are emotional, psychological or musculoskeletal in nature. We remove interference and trust that Life finds a way to bloom. We see the power and the truth of this work every day in our offices. We must not ever forget the incredible nature of what it is we do. The person under your pisiform may never be the same after your adjustment. Acknowledging the subjective in our patients does not invalidate the objective, it just means we are more amazing than we have yet been able to measure.

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