Grandma's Curtain Stretcher

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Orthogonal Geometry and The Unity of Opposites

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A Possible Strategy in the Recipe

By Ron McComb

Dr. Rolf occasionally hinted that Rolfing has similarities to stretching curtains on "grandma's curtain stretcher", or tuning a stringed instrument. This statement, far from being quaintly enigmatic, is a reference to the principles of equalizing, or balancing stress in structures combining both rigid and elastic elements.

Even though this homely principle has, to some degree, been discussed before, I've not seen it mentioned in the current Rolfing principles, and advanced Rolfing principles. Perhaps it seems so basic as to go without saying, or it's simply been overlooked. In any case, because I'm not content with the discussion until it's included I've decided to share these thoughts and observations in the hope it will serve an a reminder of our roots.

Dr. Rolf seemed to be very reluctant to stick too close to verbal or graphic models for either the body or for Rolfing in her teaching. I assume this was out of concern for the potential confusion of the map and the territory. Or, as she said, "There are some people in the world who create vast complex systems, so that they then can be the only masters of vast complex systems." I feel no danger of that here since these principles are simple and can be found in virtually any engineering text.

Any one who has stretched a curtain, a canvas, straightened a bicycle wheel, tuned a drum or stringed Instrument, knows that the elastic elements must be stretched on the frame in an orderly progression to keep the tension equally distributed. Although the order can vary slightly In different situations, the principle remains one of stretching the elastic elements in symmetrical opposition. This simple procedure will avoid distortion in the whole system.

For those unfamiliar with the concept I'll illustrate with a metaphor containing both of the above examples; replacing a banjo head and re-stringing it. Very simply, tension on the drum like body is kept equal by following a pattern of tightening in symmetrical opposition. First, a line of tension is formed when two of the tighteners opposite from each other on the circular frame are tightened about two turns. Next, two tighteners at right angles to this line of tension are tightened to the same tension. (Right angles are opposites). There are now two opposing lines of tension in the head forming a cross in the circle. The head is then tightened across two opposing pie shaped quarters, then two more, and so on. It follows that this procedure continues until the head is tuned. This procedure keeps the whole system flat and rigid enough to accommodate the tension of the strings. Failure to follow such an orderly pattern results in asymmetrical stress that twists the circular frame and renders the instrument unplayable.

The same principle applies when stringing the banjo. The frame continually changes shape as the tuning process alters tension on the strings. Tuning an instrument is an art that only stops temporarily with the pleasing of the educated ear. Likewise, quality of stress balance in human structure, through Rolfing, is an art where the educated perception of the practitioner is of paramount importance.

Since "seeing" in Rolfing is interactive, this article is intended to assist perception by suggesting a point of view to be included when working; or in the unending discussion of symbolic Rolfing.

Comparisons of this kind aren't unknown Rolfers. Others, including Dr. Rolf, have referred to the principle of vertical balance through stress equalization, such as in comparisons of the body with R. Buckminster Fuller's tensegrity mast. Even though Fuller developed a non-orthogonal geometry based on triangles, his system was still a way of equalizing stress distribution to create structural integration.

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For the purposes of this article, I prefer to use common engineering definitions for stress, strain, and tension because they seem less ambiguous than when mystified by the medical profession. Tension is defined as a force, such as gravity, or a combination of forces acting on the resistance of materials, giving rise to stress and strain. Stress is a condition in materials or structure arising from tension which is evidenced by strain. Strain is the deformation of structures resulting from tension or stress. Strain energy is the work performed upon unloading strain. Harmoniously integrated stress occurs when tension unites opposites in appropriate relationship.

I'm taking the liberty of stretching the definition of tension into a dynamic relationship of opposites; such as flow and resistance, or gel.; *sol., agonist-antagonist, origin-insertion, inside-outside, dual operator, etc. There are literally as many opposites in human structure as can be imagined. Also, if stress is defined as a *condition* which exists throughout the system on the molecular level, then it's a small stop to define it as a field that represents the sum of all the various tensions. Tension and stress in fascial elasticity maintain continuity in the dynamic shape of the organ of form by uniting opposites like, top, bottom, front, back, inside, outside, joints functioning in opposition, etc., all in relation to gravity. Equally distributed stress relative to gravity holds bridges up, and allows humans to be vertical. Disorganized or unbalanced stress forces the structure to seek stability in the next lower order of integration, the twist, which is called strain.

So, when the client presents disharmonious stress that's twisting their structure in strain, how can we help them equalize the stress without taking the elastic elements off so to speak, and starting over. We obviously *release* tissue in oppositional symmetry, like loosening instead of tightening the banjo head. This is a frame of reference for "seeing" the design of the recipe, through which, structural aberration makes sense, and a basis can be formed for determining the nature of intervention.

How does the above example, of the two dimensionality of the banjo, relate to fascial anatomy, or the body's three or four dimensionality? My current metaphor for the dynamic composition of the organ of form is that of an elastic/colloidal gradient made of a slowly moving river of matter/energy flowing into a human shaped wave, then passing on to fulfill other form. Like stones in the river bed, the hard inelastic places, such as bone and scars, or inelastic memory, such as belief, maintain the shape of a stress field, which gives shape to the wave. While work is in progress, the elastic/colloidal wave is as subject to universal law as all other form. Rolfing interaction can be said to intercept and redirect the flow of matter/energy through the wave form by re organizing the path of least resistance in the elastic/colloidal gradient.

Within this wave structure there is an initial or contextual pattern of stress that's built in as a necessary consequence of biological development in gravity. This initial stress field can be said to be composed of countless dynamic ever changing stress patterns. Some elements of these patterns, such as is represented by bone, change fairly slowly over time as they respond to change, or lack there of, in the over all stress field. Other stress patterns built into body elasticity change rapidly in response to, and thereby guide, the movement of circulatory, pulmonary, visceral, motor and other forces necessary to sustain the life of the overall structure.

This initial stress field is resilient, yet mutable, and will twist when it's integrity is compromised by trauma. It will of course untwist when it's integrity is restored. Trauma can be defined as anything that disturbs the integrity of the initial, or optimal stress field. Because connective tissue cells "spin" collagen molecules along tension vectors, an unchanging pattern of non-initial tension becomes "built in" as inelasticity in the overall elastic gradient. It may be said that Rolfing is designed to return the body to a semblance of it's initial stress field by re-elasticizing non-initial inelasticity through de-compensation in symmetrical opposition...Quite a mouth full, huh.

Before discussing the implications of all this to the recipe, I feel it's necessary to review the so called orthogonal description of three dimensional space, or form. Interestingly, big words not withstanding, orthogonal space is paleolithic and has been universally used by humans for thousands of years to find direction. In such distantly separated ancient cultures as China and the north central planes of North America, tradition defines one's relation to the universe as: standing at the intersection of six cardinal directions; up, down, north, south, east, and west. The D Lakota add a seventh direction; all directions from the heart.

These six cardinal directions follow the coordinates established by three opposite axis', each of which are at right angles to all the others, like the jacks played with by children. Again, right angles are considered to be opposites.

It could be said that along each of these opposing axis' there are twelve opposite directions; six directions toward and six directions away from their common negatively infinite in-

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tersection. (The direction toward the center of the common intersection is negatively infinite, and the direction away is positively infinite). If space can be said to be composed of an infinite amount of negatively infinite points, then this configuration represents a fundamental element of manifestation and could provide coordinates for interpreting the movement of energy. Of course these opposing axis' are aligned on earth by the gravitational field into a vertical and two horizontals. This is an expression of the unity of opposites in it's most basic geometry.

These opposing axis' form the basis for the sagittal, coronal, and transverse planes of the body. The intersection of the sagittal and coronal, of course, can be, but isn't necessarily, the palintonic line.

There still appears to be little relationship between orthogonal form, anatomy, or the body as a segmented volume. There are literally as many ways to perceive the body as we can imagine. One could even imagine the body as a vertically stretched torus or doughnut with a very long folded hole. Orthogonal body geometry, seen as a volume, dictates that each of the planes has two opposite sides, and at least four opposite edges. One could also imagine laminated planes. The order of complexity found in gross anatomy seems necessary to simplify function in orthogonal space. Since much of Rolfing is concerned with changing the way function is guided by the distribution of stress in the passive organ of form, the discussion below is directed at treating fascia as simply an elastic element, not unlike any other found in nature, and therefore is subject to the same principles of stress distribution in the orthogonal space created by gravity.

To illustrate the relationship of orthogonal space and the recipe, I've simplified the recipe into terms that are directly applicable. It's useful to imagine that if we were to decompensate the sagittal plane, we would begin by releasing it along it's edges near the center, i.e. the costal arch, the sternum, and dorsal hinge, like in the first hour. We would then decompensate a major opposite, (right angle), structural relationship to the sagittal plane, i.e., a coronal/transverse axis, the shoulder girdle. Then balance this by work on the other major coronal/ transverse axis, (the hip), at the trochanter. The earlier release along the edge of the sagittal plane above the hip is balanced by oppositional release on the sagittal edge behind the coronal plane and below the hip on the hamstrings. Continuing in oppositional symmetry we release the bottom of the sagittal axis at the ischia. As in all hours, the back is included, and finally a top of the sagittal axis is loosened around the thoracic outlet.

In the second hour we release another major transverse/coronal axis, (the ankle) to provide a flexible foundation for the work to follow.

Then to decompensate the opposite of the edge of the sagittal plane, as done in the first hour, we decompensate the edge of the coronal plane along the periphery *toward* the iliac rest.

The fourth hour then continues this pattern by decompensating the inner part of the coronal plane along the medial line and directs release toward the "core" of the body.

The fifth decompensates the front of the coronal plane, or the sagittal edge from the knees and costal arch toward the crossing of the psoas over the pubes and continues release in the "core".

The sixth decompensates the back of the coronal plane from the soles of the feet and the mid-back toward the sacrum.

The seventh is opposite 3-4-5-6 in that it decompensates the top of the structure from the thoracle outlet up.

8 and 9 also generally reverse the direction of hours 3-4-5-6 by working from the middle, (iliac crest), toward the ends.

10 relates the coronal/transverse hinges to one another as well as all of the now more vertical structure to a cleaner right angle to the ground. Relating hinges takes on a different meaning if seen in context of the organ of form as mentioned above, where joint becomes anywhere that isn't bone. Horizontality then becomes visible throughout the structure.

Not only is there symmetry to be found in the topographical order in the recipe, it's symmetrical in time an well. For all practical purposes, the recipe occurs simultaneously. The whole recipe can be viewed as one ten-hour session divided into ten one-hour sessions where each hour prepares for those which follow while continuing the process set in motion by the preceding sessions.

These principles designed into the recipe form a basis for "seeing" the different degrees of order/ disorder that individual bodies have managed to achieve on their own. Without them, the multitude of stress configurations found in un-Rolfed individuals would be too confusing to form any clear basin for intervention. Seeing that there were precious few with the necessary charisma to overcome this obstacle, Dr. Rolf created a teaching system called grandma's recipe. She said on numerous occasions that "if the recipe is practiced long enough with sufficient attention paid to what happens, the ability to "see" what to do will emerge spontaneously". Seeing the results of intervention is an on going interactive education of perception.

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In my auditing phase, I was privileged to witness a complete ten hours by Dr. Rolf where she literally spread the tissue away from the lateral and medial lines and directed all her work, as well as her words, into this modality while working with a paraplegic with no volitional control below the second or third thoracic. At the end of the series, he was sitting unassisted on a backless bench with his feet on the ground. This clearly demonstrated the effectiveness of this strategy as well as the reality that *the passive organ of form is self-supporting.*

The discovery that the shape of the organ of form is constantly compensating, and that this process can be beneficially manipulated brought up the obvious question; What is the frame of reference for introducing change? Clearly it's the orthogonal coordinates established by the gravitational field which the body uses to it's own advantage when self organizing it's initial stress field. This provides yet another point of view for interactive "seeing" through work with structure. Seeking ways to provide individuals with what is needed to remind them to volitionally self-organize, so the passive organ of form becomes a shape that's self-supporting, as well as internally self-organizing. Seeing in terms of harmonizing opposites helps in this cause.

Orthogonal harmony as a point of view can provide interesting insights into human structure. For instance, one can see how the multi-axial function of the shoulder serves as a compensator for lateral balance, as can be seen in the reflex to stick ones arms out in the coronal plane when walking along it's opposite, the sagittal plane of the railroad rail. Although seldom noticed this reflex is constantly active and may account for the mediation of shoulder symptoms from work on the feet and ankles. One can also see how the hip and head balance the spine in unison from opposite ends. The head is an articulating mass which provides inertia at the top of the spine for the pelvis to balance the spine against, much in the way that the circus strong man balances a long pole by simply staying under the articulating mass of the acrobat at the top. Also, there is a Tibetan meditation on the spine an if it were a green willow stick balancing a ball of mud on it's top. Of course the head and pelvis communicate through the spine all along it's length as well. All of the factors cited above, plus literally as many as can be imagined, are expressions of how the unity of opposites is fundamental to corporeal existence.

There seem to be several definitions of core and sleeve in Rolfing lexicon. I prefer a definition of core

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laid down by Dr. Rolf in my advanced class with her. Her definition at that time was, "core is whatever it would be impossible to live without". If we look historically at all the parts allopaths have cut off or out of patients, which left them still living, there isn't much left that can be called core, by this definition.

I prefer to define the sleeve as the intermediary between the core and the environment. Trauma, as defined above, would then be a product of interaction with the environment. Because this interaction could be said to be largely governed by the core state, trauma can also emanate from abstract memory, or other non-physical relationships with the environment, out into the sleeve and the stress field as well. The question of the origin of trauma is enigmatic. The recipe in beautifully designed to cut through such chicken-egg paradoxes by working with whatever we can get our hands on.

It's well to remember that core and sleeve, as well as orthogonal, and Fuller's descriptions of form and space are all made up symbolic representations that may bear no more resemblance to actuality than that they work pretty well most of the time. Flimsy as they are, these definitions do serve a useful purpose by setting limits to our search for clean definitions in this world of approximations and so can steer us away from taking our ritual of naming things too seriously, or thinking that semantic distinctions are somehow real.

Even if such distinctions are accepted, are core and sleeve distinct enough, in the body as it is, to require fundamentally opposite viewpoints and approaches on the way to achieving stress harmony through the unification of opposites? Or does their integration require similar approaches? Is there a new paradigm waiting to be revealed beyond the limits of our present symbolic knowing?

What are the limits of structural integration and where is advanced work leading us? Is advanced work simply integration on a deeper and more harmonious level than that achieved in the initial ten, or are we searching for new possibilities and potential lying latent in human structure? If so, will an exploration of the limits of human structural mutability make it necessary to seek a new premise and intention? As we all know, intention manifests almost too quickly and powerfully with after-ten structure. As our understanding of this potential evolves, so must our paradigm. I'm currently interested in the possibility that work with after-ten structures could be a doorway into ways of stimulating human evolution on the scale of the individual lifetime.

Whether or not this is possible, I feel that all intervention will continue to require a need for mindfulness of the principles set out above.

Once the recipe has fundamentally altered the dynamics and quality of the stress field, the need to perceive structure as it is, becomes all the more important. Intervention in an individual's ongoing changes must, at least, coincide with their present state on the road to either the initial, optimum, or even the evolutionary stress context.

Although balance and the unity of opposites aren't necessarily synonymous, the idea of the unity of opposites can be expanded to include more than work on the fabric of the body. It's a way of maintaining mindfulness in every aspect of the art of Rolfing interaction.

In my life/practice, all of this requires me to track my own ever changing stress context, state of being and frame of reference by practicing mindful maintenance and development along the line. This means seeking greater unification of opposites in all I do. In other words, as in all else, complete harmony of opposites is found in accepting the essential singularity of existence, which obviously includes the Rolfing circumstance. Perception of client structure, as it is, then becomes "seeing" the entire Rolfing circumstance, as it is, which can be expressed as, a unified interaction between non-separate beings in all of that which is. Effectiveness can then be said to hinge on the quality of interaction, which greatly depends on the degree of recognition of the essential singularity of existence. Circular as this sounds, I know it to be that which is, regardless of my persistent perception of separateness. All is inevitably one, even if not perceived as so. □